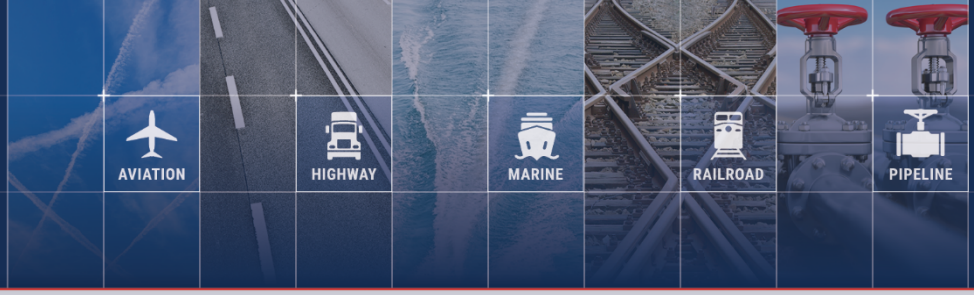

Aviation Investigation Final Report

Location:	South Shore, South Dakota	**Accident Number:**	CHI03LA133
Date & Time:	May 19, 2003, 01:30 Local	**Registration:**	N6155S
Aircraft:	Air & Space 18A	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The gyroplane was destroyed when it impacted the terrain near the top of a hill while on a night cross-country flight. The pilot held a student pilot certificate issued three months prior to the accident. No records were recovered that indicated that the pilot had completed the knowledge or practical tests for further certificates or ratings. No pilot flight records were recovered during the investigation. The aircraft wreckage was found on a direct line between the last departure point and the intended destination. An employee of a fixed base operator at the last departure point stated that the pilot asked if there was a place where he could check the weather. The employee stated that he believed that the weather was of concern to the pilot. He stated that the pilot told him that he had a difficult time finding the last departure point. Marginal night visual meteorological conditions prevailed at the time of the accident. A weather reporting station located about 16 statute miles southwest of the accident site recorded 5 statute miles visibility, a broken ceiling at 2,200 feet above ground level and light rain and mist. The temperature-dewpoint spread was recorded as 1 degree Celsius. A postaccident examination was conducted, however control system continuity or structural integrity could not be determined because of the extensive impact and fire damage. A "Final Forensic Toxicology Fatal Accident Report" revealed the presence of FLUOXETINE and NORFLUOXETINE. Fluoxetine is a prescription antidepressant also indicated for the use of obsessive-compulsive disorder and bulimia nervosa (an eating disorder) and often known by the trade name Prozac. Norfluoxetine is a metabolite of fluoxetine. The student pilot held a Statement of Demonstrated Ability for monocularity (he had functional vision in only one eye) due to a congenital cataract. He did not note the use of fluoxetine or any other antidepressant on his application for airman medical and student pilot certificate, nor did he indicate on that application any diagnoses for which fluoxetine is indicated.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain clearance from the terrain. The pilot's lack of experience, the rain, the dark night, the low ceiling, and the rising terrain were contributing factors to the accident.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: CRUISE

Findings
1. (F) LIGHT CONDITION - DARK NIGHT
2. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
3. (F) LACK OF EXPERIENCE - PILOT IN COMMAND
4. (F) WEATHER CONDITION - RAIN
5. (F) WEATHER CONDITION - LOW CEILING
6. (F) TERRAIN CONDITION - RISING

Factual Information

HISTORY OF FLIGHT

On May 19, 2003, about 0130 central daylight time, an Air & Space 18A gyroplane, N6155S, owned and piloted by a student pilot, was destroyed when it impacted terrain near South Shore, South Dakota. Marginal visual meteorological conditions prevailed at the time of the accident. The personal flight was operating under the provisions of 14 CFR Part 91 without a flight plan. The pilot was fatally injured. The flight departed Joe Foss Field Airport (FSD), Sioux Falls, South Dakota, about 1230 and was en route to the Sisseton Municipal Airport (8D3), Sisseton, South Dakota.

The flight originally departed from the Marion Municipal Airport (43K), Marion Kansas. The pilot made a fuel stop, landing the gyroplane at FSD. Prior to his departure from FSD, the local control tower was closed. The gyroplane subsequently departed FSD to continue the flight to 8D3.

While on the ground at FSD, the pilot had the gyroplane's fuel tanks filled. An employee at a fixed base operator reported that the gyroplane arrived at FSD about 2330 on May 18, 2003. The employee stated that the pilot asked if there was a place where he could check the weather. The employee stated that he believed that the weather was of concern to the pilot. He stated that the pilot told him that he had a difficult time finding FSD.

The accident site was located about 39 statute miles from 8D3 on a direct line from FSD to 8D3.

PERSONNEL INFORMATION

The pilot held a Federal Aviation Administration (FAA) student pilot/medical certificate that was issued on February 28, 2003. The certificate listed the following restrictions:

Must have available glasses for near vision
Valid for student pilot purposes only

No records were recovered that indicated the pilot had completed the knowledge or practical tests for further certificates or ratings. No pilot flight records were recovered during the investigation.

AIRCRAFT INFORMATION

The aircraft was an Air and Space model 18A gyroplane, serial number 18-66, manufactured in

1965. The gyroplane seated two occupants including the pilot in a tandem seat configuration. The cabin portion of the craft was fully enclosed. The maximum certificated gross weight was 1,800 pounds.

A Lycoming O-360-A1D engine powered the gyroplane. The carbureted engine was rated for 180 horsepower at 2,700 rpm. A Hartzell constant speed propeller was utilized.

METEOROLOGICAL INFORMATION

The weather recording station located about 16 statute miles southwest of the accident site recorded the weather at 0137 as:

Wind: 350 degrees magnetic at 6 knots
Visibility: 5 statute miles
Present weather: Light rain and mist
Sky conditions: Broken ceiling at 2,000 feet above ground level (AGL)
Overcast ceiling at 10,000 feet AGL
Temperature: 17 degrees Celsius
Dew point: 16 degrees Celsius
Altimeter setting: 29.88 inches of mercury

COMMUNICATIONS

The airplane had contacted the FSD control tower prior to the fuel stop. No recorded communications were found for the portion of the flight subsequent to the fuel stop.

WRECKAGE AND IMPACT INFORMATION

An FAA inspector conducted a postaccident examination of the wreckage. The gyroplane impacted near the top of a hill about 1.5 miles east and 0.2 miles north of the town of South Shore, South Dakota. The wreckage was distributed in a linear path in a northwesterly direction. The length of the wreckage field was about 500 feet. All of the major airframe components were located within the debris field. A post-impact fire consumed the main cabin section of the aircraft. The main body and engine of the aircraft were located about 195 feet from the first impact point. Three rotor blade impact impressions were found in the ground along the wreckage path. Control system continuity or structural integrity could not be determined because of the extensive impact and fire damage.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot by LCM Pathologists, P.C., in Sioux Falls, South Dakota, on May 22, 2003.

A "Final Forensic Toxicology Fatal Accident Report" by the Federal Aviation Administration listed the following findings:

13 (mg/dL, mg/hg) ETHANOL detected in Muscle
Notes: The ethanol found in this case is from postmortem ethanol formation and not the ingestion of ethanol.

FLUOXETINE detected in Brain
FLUOXETINE detected in Liver
NORFLUOXETINE detected in Brain
NORFLUOXETINE detected in Liver

Fluoxetine is a prescription antidepressant also used for obsessive-compulsive disorder and bulimia nervosa (an eating disorder) and often known by the trade name Prozac. Norfluoxetine is a metabolite of fluoxetine.

The student pilot held a Statement of Demonstrated Ability for monocularity (he had functional vision in only one eye) due to a congenital cataract. He did not note the use of fluoxetine or any other antidepressant on his application for airman medical and student pilot certificate, nor did he indicate on that application any diagnoses for which fluoxetine is indicated.

Student pilot Information

Certificate:	Student	**Age:**	47,Male
Airplane Rating(s):	None	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	February 28, 2003
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Air & Space	**Registration:**	N6155S
Model/Series:	18A	**Aircraft Category:**	Gyroplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	18-66
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	1800 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	O-360-A1D
Registered Owner:	On file	**Rated Power:**	180 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	ATY,1748 ft msl	**Distance from Accident Site:**	16 Nautical Miles
Observation Time:	01:37 Local	**Direction from Accident Site:**	220°
Lowest Cloud Condition:	Unknown	**Visibility**	5 miles
Lowest Ceiling:	Broken / 2000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	17°C / 16°C
Precipitation and Obscuration:	N/A - None - Unknown obscuration		
Departure Point:	Sioux Falls, SD (FSD)	**Type of Flight Plan Filed:**	None
Destination:	Waterton, SD (ATY)	**Type of Clearance:**	None
Departure Time:	12:30 UTC	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-ground
Total Injuries:	1 Fatal	**Latitude, Longitude:**	45.1025,-96.884719

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Alan Christianson; FAA- Rapid City FSDO; Rapid City, SD
Original Publish Date:	July 29, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=57041