



# National Transportation Safety Board Aviation Incident Final Report

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<b>Location:</b>	Teterboro, NJ	<b>Incident Number:</b>	NYC061A075
<b>Date &amp; Time:</b>	03/03/2006, 1415 EST	<b>Registration:</b>	N973M
<b>Aircraft:</b>	Dassault Aviation Falcon 900EX	<b>Aircraft Damage:</b>	Minor
<b>Defining Event:</b>		<b>Injuries:</b>	3 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Business		

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## Analysis

The Falcon 900EX, was being flown by the co-pilot from the left seat, and was landing on runway 24, a 6,013-foot-long, 150-foot-wide, asphalt runway. Witnesses reported the airplane touched down about halfway down the runway, the airplane then traveled off the end, and came to rest in mud, about 330 feet from the end of the runway. Tire marks consistent with the airplane's tires were observed to begin about 1,000 feet prior to the end of the runway. The airplane sustained damage to the landing gear assemblies, and the right outboard slat. Post-incident examination of the braking system did not reveal any evidence of a preimpact malfunction. It was noted that the landing gear tachometer generators were found to be out-of-tolerance during portions of a test procedure. The specific reason for the out-of-tolerance condition was not determined; however, it may be attributed to damage sustained during the overrun, or post incident disassembly. According to the airplane manufacturer, the out-of-tolerance conditions found with respect to the tachometer generators would have resulted in no significant adverse consequence (less than 1-percent) on the overall performance of the braking system. The airplane's flight data recorder showed that the flight crew did not utilize the airplane's air brake after touchdown, which would have reduced lift, and improved braking effectiveness during the high speed phase of the landing run. The airplane's total ground roll travel after touchdown was approximately 3,522 feet. A weather observation taken after the incident reported the winds from 330 degrees, at 19 knots, gusting to 26 knots. Post-incident friction tests conducted on the runway, revealed friction levels, which would not have required the issuance of a notice to airmen; however, some small patches of snow/ice were observed on the runway surface.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: The co-pilot's failure to obtain the proper touchdown point, which resulted in an overrun. Contributing were the gusty wind conditions, the failure of the flight crew to utilize the air brake after touchdown, and a partially contaminated runway.

## Findings

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Occurrence #1: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER  
Phase of Operation: LANDING - ROLL

### Findings

1. (F) WEATHER CONDITION - GUSTS
2. (C) PROPER TOUCHDOWN POINT - NOT ATTAINED - COPILOT/SECOND PILOT
3. (F) AIRPORT FACILITIES,RUNWAY/LANDING AREA CONDITION - ICY
4. (F) FLIGHT CONTROL,SPEED BRAKE - NOT DEPLOYED

## Factual Information

On March 3, 2006, about 1415 eastern standard time, a Dassault Aviation Falcon 900EX, N973M, sustained minor damage during a landing overrun at Teterboro Airport (TEB), Teterboro, New Jersey. The certificated airline transport rated flight crew and one passenger were not injured. Visual meteorological conditions prevailed and an instrument flight rules flight plan had been filed for the flight that departed Palwaukee Municipal Airport (PWK), Wheeling, Illinois. The business flight was conducted under 14 Code of Federal Regulations Part 91.

According to the flight crew, the airplane departed and proceeded to TEB uneventfully. The airplane was initially cleared for the instrument landing system approach to runway 6, with a circle-to-land on runway 1. After a wind check reported winds from 290 degrees at 10 knots, the flight crew requested and received clearance to land on runway 24, a 6,013-foot-long, 150-foot-wide, asphalt runway. Due to the wind conditions, the flight crew added 10 knots to the airplane's landing approach speed of 120 knots. Shortly prior to touchdown, the control tower reported the winds from 290 degrees at 15 knots, gusting to 20 knots. Both pilots reported that the airplane touched down on the runway centerline, "close to" or "within" the touchdown landing zone. The thrust reverser was deployed and the flight crew initially felt the sensation of braking; however, as the airplane continued down the runway, the braking action seemed less effective.

The airplane departed the end of the runway, and came to rest in mud, about 330 feet from the end of the runway. Tire marks consistent with the airplane's tires were observed to begin about 1,000 feet prior to the end of the runway. The airplane sustained damage to the landing gear assemblies, and the right outboard slat.

On scene examination of the airplane did not reveal any pre-incident mechanical malfunctions, nor did the pilots report any.

The landing gear legs, telescopic strut, brake assemblies, brake servo valves, and the braking system control box were removed and examined, with no pre-incident discrepancies noted. The tachometer generators were also examined; however, they were found to be out of tolerance during portions of the test procedure. The specific reason for the out-of-tolerance condition was not determined. According to the airplane manufacturer, the out-of-tolerance conditions found with respect to the tachometer generators would have resulted in no significant adverse consequence (less than 1-percent) on the overall performance of the braking system.

Post-incident friction tests conducted on runway 24, by airport personnel, revealed friction levels, which would not have required the issuance of a notice to airmen; however, some small patches of snow/ice were observed on the runway surface.

The pilot seated in the right seat, was the designated pilot-in-command for the flight. The company reported that he had accumulated about 11,000 hours of total flight experience, which included about 1,500 hours in the Falcon 900EX.

The pilot flying, was seated in the left seat. The company reported he had accumulated about 6,500 hours of total flight experience, which included about 1,200 combined hours in the Falcon 900EX.

Several witnesses at the airport reported that they observed the airplane touch down about

halfway down runway 24. One witness reported observing smoke from the main landing gear tires as the airplane traveled off the end of the runway surface.

The airplane was equipped with a cockpit voice recorder (CVR) and flight data recorder (FDR), which were retained and forwarded to the National Transportation Safety Board Vehicle Recorders Laboratory, Washington, District of Columbia. The airplane's engines were also equipped with digital electronic engine controllers (DEECs), which were downloaded under the supervision of a Safety Board investigator.

The data downloaded from the FDR and DEECs did not reveal any evidence of engine or airframe malfunctions. According to the FDR, the airplane's airspeed just prior to touchdown was about 130 knots, and the ground speed just after touchdown was about 120 knots. A rollout distance computation conducted by a Safety Board Vehicle Recorder Specialists showed that the airplane's total ground roll travel after touchdown was approximately 3,522 feet.

In addition, the FDR showed the airbrakes were not utilized during the landing. According to the airplane operating manual, the airbrakes are to be extended after touchdown, and "airbrake extension reduces lift, and improves braking effectiveness during the high speed phase of the landing run."

A weather observation taken after the incident recorded: winds from 330 degrees, at 19 knots, gusting to 26 knots, visibility 10 statute miles, clear skies, temperature 0 degrees Celsius (C), dew point -12 degrees C, altimeter 29.84 inches of mercury.

## 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>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without Waivers/Limitations	<b>Last FAA Medical Exam:</b>	04/01/2005
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	02/01/2006
<b>Flight Time:</b>	11500 hours (Total, all aircraft), 1500 hours (Total, this make and model), 9000 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Co-Pilot Information

<b>Certificate:</b>	Airline Transport	<b>Age:</b>	32, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 With Waivers/Limitations	<b>Last FAA Medical Exam:</b>	04/01/2005
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	10/01/2005
<b>Flight Time:</b>	6500 hours (Total, all aircraft), 1200 hours (Total, this make and model), 4500 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 35 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Dassault Aviation	<b>Registration:</b>	N973M
<b>Model/Series:</b>	Falcon 900EX	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	73
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	11
<b>Date/Type of Last Inspection:</b>	02/01/2006, Continuous Airworthiness	<b>Certified Max Gross Wt.:</b>	49000 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	3 Turbo Fan
<b>Airframe Total Time:</b>	4541 Hours at time of accident	<b>Engine Manufacturer:</b>	Garrett-AiResearch
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	TFE-731-60
<b>Registered Owner:</b>	Motorola, Inc.	<b>Rated Power:</b>	5000 lbs
<b>Operator:</b>	Motorola, Inc.	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	TEB, 9 ft msl	Distance from Accident Site:	
Observation Time:	1418 EST	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	19 knots / 26 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	330°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.84 inches Hg	Temperature/Dew Point:	0°C / -12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Wheeling, IL (PWK)	Type of Flight Plan Filed:	IFR
Destination:	Teterboro, NJ (TEB)	Type of Clearance:	IFR
Departure Time:	1300 EST	Type of Airspace:	

## Airport Information

Airport:	Teterboro (TEB)	Runway Surface Type:	Asphalt
Airport Elevation:	9 ft	Runway Surface Condition:	Ice; Snow
Runway Used:	24	IFR Approach:	Circling; Visual
Runway Length/Width:	6013 ft / 150 ft	VFR Approach/Landing:	None

## Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Minor
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	40.846389, -74.071389

## Administrative Information

Investigator In Charge (IIC):	Luke Schiada	Report Date:	03/31/2008
Additional Participating Persons:	Robert Bromirski; FAA/FSDO; Teterboro, NJ Bernard H Curtis; Dassault Falcon Jet; White Plains, NY Philippe Mauviot; BEA, France		
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> .		

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](#).