Aviation Investigation Final Report

Location:	Cedar City, Utah	**Accident Number:**	WPR20LA249
Date & Time:	August 2, 2020, 08:41 Local	**Registration:**	N225HJ
Aircraft:	North American Navion	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot and pilot-rated passenger departed from Strawberry Valley Estates Airport (UT24), Alton, Utah, on a cross-country flight. The airplane flew in a direction that was consistent with a heading toward their planned destination, Cedar City Regional Airport (CDC), Cedar City, Utah. As the airplane neared its destination, witnesses heard the pilot make a distress call indicating that the airplane was out of gas and that he was trying to make a forced landing in a field. Other witnesses observed the airplane descending and then impacting terrain. Shortly thereafter, a nearby communications tower collapsed.

Postaccident examination of the airframe and engine revealed no preimpact malfunctions or failures that would have precluded normal operation. The airplane's main fuel tanks held 20 gallons each with a total of 39.5 gallons of usable fuel. According to a friend of the pilot, the airplane was fueled at North Las Vegas Airport (VGT), Las Vegas, Nevada, on the day before the accident. The airplane then departed VGT and flew two flights with a total time of about 1 hour 55 minutes. On the day of the accident, the airplane departed UT24, which was about 30 miles (and about 20 minutes of flying time) from the last known point of contact from the previous day. The accident flight's duration was about 31 minutes. The airplane's distance traveled since fueling was consistent with consuming the usable fuel in the main fuel tanks. Thus, the airplane's fuel load at the time of departure from UT24 was insufficient to complete the planned flight to CDC, and a total loss of engine power ensued.

Additionally, examination of the airplane wreckage at the accident site revealed a support guy wire from the communications tower wrapped around the front of the airplane. Thus, while attempting the forced landing, the pilot failed to see and avoid the communications tower and subsequently struck the guy wire.

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 due to fuel exhaustion. Contributing to the accident was the pilot's improper fuel planning and failure to see and avoid the communications tower support guy wire.

Findings

Aircraft	Fuel - Fluid management
Personnel issues	Fuel planning - Pilot
Personnel issues	Monitoring environment - Pilot
Environmental issues	Tower/antenna (incl guy wires) - Effect on equipment

Factual Information

History of Flight

Enroute	Fuel exhaustion (Defining event)

HISTORY OF FLIGHT

On August 2, 2020, about 0841 mountain daylight time, a North American Navion airplane, N225HJ, was substantially damaged when it was involved in an accident near Cedar City Regional Airport (CDC), Cedar City, Utah. The pilot and pilot-rated passenger were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to a friend of the pilot, the airplane was topped off with fuel at North Las Vegas Airport (VGT), Las Vegas, Nevada, on the day before the accident. The airplane's main fuel tanks held 20 gallons each with a total of 39.5 gallons of usable fuel. Publicly available radar information indicated that the airplane departed VGT that day and flew two flights with a total time of about 1 hour 55 minutes. Radar data showed that, on the day of the accident, the airplane departed Strawberry Valley Estates Airport (UT24), Alton, Utah, about 0815; UT24 was about 30 miles (and about 20 minutes of flying time) from the last known point of contact from the previous day. After departure, the airplane flew southwest before turning north where it continued to track for the remaining portion of the flight captured by radar data. The airplane's direction was consistent with a heading toward CDC.

As the airplane approached its destination, witnesses heard the pilot make a distress call. The pilot stated that the airplane was out of gas and that he was going to try to land in a field. Other witnesses observed the airplane descending and then impacting terrain. Shortly thereafter, a nearby communications tower collapsed.

WRECKAGE AND IMPACT INFORMATION

Local law enforcement and the Federal Aviation Administration responded to the accident site. Examination of the accident site revealed that all major components of the airplane were located at the site. A support guy wire from the tower was observed wrapped around the front of the airplane. There was no post impact fire.

The airplane came to rest inverted about 7 miles southwest from CDC and a few hundred feet from the collapsed tower. The wreckage site was on flat terrain at an elevation of about 5,475 ft. The outboard portion of the right wing separated and was found a few feet from the main wreckage. The right horizontal stabilizer and elevator remained attached but sustained impact damage. The front of the fuselage was also damaged. The main landing gear was extended, and the nose wheel had separated.

A review of information on the communication tower revealed that it was about 400 ft in height and constructed of steel. The tower had 5 sets of guy wires that were connected to it at different elevations. The first wire was at 80 ft, the second wire at 160 ft, the third wire at 240 ft, the fourth wire at 320 ft, and the highest wire at 380 ft. Each wire had a varying width between 5/16 to 9/16 of an inch, which increased in width the higher the elevation. There were 3 guy wires at each elevation.

Postaccident examination of the airframe and engine revealed no preimpact anomalies that would have precluded normal operation.

MEDICAL AND PATHOLOGICAL INFORMATION

The Office of the Medical Examiner, Utah Department of Health, Taylorville, Utah, conducted an autopsy on the pilot. His cause of death was blunt trauma. Toxicology testing performed by the Federal Aviation Administration Forensic Sciences Laboratory on the pilot's liver specimen detected dextrorphan, which is a cough suppressant used in many cold medications and is generally considered not impairing.

Pilot Information

Certificate:	Private	**Age:**	52,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	November 19, 2019
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 100 hours (Total, all aircraft)		

Pilot-rated passenger Information

Certificate:	Private	**Age:**	63,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 None	**Last FAA Medical Exam:**	October 20, 1995
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 280 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	North American	**Registration:**	N225HJ
Model/Series:	Navion No Series	**Aircraft Category:**	Airplane
Year of Manufacture:	1947	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	NAV-4-188
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	April 14, 2020 Annual	**Certified Max Gross Wt.:**	2750 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2308.3 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	C91 installed, activated, did not aid in locating accident	**Engine Model/Series:**	E-225-9
Registered Owner:	On file	**Rated Power:**	225 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:	KCDC,5618 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	08:53 Local	**Direction from Accident Site:**	35°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.21 inches Hg	**Temperature/Dew Point:**	25°C / 0°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Alton, UT (UT24)	**Type of Flight Plan Filed:**	None
Destination:	Cedar City, UT (CDC)	**Type of Clearance:**	Unknown
Departure Time:	08:14 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Cedar City Rgnl CDC	**Runway Surface Type:**	Dirt
Airport Elevation:	5621 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	37.603332,-113.18888(est)

Administrative Information

Investigator In Charge (IIC):	Nixon, Albert
Additional Participating Persons:	Kenneth Joyce; Federal Aviation Administration; Salt Lake City, UT
Original Publish Date:	September 14, 2022
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=101721