



National Transportation Safety Board Aviation Accident Final Report

Location:	HELENA, MT	Accident Number:	DEN88FA063
Date & Time:	02/03/1988, 2000 MST	Registration:	N517S
Aircraft:	CESSNA 421A	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	3 Fatal
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

THIS ACCIDENT OCCURRED DURING A NIGHT, ILS APP TO RWY 27 IN IMC. THE ACFT COLLIDED WITH A MOUNTAIN 12 NM ESE OF THE ARPT WHILE TURNING INBOUND TO INTERCEPT THE LOC COURSE. INVESTIGATION REVEALED THAT ONE VOR RECEIVER WAS SET ON THE DESTINATION ILS FREQ, THE SECOND VOR WAS SET ON AN EN ROUTE VOR 51 NM WEST OF THE DESTINATION ARPT, AND THE DME RADIO, A SEPARATE TRANSCEIVER, WAS SET ON THE DESTINATION DME TRANSMITTER. THE FREQS OF THE EN ROUTE VOR AND THE DESTINATION VOR WERE 117.1 AND 117.7, RESPECTIVELY. THE OUTBOUND COURSE FOR THE ILS APP PROCEDURE WAS 088 DEG AND THE ACFT SITE WAS LOCATED ON THE 088 RADIAL OF THE EN ROUTE VOR. INVESTIGATION ALSO REVEALED THAT THE PIC WAS OCCUPYING THE RT FRONT SEAT AND AN EXPERIENCED PLT WHO WAS NOT CURRENT IN THIS AIRCRAFT WAS OCCUPYING THE LEFT SEAT. THE SECOND VOR RECEIVER CONTROL HEAD WAS LOCATED IN THE LOWER RIGHT PORTION OF THE INST PANEL, IN A LOCATION WHERE THE SELECTED FREQ WAS DIFFICULT TO READ.

Probable Cause and Findings

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

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: APPROACH - IAF TO FAF/OUTER MARKER (IFR)

Findings

1. TERRAIN CONDITION - MOUNTAINOUS/HILLY
2. (F) LIGHT CONDITION - DARK NIGHT
3. (C) IFR PROCEDURE - IMPROPER - PILOT IN COMMAND
4. (C) NAVIGATION RECEIVER - IMPROPER USE OF - PILOT IN COMMAND

Factual Information

Pilot Information

Certificate:	Airline Transport	Age:	54, Male
Airplane Rating(s):	Multi-engine Land; Multi-engine Sea; Single-engine Land; Single-engine Sea	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	10/31/1986
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	4900 hours (Total, all aircraft), 119 hours (Total, this make and model), 4503 hours (Pilot In Command, all aircraft), 35 hours (Last 90 days, all aircraft), 35 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N517S
Model/Series:	421A 421A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	421A002
Landing Gear Type:	Retractable - Tricycle	Seats:	3
Date/Type of Last Inspection:	12/08/1987, 100 Hour	Certified Max Gross Wt.:	6840 lbs
Time Since Last Inspection:	22 Hours	Engines:	2 Reciprocating
Airframe Total Time:	4758 Hours	Engine Manufacturer:	CONTINENTAL
ELT:	Installed, not activated	Engine Model/Series:	GTSIO-520-D
Registered Owner:	KENNETH MAMUZICH	Rated Power:	375 hp
Operator:	MINUTEMAN AVIATION	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	MINA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	HLN, 3873 ft msl	Distance from Accident Site:	12 Nautical Miles
Observation Time:	1953 MST	Direction from Accident Site:	303°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	0 Miles
Lowest Ceiling:	Unknown / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	-3° C / -7° C
Precipitation and Obscuration:			
Departure Point:	MISSOULA, MT (MSO)	Type of Flight Plan Filed:	IFR
Destination:	HELENA, MT (HLN)	Type of Clearance:	IFR
Departure Time:	1917 MST	Type of Airspace:	Class E

Airport Information

Airport:	HELENA REGIONAL (HLN)	Runway Surface Type:	Asphalt
Airport Elevation:	3873 ft	Runway Surface Condition:	Snow--dry
Runway Used:	27	IFR Approach:	ILS
Runway Length/Width:	9000 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	NORMAN F WIEMEYER	Report Date:	01/16/1990
Additional Participating Persons:	DONALD PAUL; HELENA, MT		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).