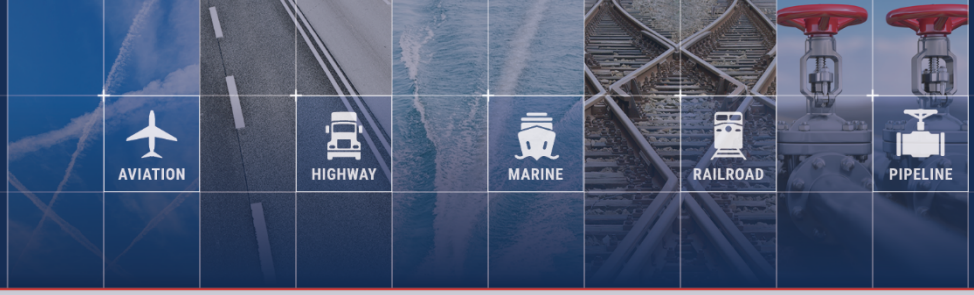

Aviation Investigation Final Report

Location:	NEW HARTFORD, New York	**Accident Number:**	IAD97FA011
Date & Time:	October 22, 1996, 15:26 Local	**Registration:**	N4564K
Aircraft:	Ryan NAVION	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot had flown 1 hour and 35 minutes in IMC conditions uneventfully. Upon arrival, the pilot was given a vector to intercept the localizer and was cleared for the ILS Runway 33 approach. Approximately one minute later the pilot reported to the tower '... on the approach' and was cleared to land. Radar data showed that the airplane intercepted the localizer path, and a left turn continued to a southwesterly direction. The airplane descended through 3,000 feet and radar contact was lost. A witness 1/4 mile from the accident site said he heard and saw the airplane pulling straight up, and he observed the right wing separate. Wreckage was located about 7 miles southeast of the airport in a wooded area, and was scattered over a distance of 200 feet. The right flap panel was suspended in a tree, 75 feet high at the accident site. The right and left wings were 102 and 93 feet southwest of the main wreckage. Inspection of the wing roots revealed the right and left wing spars were fractured at 45 degrees from the top to lower spar caps. About 1/4 mile from the accident site, the weather was reported to be 500 foot overcast with 4 miles visibility in rain showers. The attitude indicator was examined at the NTSB Lab. The NTSB report stated: '...Visual examination of the case disclosed no evidence of rotation damage.'

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of control for undetermined reasons.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH - IAF TO FAF/OUTER MARKER (IFR)

Findings
1. (F) WEATHER CONDITION - CLOUDS
2. (F) WEATHER CONDITION - RAIN
3. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: DESCENT - UNCONTROLLED

Findings
4. WING - OVERLOAD
5. DESIGN STRESS LIMITS OF AIRCRAFT - EXCEEDED
6. WING - SEPARATION

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
7. OBJECT - TREE(S)

Factual Information

HISTORY OF FLIGHT

On October 22, 1996, at 1526 eastern daylight time, a Ryan Navion, N4564K, collided with terrain near New Hartford, New York. The certificated private pilot and the one passenger were fatally injured. The airplane was destroyed. Instrument meteorological conditions prevailed for the flight, and an instrument flight rules (IFR) flight plan was filed. The personal flight was conducted under 14 CFR Part 91, and originated in College Park (CGS), Maryland, at 1335. The intended destination was Utica (UCA), New York.

The pilot had planned to fly his son to Utica and return the same day. According to Air Traffic Control (ATC) records, at 0730, the pilot telephoned the Elkins Automated Flight Service Station (AFSS) and obtained a preflight pilot brief for an IFR flight from CGS, to UCA, and filed an IFR flight plan. At 0932, the pilot telephoned the Altoona AFSS for specific weather information for the flight. At 1057, the pilot telephoned Altoona stating he was departing, at 1230, and he requested the current conditions at UCA.

At 1220, the pilot again telephoned Altoona AFSS and obtained a standard preflight pilot weather briefing for an IFR flight, that was to depart between 1230, and 1300. He told the specialist that he had been watching the weather all morning, and that the weather at UCA was "real low IFR." The pilot was advised by the specialist that the visibility had dropped from 6 miles down to 4 miles in light rain and mist.

The pilot departed CGS, at 1335, and was cleared by Washington Center to proceed northwest VFR below the Class Bravo Airspace. The pilot was then issued his IFR clearance and instructed to climb to 5,000 feet, at 1337. The pilot was issued a climb to 7,000 feet, where the flight proceeded uneventful for the next hour and 35 minutes.

At 1510, the pilot contacted the Griffiss Approach control, and was advised of the current altimeter setting. At 1519, the Griffiss controller began to vector the pilot to the final approach course, and assigned a heading of 010 degrees.

At 1523, the Griffiss controller cleared the airplane down to 3,000 feet mean sea level (MSL). At 1524, the pilot was issued an approach clearance for the UCA ILS approach to Runway 33. The pilot incorrectly read back the assigned heading, and the controller clarified the heading, and reissued the approach clearance. At 1525:33, the controller transferred the pilot to the Utica tower frequency. At 1526, the pilot reported on the tower frequency and was issued the wind, altimeter, field conditions, and was cleared to land. The pilot acknowledged the landing information. The controller reported that, at 1527:24, he observed the airplane on the Brite Radar turning to the left to a south bound direction. At 1528, Griffiss East Radar controller lost

contact with N4564K, and there were no further radio transmissions from the pilot.

A witness 1/4 mile from the accident site, stated that he was in a parking lot when he heard an airplane. He stated that the clouds were about 40 feet above the tree line, and he did not initially see the airplane. He stated that shortly thereafter, he saw the airplane pulling straight up, the right wing separated, and the airplane rolled to the left. The witness reported that the weather was cloudy, and it was drizzling at the time of the accident.

According to the National Transportation Safety Board's radar specialist report, primary and secondary radar data from Boston Air Route Traffic Control Center revealed that between 1524, and 1525, a target was tracked on a northeast heading with altitude fluctuations from 3,700 feet, to 3,400 feet MSL.

The report also revealed that, at 1525:52, the target was at an altitude of 3,000 feet MSL, made a left turn, and descended to 2,800 feet MSL. At 1526:28 the target made a right turn, and 12 seconds later it completed a left turn, followed by a sharp left turn to a southerly direction, and descended through 2,500 feet MSL.

The airplane impacted terrain about 7 miles southeast of the Oneida County Airport, in a wooded area, during the hours of daylight about 43 degrees, 1 minute North latitude and 75 degrees, 16 minutes West longitude.

PERSONNEL INFORMATION

The pilot held a Private Pilot Certificate with a single engine land and instrument rating. A review of his pilot log book revealed that, he had accumulated over 263 hours of total flight experience. He had logged more than 35 actual instrument hours, including 2 hours within the last 30 days. The last recorded actual instrument experience was October 18, 1996. His most recent FAA Third Class Medical Certificate was issued on August 7, 1996, with limitations to have available glasses for near vision.

AIRCRAFT INFORMATION

N4564K was a Ryan Navion, serial number NAV-4-1564, and was equipped with a Continental IO-520B6BR engine, serial number 234752. According to the owner, the airplane's maintenance records were kept in the airplane. The owner stated that the last annual inspection was completed on January 26, 1996, and the airplane had accumulated over 108 hours since the inspection. The maintenance records were not found or produced.

METEOROLOGICAL INFORMATION

At 1540, Oneida County Airport, Utica, New York, reported the following observation:

Sky condition, ceiling 500 overcast; visibility, 4 miles in light rain mist; temperature, 48 degrees

Fahrenheit (F); dew point, 45 degrees F; winds from 290 degrees at 7 knots; and altimeter 30.00 Inches Hg.

WRECKAGE AND IMPACT INFORMATION

The airplane wreckage was examined at the accident site on October 23, 1996. The wreckage was distributed over an area approximately 200 feet long, oriented on a magnetic heading of 040 degrees.

The main wreckage consisted of the fuselage, engine, right side stabilizer, right side elevator, rudder, and vertical stabilizer. A fire burned the compacted nose section which contained the engine, firewall, and instrument panel. The outboard and inboard sections of the left side stabilizer were 40 feet and 90 feet west of the main wreckage. The left and right wings were found 102 and 93 feet southwest of the main wreckage. The flap panel was detached from the right wing and was suspended in a tree, 75 feet high.

The wreckage was reassembled on site, and then moved to a storage facility in New Hartford, New York, for further examination. On October 24, 1996, the wreckage was reconstructed under the supervision of the NTSB.

The right and left wings were separated from the fuselage. The wings were generally intact, except for the right wing tip tank which was separated. Inspection of the wing roots revealed the right and left wing spars were fractured from the top to lower spar caps, approximately 45 degrees.

The detached right wing section was about 14 feet, 3 inches long. The aileron was intact and attached to the center mount and push rod. The aileron was detached from the inboard and outboard attachment points. One aileron cable was confirmed for continuity to the aileron push rod.

The right wing contained a 30 and 45 degree crease on the top surface. The 30 degree crease extended forward to aft, from the outboard 2-foot position to the 11-foot position. The 45 degree crease extended forward to aft, from about the 9-foot to 12-foot outboard positions. There was a 1 foot span-wide tear in the wing from the root, adjacent to and similar in dimensions to a cable.

The lower right wing surface contained two creases, one was chord wise the entire width of the wing, 2 feet 5 inches outboard of the wing root. The second extended from 10 feet outboard at the leading edge, rearward to mid-chord distance, about 12 feet outboard.

The landing gear selector switch was in the down position. The left main landing gear was in the retracted position, and the right main landing gear was in the down and locked position. The nosewheel position was not determined. Due to the extent of damage, flight control continuity was not determined.

The engine sustained impact and fire damage. The starter, alternator, magnetos and vacuum pump had separated from the engine. The propeller had also separated from the mounting flange. The fuel pump was removed and the coupling was intact. The fuel manifold was disassembled and residual fuel was found in the unit. Examination of the engine did not disclose any mechanical malfunction.

The Vacuum pump, Attitude and VOR indicators were removed and sent to the NTSB lab for examination. According to the NTSB Physical Science Technician report, the vacuum pump back cover was removed to examine the inner vacuum rotor and vane. Visual examination of the rotor fracture with a bench binocular microscope revealed characteristics indicative of overstress separations. The VOR indicator housing was saw cut opened to inspect the internal components. The examination disclosed that the internal gears and electrical motors had sustained severe impact damage.

The attitude indicator had sustained heavy impact damage and was covered with a soot deposit. The instrument case was disassembled. Examination after disassembly disclosed the internal mechanism of the unit had sustained severe impact damage. The gyroscope case was intact and the gyro operated without difficulty when tested with compressed air. The report also stated, "Visual examination of the case disclosed no evidence of rotation damage."

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy and toxicological testing of the pilot was conducted by Dr. Barbara C. Wolf, M.D., Medical Examiner of Oneida County, New York. 1615 Tina Lane, Castleton, New York, 12033, (518) 732-7272.

Toxicological testing was conducted by the FAA Civil Aeromedical Institute (CAMI), in Oklahoma City, Oklahoma, on January 23, 1997.

ADDITIONAL INFORMATION

The aircraft wreckage was released to the owner's representative on October 25, 1996.

Pilot Information

Certificate:	Private	**Age:**	48,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	August 7, 1996
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	263 hours (Total, all aircraft), 193 hours (Pilot In Command, all aircraft), 31 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Ryan	**Registration:**	N4564K
Model/Series:	NAVION NAVION	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	NAV-4-1564
Landing Gear Type:	Retractable - Tricycle	**Seats:**	5
Date/Type of Last Inspection:	January 26, 1996 Annual	**Certified Max Gross Wt.:**	3233 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO 520-B
Registered Owner:	JOHN M. DAMGARD	**Rated Power:**	285 Horsepower
Operator:	TERRY L CLAASSEN	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	UCA ,743 ft msl	**Distance from Accident Site:**	7 Nautical Miles
Observation Time:	15:40 Local	**Direction from Accident Site:**	330°
Lowest Cloud Condition:	Unknown	**Visibility**	4 miles
Lowest Ceiling:	Overcast / 500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	290°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	9°C / 7°C
Precipitation and Obscuration:	Light - Showers - Rain		
Departure Point:	COLLEGE PARK , MD (CGS)	**Type of Flight Plan Filed:**	IFR
Destination:	UTICA , NY (UCA)	**Type of Clearance:**	IFR
Departure Time:	13:35 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	ONEIDA COUNTY UCA	**Runway Surface Type:**	Asphalt
Airport Elevation:	743 ft msl	**Runway Surface Condition:**	
Runway Used:	33	**IFR Approach:**	ILS
Runway Length/Width:	6001 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-ground
Total Injuries:	2 Fatal	**Latitude, Longitude:**	43.07022,-75.280166(est)

Administrative Information

Investigator In Charge (IIC):	Drake-nurse, Beverley
Additional Participating Persons:	ALDEN C BELCHER; ALBANY , NY GEORGE HOLLINGSWORTH; RESTON , VA
Original Publish Date:	January 23, 1998
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=28119