		NTSB ID: DEN04MA015		Aircraft Registration Number: N791FE	
		Occurrence Date: 10/29/2003		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Cody		State WY	Zip Code 82414	Local Time 0854	Time Zone MST
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 2			
Aircraft Information Summary					
Aircraft Manufacturer Cessna		Model/Series 208B		Type of Aircraft Airplane	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
HISTORY OF FLIGHT					
<p>On October 29, 2003, at 0854 mountain standard time, a Cessna 208B, N791FE, registered to Federal Express Corporation (hereinafter referred to as FedEx) of Memphis, Tennessee, and operated by Corporate Air, Inc., of Billings, Montana, as Airspur flight 8773, was destroyed when it impacted terrain and water during a circling approach to Yellowstone Regional Airport (COD), Cody, Wyoming. The airline transport certificated pilot, the sole occupant on board, was fatally injured. Instrument meteorological conditions (IMC) prevailed, and an instrument flight rules (IFR) flight plan had been filed for the nonscheduled domestic cargo flight being conducted under Title 14 Code of Federal Regulations (CFR) Part 135. The airplane departed Natrona County International Airport (CPR), Casper, Wyoming, approximately 0730.</p>					
<p>According to Federal Aviation Administration (FAA) documents, at 0800, the Salt Lake City Air Route Traffic Control Center (ARTCC) asked the pilot of Airspur 8773 if he would be able to execute the VOR (Very high frequency Omnidirectional Radio Range) instrument approach to Cody. The pilot said he could, but he wanted to "hold for awhile to see if [the weather] gets a little better" [according to the 0815 COD METAR (Aviation Routine Weather Report), the visibility was 1.75 statute miles and there was a 200-foot overcast ceiling]. He was cleared to hold north of the Cody VOR at 12,000 feet msl. At 0814, the pilot filed the following PIREP (Pilot Report) with the Casper Automated Flight Service Station (AFSS): "Over Cody; 0814; 12,000 feet; Cessna 208; sky condition, IMC; temperature, minus 04 degrees Celsius (C); turbulence, light; icing, light rime." According to the Cody Unicom operator, the pilot contacted him approximately 0830 and asked for the weather conditions. He told him, "I can barely see Beacon Hill, and [the] last known ceiling was 300 feet. UPS diverted without attempt(ing the instrument approach). Can't make out any ceiling because snow is too thick."</p>					
<p>At 0833, the pilot told the Salt Lake City ARTCC he would make one additional holding circuit, and asked for clearance for the VOR approach. If he had to make a missed approach, he said he would divert to Billings, Montana. ARTCC cleared the pilot for the approach, and told him to either cancel his IFR flight plan or report making a missed approach. There were no further communications between ARTCC and Airspur 8773. Recorded radar data from the National Track Analysis Program (NTAP) depicted the airplane approaching and holding at COD VOR. It also depicted the instrument approach. The last radar contact was at 0846:08 when the airplane was downwind and nearly abeam the departure end of runway 04. Three FedEx employees saw the airplane on the downwind leg for runway 04, just past midfield, at an estimated altitude of 500 feet). Shortly thereafter, one of them heard the engine "spool up to high power...[like reversing] the pitch of the propeller to slow down," and he thought the airplane had landed.</p>					
<p>Ten witnesses submitted written statements and their locations were plotted on a chart. Several of these witness' observations were nearly identical. Witness 1 observed the airplane emerge from a</p>					
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FACTUAL REPORT

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Narrative (Continued)

200 foot ceiling. "It was rocking very badly from side to side. [It] rocked 2 to 3 times before diving 100 to 150 feet onto the highway and skidding into the lake." Witness 2 saw the airplane "bank to the left then back to the right, then back to the left, then took a hard bank to the right. The cockpit of the plane and right wing hit the road...[and the airplane] slid into the lake on its back and landed approximately 30 feet into the water." Witness 3, who was sitting in her office, saw the airplane's "right wing go down sharply. It came back up and the left wing tipped down sharply. The left wing came up and the [air]plane flipped completely over." Witness 7 saw the airplane "waggle left and right, then roll upside down and...drop straight down." Witness 9 said the airplane "appeared to be trying to gain altitude but was shaky. I saw the wing dip to the right...and then to the left...then [it] flipped over to the right and landed upside down on the highway. It bounced and [slid] towards the lake." Witness 10 saw the airplane flying "low and slow (Witnesses 5 and 8 agreed that the airplane was flying "very low")...The plane was falling with its left wing towards the ground. It struck with the tip-bottom of the left wing and then the nose hit." Witness 4 said there were "no motor problems." Witness 5 said the engine was "cutting out and then accelerating." Witness 6 said "the change in the engine sound...[was] like an acceleration noise." Witness 8 said the "motor sounded good."

PERSONNEL INFORMATION

The pilot, age 37, held an airline transport pilot certificate with an airplane multiengine land rating, and commercial privileges in airplanes single engine land. He also held a flight instructor certificate with airplane single engine and instrument ratings. He held a second class airman's medical certificate, dated March 17, 2003, with the limitation, "Holder shall wear corrective lenses."

Three pilot logbooks --- covering the time periods from August 26, 1985 to January 16, 1989, January 18, 1989, to March 31, 1994, and April 4, 1994, to March 24, 2001, respectively --- were made available for NTSB for examination. The following total flight time (in hours) were recorded:


Airplane Single-Engine Land: 8,666.7
 Airplane Multi-Engine Land: 1,219.8
 Turbo-Prop: 4,623.5
 Complex: 3,873.3
 Night: 3,572.1
 Actual Instrument: 1,143.0
 Simulated Instrument (Hood): 113.0
 Flight Simulator: 67.2
 Cross Country: 8,718.9
 Dual Received: 283.6
 As Flight Instructor: 1,038.8
 Total Time: 9,896.5

The pilot had logged no less than 4,640 hours in a Cessna 208. In the remarks section of his logbooks, he noted his icing experience in the Cessna 208, ranging from trace icing to over an inch of ice accumulation.

Corporate Air records indicated the pilot had logged 11,094 total flight hours, of which approximately 1,366 hours in the Cessna 208: 187 hours in the previous six months, 75 hours in the last 90 days, and 19 hours in the last 30 days. He had successfully completed a pilot proficiency check on April 16, 2003.

AIRCRAFT INFORMATION

N719FE (s/n 208B0289), a model 208B "Grand Caravan," was manufactured by the Cessna Aircraft Company in 1991, and delivered to Federal Express that December. It was equipped with a Pratt &

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Narrative (Continued)

Whitney PT6-114A free turbine engine (s/n PS 19166), rated at 675 horsepower, and a McCauley three-blade, constant-speed, full-feathering and reversible propeller.

The airplane was certificated for flight into known icing conditions. Deicing equipment included boots on the horizontal and vertical stabilizers, wing and wing struts, and cargo pod. Anti-icing equipment include heated pitot-static and stall warning systems, windshield and propeller.

The airplane was maintained under an Approved Aircraft Inspection Program (AAIP). The last inspection was on October 1, 2003. At that time, the airframe and engine had accrued 6,885.1 flight hours, 6,599 landings, and 5,833 engine cycles. The propeller had accrued 4,471.6 flight hours. The airplane had flown approximately 64 hours since this last inspection.

METEOROLOGICAL INFORMATION

The following METARs were recorded at COD at 0717, 0815, and 0855, respectively:

Wind, 360 degrees at 9 knots; visibility, 6 statute miles; ceiling, 800 feet overcast; temperature, 03 degrees C.; dew point, -02 degrees C.; altimeter setting, 29.38; remarks, light rain.

Wind, 350 degrees at 6 knots; visibility, 1-3/4 statute miles; ceiling, 200 feet broken, 300 feet overcast; temperature, 01 degree C.; dew point, -03 degrees C.; altimeter setting, 29.40; remarks, light snow.

Wind, calm; visibility, 1 statute mile; ceiling, 200 feet broken, 1,000 feet overcast; temperature, 01 degree C.; dew point, -02 degrees C.; altimeter setting, 29.44; remarks, light snow.

SIGMET (Significant Meteorology) XRAY 6 was issued at 0705 and valid until 1205, covered the entire route of flight. It called for occasional severe turbulence below 15,000 feet msl due to moderate to strong winds over rough terrain. Low level wind shear and strong updrafts were also possible.

The pilot of a United Parcel Service Cessna 402 submitted a written statement for inclusion in this report. He said he had accumulated trace to light rime ice when he was approximately 20 miles north of COD, and while in holding over the COD VOR at 10,000 feet. Because of the weather, he elected to divert to Worland, Wyoming. He said he broke out of the clouds south of COD and the wing ice quickly sublimated. He did not file an icing PIREP with FSS.


Witnesses 4, 5, and 6 said that it was "snowing hard" at the time of the accident. Witnesses 2 and 9 said the roads were "slushy," and the latter said weather conditions were "bad." Witness 10 said weather conditions were "poor...very wet with some snow-rain mix slush on the road about 1 to 2 inches [deep]." A Wyoming State Highway patrolman said some drivers reported "silver dollar" size snowflakes sticking to their windshields at about the time of the accident. Fire and rescue workers reported 2 inches of slush on the road when they arrived at the accident site.

AIDS TO NAVIGATION

There were no reported difficulties with aids to navigation.

COMMUNICATIONS

On October 23, 2003, 6 days before the accident, a powerful solar flare was recorded. The energy particles caused worldwide communication difficulties. The transcript between the ARTCC sector 16 controller and Airspur 8117 revealed several unclear transmissions that required repetitive communications that had to be repeated, due to unclear transmissions. ARTCC attributed these unclear transmissions to the effects of the solar flare.

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Narrative (Continued)

WRECKAGE AND IMPACT INFORMATION

The National Transportation Safety Board arrived in Cody on October 29. The on-scene investigation began on October 30, and terminated on October 31, 2003.

The initial ground impact point was located in the middle of the eastbound lane of U.S. Highway 14, a four-lane, east-west highway, located just south of COD airport. The debris field began at this point and continued in a southeasterly direction into Alkali Lake. A ground scar extended from the southern edge of the highway to the lake. The airplane came to rest inverted approximately 40 feet offshore. Due to wind, weather, traffic, and water current, the exact location of debris following impact could not be determined. Rescue personnel towed the airplane to shore and removed the pilot. The airplane remained partially submerged in water. The engine, along with the nose landing gear, separated from the airplane and was submerged.

The engine and aircraft were removed from the lake on the morning of October 30, 2003, and transported to a hangar for further examination. The right side of the fuselage, at the cowling attachment point, was crushed down and in. The right door broke off from the airplane during the impact sequence and was found on the highway. The right wing remained attached to the airplane. The right flap was down. The trailing edge of the right aileron was wrinkled and the outboard trailing edge was bent down. The wing tip was crushed in and the leading edge was crumpled in an accordion-like manner. The pitot tube was bent and the landing light was shattered. The empennage remained attached to the airplane. The horizontal stabilizer was unremarkable. The elevator trim was set at 1-1/2 degrees up trim. The rudder and vertical stabilizer were crushed. Control continuity was established from all flight control surfaces to their respective cockpit controls. The left wing was crushed and torn 2 feet inboard from the stall indicator. The wing boots had a "ribbed" appearance. The inertial separator was open. The left flap was between 10 to 15 degrees and crushed in. The flap jackscrew was at 30 degrees down. An Emergency Locator Transmitter (ELT) was on board the airplane. It was in the ARMED position and had activated on impact. Due to the airplane being submerged in the water, the signal was not detected until October 30, after the wreckage had been retrieved. Examination of the airplane's systems showed no preimpact anomalies.

The following instruments were documented at the accident site:

Altimeter: 8,750 feet
Kollsman window setting: 29.41
Magnetic Compass: Destroyed
Heading Indicator: 110 degrees


The Power Analyzer and Recorder (PAR), Global Positioning System (GPS), and the annunciator panel were retained for further testing and examination.

On November 5, 2003, the engine bleed valve was examined at Beegles Aircraft Company in Greeley, Colorado. No anomalies were noted.

MEDICAL & PATHOLOGICAL INFORMATION

Several foil packages of Allergy Sinus Gel caps (containing acetaminophen, chlorpheniramine maleate, and pseudoephedrine), and a bottle of Claritin-D 24-hour ER were found in the pilot's flight bag.

The Yellowstone Pathology Institute, Inc., in Billings, Montana, performed an autopsy on the pilot on October 29, 2003. There was no evidence of pre-existing medical conditions that would have been causal to the accident.

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Narrative (Continued)

A toxicological screen was performed by FAA's Civil Aeromedical Institute (CAMI). According to CAMI's report (#200300322001), 0.007 (ug/ml, ug/g) chlorpheniramine, 0.044 (ug/ml, ug/g) desmethylsertraline, 0.027 (ug/ml, ug/g) sertraline, and pseudoephedrine were detected in blood. In addition, chlorpheniramine, sertraline, phenylpropanolamine, and pseudoephedrine were detected in the urine. The urine also contained 13.31 (ug/ml, ug/g) acetaminophen.

Sertraline (trade name Zoloft) is a prescription antidepressant medication. Desmethylsertraline is a metabolite of sertraline. According to the Guide for Aviation Medical Examiners, "The use of a psychotropic medication is considered disqualifying. This includes all... antidepressant drugs..." The pilot did not indicate the use of sertraline on any of his applications for airman medical certificates. Chlorpheniramine is an over-the-counter sedating antihistamine used primarily for the treatment of allergies. Pseudoephedrine (trade name Sudafed) is a decongestant. Phenylpropanolamine is a metabolite of pseudoephedrine. Acetaminophen (trade name Tylenol) is an over-the-counter pain-reliever and fever-reducer.

According to Dr. Stanley R. Mohler's "Medication and Flying: A Pilot's Guide," the adverse side effects of chlorpheniramine include drowsiness, dizziness, and lessened coordination. The side effects of pseudoephedrine are usually mild and infrequent, but may include sleepiness, dizziness, restlessness, headache, and perhaps some loss of coordination and alertness or confusion.

TEST AND RESEARCH

The holding pattern and instrument approach flown by the pilot of N791FE were retrieved from the National Track Analysis Program (NTAP). This recorded radar data are included as exhibits to this report.

The airplane was equipped with a Power Analyzer and Recorder (PAR), p/n SLZ7850, manufactured by Avionics Specialties, Inc., (ASI), of Charlottesville, Virginia. It was sent to ASI where, on November 11, 2003, under the auspices of an FAA accident investigator, the following data that was recorded on the day of the accident was recovered:

Date: 29 Oct 2003
Time: 15:54:54 [Z]

Eng: TT (Inter-Turbine Temperature): 696 C.
TRQ (Torque): 1,716 FLB (foot pounds)
NG (Gas Generator RPM): 98.5%
NP (Propeller RPM): 1,877 RPM
FF (Fuel Flow): 398 PPH (pounds per hour)


Ship: PALT (Pressure Altitude): 5,252 FT
IAS (Indicated Airspeed): 68 KTS
OAT (Outside Air Temperature): -3 C.

The Global Positioning Unit (GPS), a Bendix/King KLN 89B (p/n 066-01148-0101) was sent to Honeywell, Inc., in Olathe, Kansas, for examination. Due to the unit being submerged in the lake, the alkali present in the water damaged the battery, and no information was obtainable.

The Cessna Annunciator Panel (p/n 2670104-1) was sent to the Cessna Aircraft Company in Wichita, Kansas, for examination under the auspices of an FAA representative. The light bulb filaments were examined and were unremarkable.

ADDITIONAL DATA


In addition to the Federal Aviation Administration, parties to the investigation included Federal


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Express Corporation, Corporate Air, Inc., and the Cessna Aircraft Company.

The wreckage was released to the aircraft retrieval and salvage company, Beegles Aircraft Service, Inc., of Greeley, Colorado, on October 31, 2003.

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		Occurrence Type: Accident				
Landing Facility/Approach Information						
Airport Name YELLOWSTONE REGIONAL		Airport ID: COD	Airport Elevation 5098 Ft. MSL	Runway Used NA	Runway Length	Runway Width
Runway Surface Type: Asphalt; Water						
Runway Surface Condition: Ice; Slush covered; Snow--wet						
Approach/Arrival Flown: Circling; VOR/DME						
VFR Approach/Landing: Traffic Pattern						
Aircraft Information						
Aircraft Manufacturer Cessna		Model/Series 208B		Serial Number 208B0289		
Airworthiness Certificate(s): Normal						
Landing Gear Type: Tricycle						
Amateur Built Acft? No		Number of Seats: 2		Certified Max Gross Wt. 8750 LBS	Number of Engines: 1	
Engine Type: Turbo Prop		Engine Manufacturer: Pratt & Whitney Canada		Model/Series: PT6A-114A	Rated Power: 675 HP	
- Aircraft Inspection Information						
Type of Last Inspection AAIP		Date of Last Inspection 10/2003	Time Since Last Inspection 63.6 Hours		Airframe Total Time 6885 Hours	
- Emergency Locator Transmitter (ELT) Information						
ELT Installed?/Type Yes /		ELT Operated? Yes		ELT Aided in Locating Accident Site? No		
Owner/Operator Information						
Registered Aircraft Owner Federal Express Corporation		Street Address 3131 Democrat Road				
		City Memphis		State TN	Zip Code 38118	
Operator of Aircraft Corporate Air		Street Address P.O. Box 81050				
		City Billings		State MT	Zip Code 59108	
Operator Does Business As: Federal Express				Operator Designator Code: HSYA		
- Type of U.S. Certificate(s) Held:						
Air Carrier Operating Certificate(s): Cargo						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: Part 135: Air Taxi & Commuter						
Type of Flight Operation Conducted: Non-scheduled; Domestic; Cargo						
FACTUAL REPORT - AVIATION						

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First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 37
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Sex: M	Seat Occupied: Left	Occupational Pilot? <input type="checkbox"/> Civilian Pilot <input type="checkbox"/>	Certificate Number: On File
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Certificate(s): Airline Transport; Flight Instructor; Commercial

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Current Biennial Flight Review? 04/2003

Medical Cert.: Class 2	Medical Cert. Status: Valid Medical--w/ waivers/lim.	Date of Last Medical Exam: 03/2003
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	11094	5821	9871	1219	4000	1200				
Pilot In Command(PIC)	10815	5821	9596							
Instructor										
Instruction Received										
Last 90 Days	75	75	75							
Last 30 Days	19	19	19							
Last 24 Hours	1	1	1			1				

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? Yes	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: IFR

Departure Point Casper	State WY	Airport Identifier CPR	Departure Time 0730	Time Zone MST
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Destination Cody	State WY	Airport Identifier COD	
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Type of Clearance: IFR

Type of Airspace: Class E

Weather Information

Source of Wx Information:


Company; Flight Service Station

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Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
COD	0835	MST	5098 Ft. MSL	2 NM	40 Deg. Mag.
Sky/Lowest Cloud Condition: Thin Broken			200 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken		200 Ft. AGL		Visibility: 1.25 SM	Altimeter: 29.41 "Hg
Temperature: 1 °C	Dew Point: -2 °C	Weather Conditions at Accident Site: Instrument Conditions			
Wind Direction:		Wind Speed: Calm		Wind Gusts:	
Visibility (RVR): Ft.		Visibility (RVV) SM			
Precip and/or Obscuration:					

Accident Information		
Aircraft Damage: Substantial	Aircraft Fire: None	Aircraft Explosion: None

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers					
- TOTAL ABOARD -	1				1
Other Ground					
- GRAND TOTAL -	1				1

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Administrative Information

Investigator-In-Charge (IIC)
Arnold W. Scott

Additional Persons Participating in This Accident/Incident Investigation:

Robert D Hardwick
FAA Flight Standards Field Office
Casper, WY

Tom Moody
Cessna Aircraft Company
Wichita, KS

William H Bartlett
Corporate Air
Billings, MT

Dennis L Evans
Federal Express
Memphis, TN

Robert L Drake
FAA Headquarters
Washington, DC