



National Transportation Safety Board Aviation Accident Final Report

Location:	Lorain, OH	Accident Number:	IAD05LA129
Date & Time:	09/01/2005, 1950 EDT	Registration:	N821AA
Aircraft:	Dassault/Sud Falcon 20D	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The small, twin-engine business jet was about 15 feet above the runway on takeoff, when a flock of birds from both sides of the runway flew up in front of the airplane. The number two engine "surged," and "loud reports" were heard before the copilot noted a complete loss of power on the number two engine instruments. The airplane climbed for about 10 seconds, before the copilot observed the gas producer (N1) gauge on the number one engine decay through 50 percent. The stall warning horn sounded, and the pilot adjusted the flight controls for landing. The airplane contacted the runway with the landing gear retracted, overran the runway, struck a fence, crossed a road, and came to rest in a cornfield about 1,000 feet beyond the initial point of ground contact. Post accident examination of both engines revealed evidence and damage consistent with multiple bird ingestion.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The ingestion of multiple birds in each engine at takeoff, which resulted in a complete loss of engine power.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: TAKEOFF

Findings

1. (C) OBJECT - BIRD(S)

Occurrence #2: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: TAKEOFF

Findings

2. 2 ENGINES - FOREIGN OBJECT DAMAGE

Occurrence #3: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Factual Information

On September 1, 2005, at 1950 eastern daylight time, a Dassault/Sud Falcon 20D, N821AA, operated by USA Jet Airlines, Inc., was substantially damaged when it impacted terrain during a forced landing after takeoff from Lorain County Regional Airport (LPR), Lorain, Ohio. The pilot, a certificated airline transport pilot, was not injured, and the copilot, also a certificated airline transport pilot, received minor injuries. Visual meteorological conditions prevailed for the cargo flight, destined for Lambert-St. Louis International Airport (STL), St. Louis, Missouri. An instrument flight rules flight plan was filed for the flight conducted under 14 CFR Part 135.

According to statements provided by the pilot, copilot, and the director of safety for USA Jet, the flight from Willow Run Airport (YIP), Detroit, Michigan, to Lorain County Regional Airport, was described as "uneventful," and no deficiencies with the airplane were reported. The airplane was then loaded with 380 pounds of cargo, and departed with a fuel load of 6,700 pounds.

After engine start, an instrument clearance was received from air traffic control, and the airplane was taxied to runway 25.

The pilot was flying the airplane at takeoff, as the copilot monitored the flight instruments, and made "V" speed and rotation callouts. When the airplane was about 15 feet above the runway, birds flew up from both sides of the runway, and into both engines. The number two engine "surged," and made several "loud reports" before the copilot noted a complete loss of power on the number two engine instruments. The copilot announced the loss of power, and the pilot called for retraction of the landing gear.

The airplane climbed for about 10 seconds, before the copilot observed the gas producer (N1) gauge on the number one engine decay through 50 percent. The stall warning horn sounded, and the pilot adjusted the flight controls for landing.

The airplane contacted the runway "straight and level at approximately 130 knots," with the landing gear retracted, about 3,000 feet beyond the point of rotation. The airplane overran the runway, struck a fence, crossed a road, and came to rest in a cornfield about 1,000 feet beyond the initial point of ground contact.

On September 2, 2005, the airplane was examined at the scene by Federal Aviation Administration (FAA) aviation safety inspectors. Initial inspection revealed that the left wing, and the number one engine inlet displayed several dents and blood smears. The core and the fan sections of the number one engine displayed extensive foreign object damage, and the remains of several birds were visible inside the engine and along the runway and wreckage path.

The inlet of the number two engine appeared undamaged, and the engine inlet contained a significant amount of vegetation.

On September 8, 2005, an FAA inspector and representatives of General Electric Engines and Dassault Falcon Jet performed a detailed examination of both engines. The damage to the number one engine "was consistent with multiple bird ingestion. Due to the severity of the blade damage, it is unlikely that this engine could produce useful thrust."

Examination of the number two engine revealed blood smears in the engine inlet, and evidence

of ingestion of "at least 4 birds." Bird remains were evident in the engine core, and soft body damage to fan blades was observed... [and] could have caused the engine to stall..."

The pilot held an airline transport pilot certificate with ratings for airplane single engine land and multi-engine land. His most recent first class medical certificate was issued March 23, 2005. The pilot reported 4,444 total hours of flight experience, 639 hours of which were in make and model. His most recent flight review was completed April 5, 2005 in a Falcon 20.

The copilot held an airline transport pilot certificate with ratings for airplane single engine land, multi-engine land, and rotorcraft-helicopter. His most recent first class medical certificate was issued May 23, 2005. The copilot reported 2,172 total hours of flight experience, 193 hours of which were in make and model. His most recent flight review was completed March 16, 2005 in a Falcon 20.

At 1953, the weather reported at Lorain County Regional Airport included clear skies with 10 miles visibility. The winds were from 280 degrees at 4 knots. The temperature was 72 degrees Fahrenheit, and the dew point was 62 degrees Fahrenheit.

Pilot Information

Certificate:	Airline Transport; Flight Instructor	Age:	34, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	
Medical Certification:	Class 1 Without Waivers/Limitations	Last Medical Exam:	03/01/2005
Occupational Pilot:		Last Flight Review or Equivalent:	04/01/2005
Flight Time:	4444 hours (Total, all aircraft), 639 hours (Total, this make and model), 3756 hours (Pilot In Command, all aircraft), 63 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft)		

Co-Pilot Information

Certificate:	Airline Transport	Age:	42, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 1 With Waivers/Limitations	Last Medical Exam:	05/01/2005
Occupational Pilot:		Last Flight Review or Equivalent:	03/01/2005
Flight Time:	2172 hours (Total, all aircraft), 193 hours (Total, this make and model), 827 hours (Pilot In Command, all aircraft), 123 hours (Last 90 days, all aircraft), 65 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Dassault/Sud	Registration:	N821AA
Model/Series:	Falcon 20D	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	203
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	08/01/2005, Continuous Airworthiness	Certified Max Gross Wt.:	28660 lbs
Time Since Last Inspection:	12 Hours	Engines:	2 Turbo Fan
Airframe Total Time:	16970 Hours	Engine Manufacturer:	General Electric
ELT:	Installed, not activated	Engine Model/Series:	CF700-2D
Registered Owner:	USA Jet Airlines Inc	Rated Power:	4400 lbs
Operator:	USA Jet Airlines Inc	Air Carrier Operating Certificate:	Supplemental; On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	Y2PA

Meteorological Information and Flight Plan

Observation Facility, Elevation:	LPR	Observation Time:	1953 EDT
Distance from Accident Site:		Condition of Light:	Dusk
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	22° C / 17° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	4 knots, 280°	Visibility (RVR):	
Altimeter Setting:	29.97 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lorain, OH (LPR)	Type of Flight Plan Filed:	IFR
Destination:	ST LOUIS, MO (STL)	Type of Clearance:	IFR
Departure Time:	1949 EDT	Type of Airspace:	

Airport Information

Airport:	Lorian County Airport (LPR)	Runway Surface Type:	Asphalt
Airport Elevation:	793 ft	Runway Surface Condition:	Dry
Runway Used:	25	IFR Approach:	None
Runway Length/Width:	5002 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor, 1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor, 1 None		

Administrative Information

Investigator In Charge (IIC):	Brian C Rayner	Adopted Date:	08/29/2006
Additional Participating Persons:	Robert Dale; FAA; Cleveland, OH Les McVey; GE Aircraft Engines; Cincinnati, OH Dan Lucas; Dassault Falcon Jet; Columbus, OH		
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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