Aviation Investigation Final Report

Location:	Kabul,	**Accident Number:**	DCA13CA008
Date & Time:	October 17, 2012, 06:49 UTC	**Registration:**	N800AW
Aircraft:	BOMBARDIER INC DHC-8-315	**Aircraft Damage:**	Substantial
Defining Event:	Hard landing	**Injuries:**	7 None
Flight Conducted Under:	Public aircraft		

Analysis

On October 17, 2012, about 1119 local time, 0649 Coordinated Universal Time (UTC), a Bombardier DHC-8-315, registration N800AW, operated by the United States Department of State, experienced a hard landing on runway 29 at Kabul International Airport (OAKB) Kabul, Afghanistan. There were no injuries to the three passengers or three crewmembers onboard and the aircraft was substantially damaged. Visual meteorological conditions prevailed at the time. The flight had originated from Tarin Kowt Airport (OATN), Tarin Kowt, Afghanistan

According to the flight crew, the takeoff, climb and cruise were uneventful. The captain was the flying pilot. At 11:12 the flight was cleared for the approach and at 11:16 the flight crew selected flaps 35 and initiated a random steep approach in accordance with company task procedures as a result of the airport threat level. According to the flight crew statements, the airplane engine power was reduced to idle for the approach and was not increased prior to landing. Information obtained from Flight Data Recorder (FDR) indicated engine torque was at or near zero for the last 5 minutes of approach and landing.

The aviation routine weather report at 0550 local time indicated wind from 120 degrees at 5 knots, 8000 meters visibility and temperature 17 degrees C. For the two minutes prior to landing, the wind was light and variable. A tactical meteorological observation system on the field reported the wind direction during the two minutes prior to landing as variable from 004 degrees to 137 degrees and the wind speed variable from 1 knot to 7.2 knots. Wind gust recorded during the time period varied from 050 degrees to 079 degrees at 7.0 to 7.2 knots.

Based on FDR data the calculated rate of descent was about 2,000 feet per minute during approach, reducing to about 1,500 feet per minute just prior to landing. The airplane touched down with a nose up pitch attitude of approximately 8 degrees and a peak vertical acceleration of 2.7g. The airplane geometry information provided by the manufacturer indicated that aft fuselage contact will result from a pitch attitude over 11.9 degrees with an extended landing gear oleo strut, and a pitch attitude over 6.8 degrees with a compressed landing gear oleo strut.

In order to avoid nuisance warnings resulting from the random steep approach (i.e. steep angle descent), the flight crew deactivated the ground proximity warning system (GPWS) for approach. As these alerts would be expected by the crew during this type of approach, it is unlikely the alerts would have prompted the crew to take corrective action.

The airplane touched down and contacted the aft fuselage on the runway resulting in substantial damage (including buckled, cracked, and bent frames and stringers).

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the captains ineffective management of the airplanes energy state during final approach and flare that resulted in a hard landing and tail strike at touchdown.

Findings

Aircraft	Landing flare - Not attained/maintained
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Approach-VFR pattern final	Miscellaneous/other
Landing-flare/touchdown	Hard landing (Defining event)
Landing-flare/touchdown	Tailstrike

Pilot Information

Certificate:	Airline transport; Commercial	**Age:**	45
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	January 9, 2012
Occupational Pilot:		**Last Flight Review or Equivalent:**	June 16, 2012
Flight Time:	10545 hours (Total, all aircraft), 855 hours (Total, this make and model), 10103 hours (Pilot In Command, all aircraft), 95 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Co-pilot Information

Certificate:	Airline transport	**Age:**	47
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	January 18, 2012
Occupational Pilot:		**Last Flight Review or Equivalent:**	May 22, 2012
Flight Time:	15730 hours (Total, all aircraft), 8333 hours (Total, this make and model), 142 hours (Last 90 days, all aircraft), 92 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BOMBARDIER INC	**Registration:**	N800AW
Model/Series:	DHC-8-315	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	573
Landing Gear Type:	Retractable - Tricycle	**Seats:**	48
Date/Type of Last Inspection:	September 22, 2012 Continuous airworthiness	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	2 Turbo prop
Airframe Total Time:	18533 Hrs at time of accident	**Engine Manufacturer:**	Pratt and Whitney
ELT:	Installed, not activated	**Engine Model/Series:**	PW123E
Registered Owner:	US DEPARTMENT OF STATE	**Rated Power:**	2380 Horsepower
Operator:	US DEPARTMENT OF STATE	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	OAKB	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	11:16 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	2 knots / 4 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	160°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.27 inches Hg	**Temperature/Dew Point:**	19°C / 2°C
Precipitation and Obscuration:			
Departure Point:	Tarin (OATN)	**Type of Flight Plan Filed:**	VFR
Destination:	(OAKB)	**Type of Clearance:**	VFR flight following
Departure Time:		**Type of Airspace:**	

Airport Information

Airport:	Kabul International Airport OAKB	**Runway Surface Type:**	Asphalt
Airport Elevation:	5872 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	29	**IFR Approach:**	None
Runway Length/Width:	11483 ft / 148 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	4 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	3 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	7 None	**Latitude, Longitude:**	34.566665,69.201385(est)

Administrative Information

Investigator In Charge (IIC):	Helson, David
Additional Participating Persons:	
Original Publish Date:	April 3, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=85429