



Aviation Investigation Final Report

Location:	San Isidro, Texas	Accident Number:	CEN15TA035
Date & Time:	October 23, 2014, 14:00 Local	Registration:	N72595
Aircraft:	Bell UH1H	Aircraft Damage:	Substantial
Defining Event:	Part(s) separation from AC	Injuries:	3 None
Flight Conducted Under:	Public aircraft		

Analysis

Before the accident flight, the flight crew completed a routine law enforcement patrol flight without incident. That flight was conducted with the pilot, copilot, and main cabin quarter doors removed and the sliding main cabin doors in the "full open" position. After refueling the helicopter, the flight crew conducted a preflight inspection, during which, the copilot and a tactical team member (TTM) noted that the door latch pin was missing from the left sliding door latch. The TTM stated that the copilot advised him that the pin was not required to be installed. The copilot stated that he informed the pilot about the missing pin but that he was not sure that the pilot adequately understood him. About 15 minutes after departing, during cruise flight, the flight crew heard "a loud bang," and the pilot felt a momentary upset in the helicopter's flightpath. Although the helicopter operated normally after the event, the pilot chose to perform a precautionary landing to an open field. During the postflight inspection, the flight crew determined that the left sliding cabin door had separated from the helicopter. A postaccident examination did not reveal any anomalies consistent with a failure of the door assembly or airframe structure that would have led to the separation. The helicopter's Pilot's Operating Handbook stated that the helicopter could be flown up to 120 knots with an open door if it is in the "full open" position and secured by the door latch. The lack of the door latch pin allowed the door to slide forward during flight and then aerodynamic forces separated the door from the sliding track.

Probable Cause and Findings

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

The flight crew's failure to ensure that the sliding cabin door was properly secured before the flight.

Findings

Personnel issues

Preflight inspection - Flight crew

Aircraft

Passenger/crew doors - Incorrect use/operation

Factual Information

History of Flight

Enroute	Part(s) separation from AC (Defining event)
Emergency descent	Off-field or emergency landing

On October 23, 2014, about 1400 central daylight time, a Bell model UH-1H helicopter, N72595, was substantially damaged when the left cabin sliding door separated during cruise flight and impacted one of the main rotor blades near San Isidro, Texas. The three crew members were not injured. The helicopter was registered to the U.S. Department of Homeland Security and operated by U.S. Customs and Border Protection under the provisions of 14 Code of Federal Regulations Part 91 as a public use flight. Visual meteorological conditions prevailed for the flight, which was not operated on a flight plan. The flight originated from the Brooks County Airport (BKS), Falfurrias, Texas, about 1345. The intended destination was the McAllen Miller International Airport (MFE), McAllen, Texas, after conducting a routine law enforcement patrol flight.

The crew originally departed MFE about 1100 and completed a routine law enforcement patrol about 2 hours 15 minutes in duration without incident. The flight was operated with the pilot and co-pilot doors, and the main cabin quarter doors removed. The sliding main cabin doors were secured in the fully open position. The crew subsequently landed at BKS in order to refuel and eat lunch.

After refueling, the crew conducted a preflight inspection. During that inspection, the co-pilot and tactical team member (TTM), who were inspecting the left side of the helicopter, noted that the open door latch pin was missing from the left sliding door latch. The TTM reportedly discussed the missing pin with the co-pilot. The TTM stated that the co-pilot advised him that the pin was not required to be installed. The co-pilot stated that he had informed the pilot about the missing pin, but he was not sure that the pilot adequately understood him.

The crew reported that about 15 minutes after departing BKS, during cruise flight, they heard a loud bang and the pilot felt a momentary upset in the helicopter's flight path. The helicopter performed normally after the event; however, the pilot elected to perform a precautionary landing to an open field. During the post-flight inspection, the crew determined that the left sliding cabin door had departed the aircraft. It was subsequently located separated into two pieces about 1 mile northeast of the landing site. One main rotor blade sustained substantial damage consistent with an in-flight impact with the door assembly.

A postaccident examination did not reveal any anomalies consistent with a failure of the door assembly or airframe structure that would have led to the separation. The retaining angle remained attached to the door and appeared undeformed. The door latch pin had separated from the lanyard and was located lying on the aft cabin floor. The exact reason that the pin had separated from the lanyard before the accident flight could not be determined.

The helicopter operating handbook permitted flight up to 120 knots with the door properly secured in the open position. In order to properly secure the door, it must be in the full open position with the door latch pin installed. In the event that the door inadvertently opened in-flight, the airspeed should be reduced below 50 knots in order to allow the door to be closed. If the door could not be closed, then it must be fully opened and secured by the open door latch.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	44
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	4-point
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine; Helicopter; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	December 2, 2013
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	August 27, 2014
Flight Time:	9950 hours (Total, all aircraft), 406 hours (Total, this make and model), 9882 hours (Pilot In Command, all aircraft), 12 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Co-pilot Information

Certificate:	Commercial	Age:	51
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	4-point
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:	April 16, 2014
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	September 12, 2014
Flight Time:	10500 hours (Total, all aircraft), 1851 hours (Total, this make and model), 10000 hours (Pilot In Command, all aircraft), 38 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N72595
Model/Series:	UH1H	Aircraft Category:	Helicopter
Year of Manufacture:	1973	Amateur Built:	
Airworthiness Certificate:	None	Serial Number:	73-21769
Landing Gear Type:	N/A; Skid	Seats:	3
Date/Type of Last Inspection:	June 27, 2014 Condition	Certified Max Gross Wt.:	10500 lbs
Time Since Last Inspection:	120 Hrs	Engines:	1 Turbo shaft
Airframe Total Time:	5736 Hrs at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	T53-L13-703
Registered Owner:	U. S. Department of Homeland Security	Rated Power:	1438 Horsepower
Operator:	U. S. Customs and Border Protection	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	EBG,80 ft msl	Distance from Accident Site:	28 Nautical Miles
Observation Time:	14:35 Local	Direction from Accident Site:	100°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	360°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.05 inches Hg	Temperature/Dew Point:	29°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Falfurrias, TX (BKS)	Type of Flight Plan Filed:	None
Destination:	McAllen, TX (MFE)	Type of Clearance:	None
Departure Time:	13:45 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	3 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	26.550003,-98.71997(est)

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	Carlos Gallardo; FAA Flight Standards; San Antonio, TX Russell Gellerson; U. S. Customs and Border Protection; Washington, DC
Original Publish Date:	February 23, 2015
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=90334

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