



National Transportation Safety Board Aviation Accident Final Report

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

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

Occurrence #1: VORTEX TURBULENCE ENCOUNTERED

Phase of Operation: APPROACH

Findings

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

Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: APPROACH

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

Pilot Information

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

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N6887Y
Model/Series:	550 550	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	550-0293
Landing Gear Type:	Retractable - Tricycle	Seats:	10
Date/Type of Last Inspection:	11/06/1992, Continuous Airworthiness	Certified Max Gross Wt.:	13500 lbs
Time Since Last Inspection:	45 Hours	Engines:	2 Turbo Fan
Airframe Total Time:	5275 Hours	Engine Manufacturer:	P&W
ELT:	Installed	Engine Model/Series:	JT15D-4
Registered Owner:	DEPARTMENT OF ENERGY (WAPA)	Rated Power:	2500 lbs
Operator:	DEPARTMENT OF ENERGY (WAPA)	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Dusk
Observation Facility, Elevation:	BIL, 3649 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1653 MST	Direction from Accident Site:	273°
Lowest Cloud Condition:	Scattered / 10000 ft agl	Visibility	40 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	350°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	-17°C / -15°C
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	Report 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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.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](#).