



National Transportation Safety Board Aviation Accident Final Report

Location:	BELVEDERE CTR, VT	Accident Number:	NYC91FA239
Date & Time:	09/18/1991, 2150 EDT	Registration:	CFICA
Aircraft:	CONVAIR CV-580	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 129: Foreign		

Analysis

THE AIRPLANE WAS CRUISING IN NIGHT INSTRUMENT METEOROLOGICAL CONDITIONS WHEN IT ENTERED A LEFT TURN AND EXCEEDED THE DESIGN AIRFRAME LIMITS. THE AIRPLANE BROKE UP IN THE DESCENT DUE TO AERODYNAMIC FORCES AND WAS DESTROYED.. THE OUTBOARD WING PANELS HAD FAILED DOWNWARD AND CENTER WING SECTION SEPARATED FROM THE FUSELAGE. THE HORIZONTAL STABILIZER AND ELEVATORS HAD FAILED DOWN AND AFT. THE CAPTAIN WAS FOUND OUT OF THE COCKPIT WITH NO EVIDENCE OF HIM BEING IN THE SEAT AT IMPACT A HUMAN FACTORS STUDY FOUND THE AIRCRAFT'S LAST MINUTE OF FLIGHT MATCHED A PROFILE OF A PILOT EXPERIENCING SPATIAL DISORIENTATION.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF THE FIRST OFFICER (CO-PILOT) TO MAINTAIN CONTROL OF THE AIRCRAFT AFTER BECOMING SPATIALLY DISORIENTED, AND HIS EXCEEDING THE DESIGN STRESS LIMITS OF THE AIRCRAFT. FACTORS RELATED TO THE ACCIDENT WERE: THE LACK OF TWO PILOTS IN THE COCKPIT, DARKNESS, AND INSTRUMENT METEOROLOGICAL CONDITIONS (IMC) AT FLIGHT ALTITUDE.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: CRUISE - NORMAL

Findings

1. (F) LIGHT CONDITION - DARK NIGHT
 2. (F) WEATHER CONDITION - CLOUDS
 3. (C) AIRCRAFT CONTROL - NOT MAINTAINED - COPILOT/SECOND PILOT
 4. (C) SPATIAL DISORIENTATION - COPILOT/SECOND PILOT
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Occurrence #2: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. (C) DESIGN STRESS LIMITS OF AIRCRAFT - EXCEEDED - COPILOT/SECOND PILOT
 6. HORIZONTAL STABILIZER ATTACHMENT - OVERLOAD
 7. STABILIZER - SEPARATION
 8. WING - OVERLOAD
 9. WING - SEPARATION
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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

Pilot Information

Certificate:	Airline Transport	Age:	30, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Unknown
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:	12/10/1990
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	10400 hours (Total, all aircraft), 1200 hours (Total, this make and model), 8000 hours (Pilot In Command, all aircraft), 193 hours (Last 90 days, all aircraft), 80 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CONVAIR	Registration:	CFICA
Model/Series:	CV-580 CV-580	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	98
Landing Gear Type:	Retractable - Tricycle	Seats:	3
Date/Type of Last Inspection:	09/11/1991, AAIP	Certified Max Gross Wt.:	58156 lbs
Time Since Last Inspection:	25 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	39323 Hours	Engine Manufacturer:	ALLISON
ELT:	Installed, not activated	Engine Model/Series:	501-D13D
Registered Owner:	CANAIR CARGO LTD	Rated Power:	3750 hp
Operator:	CANAIR CARGO LTD	Operating Certificate(s) Held:	Air Cargo
Operator Does Business As:		Operator Designator Code:	TEKF

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	BTV, 334 ft msl	Distance from Accident Site:	25 Nautical Miles
Observation Time:	2150 EDT	Direction from Accident Site:	245°
Lowest Cloud Condition:	Scattered / 5500 ft agl	Visibility	10 Miles
Lowest Ceiling:	Overcast / 12000 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	11 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	150°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	20° C / 17° C
Precipitation and Obscuration:			
Departure Point:	MONCTON,N.B., CD (YQM)	Type of Flight Plan Filed:	IFR
Destination:	HAMILTON,ONT, CD (YHM)	Type of Clearance:	IFR
Departure Time:	2038 EDT	Type of Airspace:	Class E

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	Robert L Hancock	Report Date:	03/31/1993
Additional Participating Persons:	LYLE STREETER; WASHINGTON, DC DAN GOLIGER; MISSISSAUGA, ON, CD MARK GRESIOWSKI; MISSISSAUGA, ON, CD DEAN M COX; INDIANAPOLIS, IN		
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/ .		

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