



# Aviation Investigation Final Report

<b>Location:</b>	Marlborough, Massachusetts	<b>Accident Number:</b>	GAA18CA288
<b>Date &amp; Time:</b>	May 20, 2018, 13:15 Local	<b>Registration:</b>	N143RD
<b>Aircraft:</b>	DIAMOND AIRCRAFT IND INC DA 40	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control on ground	<b>Injuries:</b>	4 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot reported that, during landing, the airplane touched down in the first third of the 1,659-ft-long runway, but the airplane did not seem to slow as normal with the brakes applied. He pumped the brakes, but the deceleration was "less than expected." He considered performing a go around but decided to use maximum braking instead. With maximum braking applied, the airplane veered off the runway to the right and impacted a fence.

The airplane sustained substantial damage to the left wing.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

He further reported that, following the accident, he inspected the runway and found solid skid marks from the right tire and broken skid marks from the left tire.

The pilot reported that, about the time of the accident, the wind was light and variable and predominately from 280°. The automated weather observation station located about 12 miles east of the accident airport reported that, about 19 minutes before the accident, the wind was from 220° at 12 knots. The airplane landed on runway 32.

The calculated landing roll with full flaps was 930 ft, and the landing distance over a 50-ft obstacle was 2,020 ft.

The manufacturer stated that "For a safe landing the landing distance available (LDA) should be at least equal to the landing distance of a 50 ft (15m) obstacle."

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's improper decision to land on a runway that was too short for a safe landing and his subsequent failure to maintain directional control in tailwind conditions.

### Findings

<b>Aircraft</b>	Directional control - Not attained/maintained
<b>Personnel issues</b>	Aircraft control - Pilot
<b>Personnel issues</b>	Decision making/judgment - Pilot
<b>Environmental issues</b>	Tailwind - Effect on operation
<b>Aircraft</b>	Surface speed/braking - Not attained/maintained
<b>Environmental issues</b>	Fence/fence post - Contributed to outcome

## Factual Information

### History of Flight

<b>Landing-landing roll</b>	Loss of control on ground (Defining event)
<b>Landing-landing roll</b>	Runway excursion
<b>Landing-landing roll</b>	Collision with terr/obj (non-CFIT)

### Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight engineer; Flight instructor	<b>Age:</b>	51, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Waiver time limited special	<b>Last FAA Medical Exam:</b>	March 16, 2018
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	September 9, 2017
<b>Flight Time:</b>	(Estimated) 15129 hours (Total, all aircraft), 165 hours (Total, this make and model), 2979 hours (Pilot In Command, all aircraft), 48 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 1.2 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	DIAMOND AIRCRAFT IND INC	<b>Registration:</b>	N143RD
<b>Model/Series:</b>	DA 40 UNDESIGNAT	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2006	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	40.657
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	December 18, 2017 Annual	<b>Certified Max Gross Wt.:</b>	2646 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2176.1 Hrs at time of accident	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	IO-360-M1A
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	180 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KBED,133 ft msl	<b>Distance from Accident Site:</b>	12 Nautical Miles
<b>Observation Time:</b>	16:56 Local	<b>Direction from Accident Site:</b>	53°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 3400 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	12 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	220°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	29.82 inches Hg	<b>Temperature/Dew Point:</b>	25°C / 18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	SUSSEX, NJ (FWN )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Marlborough, MA (9B1 )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	12:15 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	MARLBORO 9B1	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	285 ft msl	<b>Runway Surface Condition:</b>	Dry;Rough
<b>Runway Used:</b>	32	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	1659 ft / 45 ft	<b>VFR Approach/Landing:</b>	Full stop

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	3 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	4 None	<b>Latitude, Longitude:</b>	42.344444,-71.511665(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Benhoff, Kathryn
<b>Additional Participating Persons:</b>	Michael Masterson; FAA; Burlington, MA
<b>Original Publish Date:</b>	October 24, 2018
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	This accident report documents the factual circumstances of this accident as described to the NTSB.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=97288">https://data.nts.gov/Docket?ProjectID=97288</a>

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