



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	PARKERSBURG, WV	<b>Accident Number:</b>	NYC91LA020
<b>Date &amp; Time:</b>	10/28/1990, 1345 EST	<b>Registration:</b>	N52DC
<b>Aircraft:</b>	DASSAULT-BREGUET FALCON 50	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None

**Flight Conducted Under:** Part 91: General Aviation - Executive/Corporate

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## Analysis

N52DC WAS CLIMBING THRU FL280 WHEN THE FLT CREW FELT A 'VIOLENT SHUDDER' IN THE AIRFRAME AND OBSERVED INDICATIONS OF A LEFT ENGINE FAILURE. VISUAL EXAMINATION OF THE LEFT ENG REVEALED THE FAN SECTION HAD SEPARATED (UNCONTAINED FAILURE/TEARAWAY). THE AIRPLANE WAS LANDED WITHOUT FURTHER INCIDENT. A POST-ACCIDENT EXAM OF THE PARTS REVEALED THE FAN DISC FAILED CATASTROPHICALLY DUE TO LOW CYCLE FATIGUE.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: CATASTROPHIC FAILURE OF THE LEFT ENGINE FAN DISC DUE TO LOW CYCLE FATIGUE.

## Findings

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Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF  
Phase of Operation: CLIMB - TO CRUISE

### Findings

1. 1 ENGINE
2. (C) COMPRESSOR ASSEMBLY, ROTOR DISC - FATIGUE
3. COMPRESSOR ASSEMBLY, FORWARD FAN - SEPARATION

## Factual Information

### Pilot Information

<b>Certificate:</b>	Airline Transport	<b>Age:</b>	42, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>		<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last Medical Exam:</b>	
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>			

### Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	DASSAULT-BREGUET	<b>Registration:</b>	N52DC
<b>Model/Series:</b>	FALCON 50 FALCON 50	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>		<b>Serial Number:</b>	126
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	10
<b>Date/Type of Last Inspection:</b>	Unknown	<b>Certified Max Gross Wt.:</b>	38800 lbs
<b>Time Since Last Inspection:</b>	0 Hours	<b>Engines:</b>	3 Turbo Fan
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	GARRETT
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	TFE 731-3-1C
<b>Registered Owner:</b>		<b>Rated Power:</b>	3700 lbs
<b>Operator:</b>	DOW CHEMICAL COMPANY	<b>Air Carrier Operating Certificate:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Observation Time:	0000
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 0 ft agl	Temperature/Dew Point:	
Lowest Ceiling:	Unknown / 0 ft agl	Visibility	0 Miles
Wind Speed/Gusts, Direction:		Visibility (RVR):	0 ft
Altimeter Setting:		Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	LEWISBURG, WV (LWB)	Type of Flight Plan Filed:	IFR
Destination:	SAGINAW, MI (MBS)	Type of Clearance:	IFR
Departure Time:	0000	Type of Airspace:	Class E

## Wreckage and Impact Information

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

## Administrative Information

Investigator In Charge (IIC):	GREGORY A FEITH	Adopted Date:	12/15/1992
Additional Participating Persons:			
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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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.