National Transportation Safety Board
Aviation Accident Final Report

Location:	Lawrence, KS	**Accident Number:**	CHI02LA047
Date & Time:	12/09/2001, 1645 CST	**Registration:**	N202DN
Aircraft:	Dassault Aviation Falcon 100	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General Aviation - Executive/Corporate		

Analysis

The pilot said that the copilot was flying a visual approach to runway 15 at the Lawrence Municipal Airport, Lawrence, Kansas. The pilot said, "With gear down and full flaps at approximately 15 to 20 feet above the runway and 115 KTS, the nose abruptly dropped and there was no elevator effectiveness with the yoke pulled back to the mechanical stop." The pilot said, "After landing, I noticed that the stabilizer trim indicated full nose down in the cockpit and, upon exterior inspection, the stab was in that position." The copilot said, "I made my turn to base and proceeded to make my turn to final. No problems with the controllability were noted at this time. The turn to final was made and the airplane was lined up with the runway on final approach with normal glide path. My altitude was dropping normally and my airspeed was approx[imately] 140 knots." The copilot said, "When it got time to pull the power back to idle for landing our airspeed was approx[imately] 110 knots and power was reduced. At that point in time the nose of the aircraft seemed to pitch over towards the runway and increase speed. I pulled back on the yoke to raise the nose and at that same instance the pilot recognized the pitch over and pulled back on the yoke at the same time. The yoke did not seem to pull all of the way to its full extent of travel and felt to mechanically stop at about 3/4 the way travel. Even with both pilot's pulling on the yoke it seemed unresponsive and failed to raise the nose back to a proper landing attitude. The aircraft hit the runway very hard and came to a stop on the runway." A preliminary inspection of the airplane showed the stabilizer positioned at 4 degrees nose down. An examination of the airplane's systems revealed no anomalies.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The copilot's failure to maintain aircraft control during the landing. Factors relating to this accident were the copilot's improper in-flight decision not to execute a go-around, the copilot not performing a go-around, the inadequate crew coordination prior to landing between the pilot and copilot, and the improperly set stabilizer trim.

Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. (C) AIRCRAFT CONTROL - NOT MAINTAINED - COPILOT/SECOND PILOT
2. (F) GO-AROUND - NOT PERFORMED - COPILOT/SECOND PILOT
3. (F) IN-FLIGHT PLANNING/DECISION - IMPROPER - COPILOT/SECOND PILOT
4. (F) CREW/GROUP COORDINATION - INADEQUATE - FLIGHTCREW
5. (F) STABILATOR TRIM - IMPROPER

Factual Information

On December 9, 2001, at 1645 central standard time, a Dassault Falcon 100, N202DN, piloted by a commercial pilot, sustained substantial damage during a hard landing on runway 15 (5,002 feet by 100 feet, dry/asphalt) at the Lawrence Municipal Airport (LWC), Lawrence, Kansas. Visual meteorological conditions prevailed at the time of the accident. The business flight was operating on an instrument flight rules flight plan under the provisions of 14 CFR Part 91. The pilot and copilot reported no injuries. The cross country flight originated at Madison, Mississippi, at 1535, and was en route to Lawrence, Kansas.

In his written statement, the pilot said that the copilot was flying a visual approach to runway 15 with the pilot backing him up in the left seat. The pilot said, "With gear down and full flaps at approximately 15 to 20 feet above the runway and 115 KTS, the nose abruptly dropped and there was no elevator effectiveness with the yoke pulled back to the mechanical stop." The pilot said, "After landing, I noticed that the stabilizer trim indicated full nose down in the cockpit and, upon exterior inspection, the stab was in that position."

In his written statement, the copilot said, "I made my turn to base and proceeded to make my turn to final. No problems with the controllability were noted at this time. The turn to final was made and the airplane was lined up with the runway on final approach with normal glide path. My altitude was dropping normally and my airspeed was approx[imately] 140 knots." The copilot said, "When it got time to pull the power back to idle for landing our airspeed was approx[imately] 110 knots and power was reduced. At that point in time the nose of the aircraft seemed to pitch over towards the runway and increase speed. I pulled back on the yoke to raise the nose and at that same instance the pilot recognized the pitch over and pulled back on the yoke at the same time. The yoke did not seem to pull all of the way to its full extent of travel and felt to mechanically stop at about 3/4 the way travel. Even with both pilot's pulling on the yoke it seemed unresponsive and failed to raise the nose back to a proper landing attitude. The aircraft hit the runway very hard and came to a stop on the runway."

A Federal Aviation Administration inspector examined the airplane at the Lawrence Municipal Airport. The left main landing gear strut was broken upward and had penetrated the top wing skin. The leading edge of the left wing was broken loose. The inboard portions of both wings showed skin wrinkles. There were bends and buckles in the fuselage beginning at the wings trailing edges and running forward to the cabin door. The stabilizer was positioned at 4 degrees nose down. An inspection of the flight control system revealed no anomalies. An examination of the engine, engine controls, and other airplane systems revealed no anomalies. A conformity check of the autopilot and flight control system, conducted on January 9, 2002, revealed no anomalies.

Pilot Information

Certificate:	Commercial	**Age:**	54, Male
Airplane Rating(s):	Multi-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):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	08/21/2001
Occupational Pilot:		**Last Flight Review or Equivalent:**	08/02/2001
Flight Time:	10500 hours (Total, all aircraft), 1200 hours (Total, this make and model), 6000 hours (Pilot In Command, all aircraft), 80 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Co-Pilot Information

Certificate:	Flight Instructor; Commercial	**Age:**	38, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	11/28/2000
Occupational Pilot:		**Last Flight Review or Equivalent:**	12/13/2000
Flight Time:	1229 hours (Total, all aircraft), 22 hours (Total, this make and model), 1053 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Dassault Aviation	**Registration:**	N202DN
Model/Series:	Falcon 100	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	202
Landing Gear Type:	Retractable - Tricycle	**Seats:**	9
Date/Type of Last Inspection:	08/29/2001, Continuous Airworthiness	**Certified Max Gross Wt.:**	18740 lbs
Time Since Last Inspection:	70.4 Hours	**Engines:**	2 Turbo Jet
Airframe Total Time:	5421.4 Hours at time of accident	**Engine Manufacturer:**	Garrett
ELT:	Installed, not activated	**Engine Model/Series:**	TFE-731-2C-1C
Registered Owner:	Air Del, Incorporated	**Rated Power:**	3230 lbs
Operator:	David Nutt and Associates	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	LWC, 832 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	1454 CST	**Direction from Accident Site:**	150°
Lowest Cloud Condition:	Clear	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	200°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.14 inches Hg	**Temperature/Dew Point:**	12°C / -6°C
Precipitation and Obscuration:			
Departure Point:	Madison, MS (MBO)	**Type of Flight Plan Filed:**	IFR
Destination:	Lawrence, KS (LWC)	**Type of Clearance:**	IFR
Departure Time:	1535 CST	**Type of Airspace:**	Class D

Airport Information

Airport:	Lawrence Municipal Airport (LWC)	**Runway Surface Type:**	Asphalt
Airport Elevation:	832 ft	**Runway Surface Condition:**	Dry
Runway Used:	15	**IFR Approach:**	None
Runway Length/Width:	5002 ft / 100 ft	**VFR Approach/Landing:**	Full Stop; Traffic Pattern

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):	David C Bowling	**Report Date:**	07/15/2002
Additional Participating Persons:	Henry Rochon; Federal Aviation Administration; Wichita, KS		
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.ntsb.gov/pubdms/.		