



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	BILLINGS, MT	<b>Accident Number:</b>	SEA93GA041
<b>Date &amp; Time:</b>	12/18/1992, 1645 MST	<b>Registration:</b>	N6887Y
<b>Aircraft:</b>	CESSNA 550	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	8 Fatal
<b>Flight Conducted Under:</b>	Public Aircraft		

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## Analysis

DURING DESCENT INTO BILLINGS, THE CITATION WAS SEQUENCED BEHIND A BOEING 757, AND BOTH AIRPLANES WERE EVENTUALLY CLEARED FOR VISUAL APPROACHES. ABOUT 1-1/2 MI FROM THE RUNWAY THE CITATION WAS OBSERVED TO ROLL RAPIDLY TO THE INVERTED POSITION & DESCEND ALMOST VERTICALLY INTO THE GROUND. ACCORDING TO ATC TRANSCRIPTS AND THE AIRPLANES'S COCKPIT VOICE RECORDER, THE CREW OF THE CITATION HAD MAINTAINED VISUAL AWARENESS OF THE POSITION OF THE B-757 THROUGHOUT THE APPROACH. AT THE TIME OF THE UPSET, THE VERTICAL SEPARATION BETWEEN AIRPLANES WAS 600-1000 FT, AND THE HORIZONTAL SEPARATION WAS DECREASING BELOW 2.6 MI. ONE OF THE CITATION CAPTAIN'S LAST COMMENTS WAS 'ALMOST RAN OVER A SEVEN FIFTY SEVEN.' WINDS WERE 5 KTS.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT-IN-COMMAND'S FAILURE TO FOLLOW ESTABLISHED VORTEX AVOIDANCE PROCEDURES, AS PUBLISHED IN THE AIRMAN'S INFORMATION MANUAL, TO PROVIDE HIS OWN WAKE TURBULENCE SEPARATION.

## Findings

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Occurrence #1: VORTEX TURBULENCE ENCOUNTERED  
Phase of Operation: APPROACH

### Findings

1. (C) PROCEDURES/DIRECTIVES - NOT FOLLOWED - PILOT IN COMMAND
2. (C) WAKE TURBULENCE - ENCOUNTERED

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Occurrence #2: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: APPROACH

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

## Factual Information

### Pilot Information

<b>Certificate:</b>	Airline Transport; Commercial	<b>Age:</b>	39, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last Medical Exam:</b>	02/20/1992
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	6200 hours (Total, all aircraft), 4415 hours (Total, this make and model)		

### Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	CESSNA	<b>Registration:</b>	N6887Y
<b>Model/Series:</b>	550 550	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	550-0293
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	10
<b>Date/Type of Last Inspection:</b>	11/06/1992, Continuous Airworthiness	<b>Certified Max Gross Wt.:</b>	13500 lbs
<b>Time Since Last Inspection:</b>	45 Hours	<b>Engines:</b>	2 Turbo Fan
<b>Airframe Total Time:</b>	5275 Hours	<b>Engine Manufacturer:</b>	P&W
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	JT15D-4
<b>Registered Owner:</b>	DEPARTMENT OF ENERGY (WAPA)	<b>Rated Power:</b>	2500 lbs
<b>Operator:</b>	DEPARTMENT OF ENERGY (WAPA)	<b>Air Carrier Operating Certificate:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Dusk
Observation Facility, Elevation:	BIL, 3649 ft msl	Observation Time:	1653 MST
Distance from Accident Site:	1 Nautical Miles	Direction from Accident Site:	273°
Lowest Cloud Condition:	Scattered / 10000 ft agl	Temperature/Dew Point:	-17° C / -15° C
Lowest Ceiling:	None / 0 ft agl	Visibility	40 Miles
Wind Speed/Gusts, Direction:	5 knots, 350°	Visibility (RVR):	0 ft
Altimeter Setting:	29 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	WATERTOWN, SD (ATY)	Type of Flight Plan Filed:	IFR
Destination:		Type of Clearance:	IFR
Departure Time:	1601 CST	Type of Airspace:	Class D

## Airport Information

Airport:	BILLINGS LOGAN INTL. (BIL)	Runway Surface Type:	Asphalt
Airport Elevation:	3649 ft	Runway Surface Condition:	Dry
Runway Used:	27R	IFR Approach:	Visual
Runway Length/Width:	10528 ft / 150 ft	VFR Approach/Landing:	None

## Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	6 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	On-Ground
Total Injuries:	8 Fatal	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	ORRIN K ANDERSON	Adopted Date:	12/09/1993
Additional Participating Persons:	LEILTH R ASLAKSON; BILLINGS, MT ANDREW HALL; WICHITA, KS STEVEN K ROEHL; WICHITA, KS PAUL F CROSBY; BURBANK, CA		
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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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