Aviation Investigation Final Report

Location:	Hilo, Hawaii	**Accident Number:**	WPR18TA239
Date & Time:	August 19, 2018, 13:20 Local	**Registration:**	N11QP
Aircraft:	Eurocopter EC130	**Aircraft Damage:**	Substantial
Defining Event:	Part(s) separation from AC	**Injuries:**	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Other work use		

Analysis

The pilot reported that, before departing, he conducted a walk-around inspection of the helicopter, during which he visually checked to ensure all the doors and cowlings were closed and secured. The pilot departed on the flight with the maintenance apprentice, who was seated in the right front seat. While the flight was en route back to the airport, the left-rear sliding door suddenly slid open, separated from the helicopter, and struck two of the three main rotor blades. The pilot performed a precautionary landing to a field. The helicopter sustained substantial damage to two main rotor blades. The helicopter's left sliding door tracks and door latch assemblies were normal and unremarkable. The plastic latch on the fuselage which supports the sliding rear door when opened was damaged, and a portion had separated from the fuselage. The sliding door fell into the ocean and was not recovered, thereby preventing examination of the door and its locking components.

After the accident, Airbus Helicopters published an alert service bulletin requiring a mandatory spring-scale check on all sliding door-equipped EC-130 B4 helicopters to ensure correct operation of the sliding door locking system.

Probable Cause and Findings

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

The separation of the left sliding door in flight after it opened for reasons that could not be determined based on the available evidence, which resulted in damage to the main rotor blades.

Findings

Aircraft	Passenger/crew doors - Not specified
Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Enroute-descent	Part(s) separation from AC (Defining event)

On August 19, 2018, about 1320 Hawaiian standard time, a Eurocopter EC-130 B4 helicopter, N11QP, sustained substantial damage when it was involved in an accident near Hilo, Hawaii. The pilot was not injured, and the passenger sustained minor injuries. The helicopter was operated as a Title 14 *Code of Federal Regulations* Part 91 maintenance flight.

The pilot stated that the purpose of the flight, which originated from Hilo International Airport (ITO), Hilo, Hawaii, was for the track and balance of the main rotor blades. He conducted a previous flight in the helicopter that day but returned to ITO early due to issues with the track and balance equipment. Before the accident flight, the pilot conducted a walk-around inspection of the helicopter, during which he visually checked to ensure all the doors, cowlings, and equipment were closed and secured. The pilot and the passenger, a maintenance apprentice who was seated in the right front seat, departed ITO about 1310. The pilot stated that, after completion of the maintenance checks and while en route back to ITO, he lowered the collective to decelerate and began a slow descent. He then heard the left-rear sliding door suddenly slide open. The pilot looked back and saw the door off the helicopter in midair. He stated that he turned his head forward, then heard a loud noise and felt a jolt. The helicopter began to vibrate but remained controllable. The pilot initiated a precautionary landing onto a grass field. He indicated that the door appeared to have struck two main rotor blades and that he thought the door fell into the ocean.

The maintenance apprentice stated that on the accident flight, while returning to the airport and after leveling off from a descent, the door suddenly opened and separated from the helicopter. He stated that on the takeoff for the previous flight, a maintenance technician had ensured the doors were closed correctly, but on the takeoff for the accident flight, the maintenance technician did not.

The accident helicopter has a sliding rear door on the left side; when opened, it is supported by a plastic latch located on the fuselage of the helicopter at the end of the sliding door track.

The helicopter sustained substantial damage to the main rotor blades; two of the three main rotor blades exhibited dents and scratches across their undersides, generally initiating at or near the leading edge and propagating aft along the chord of the blade. Examination of the operator's photographs and reports from the director of maintenance revealed that the helicopter’s left sliding door tracks and door latch assemblies were normal and unremarkable. The plastic latch on the fuselage was damaged, and a portion had separated from the fuselage. The sliding door was not recovered, thereby preventing examination of the door and its locking components. A review of the helicopter's maintenance records revealed no previous door-related issues.

On December 10, 2018, Airbus Helicopters published Alert Service Bulletin (ASB) ASB EC130-05A031 for operators of EC-130 B4 helicopters with sliding doors, making it mandatory to check for correct operation of the sliding door locking system by measuring the load required to unlock the sliding

door. The ASB indicated the check should be conducted with a spring scale and described an in-flight opening and loss of a sliding door as the reason for the bulletin.

Pilot Information

Certificate:	Airline transport	**Age:**	56,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	4-point
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	June 1, 2018
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	May 30, 2018
Flight Time:	(Estimated) 10014 hours (Total, all aircraft), 2122 hours (Total, this make and model), 9868 hours (Pilot In Command, all aircraft), 73 hours (Last 90 days, all aircraft), 28 hours (Last 30 days, all aircraft)		

Passenger Information

Certificate:	None	**Age:**	Male
Airplane Rating(s):	None	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Eurocopter	**Registration:**	N11QP
Model/Series:	EC130 B4	**Aircraft Category:**	Helicopter
Year of Manufacture:	2009	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	4715
Landing Gear Type:	Skid	**Seats:**	7
Date/Type of Last Inspection:	August 15, 2018 AAIP	**Certified Max Gross Wt.:**	5350 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo shaft
Airframe Total Time:	13211.2 Hrs as of last inspection	**Engine Manufacturer:**	Safran
ELT:	C126 installed, not activated	**Engine Model/Series:**	Arriel
Registered Owner:	On file	**Rated Power:**	771 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	Rotorcraft external load (133), On-demand air taxi (135), Commercial air tour (136), Agricultural aircraft (137)
Operator Does Business As:	On file	**Operator Designator Code:**	HCML

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PHTO,36 ft msl	**Distance from Accident Site:**	6 Nautical Miles
Observation Time:	13:20 Local	**Direction from Accident Site:**	319°
Lowest Cloud Condition:		**Visibility**	8 miles
Lowest Ceiling:	Broken / 2500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	110°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.96 inches Hg	**Temperature/Dew Point:**	28°C / 23°C
Precipitation and Obscuration:			
Departure Point:	Hilo, HI (ITO)	**Type of Flight Plan Filed:**	Company VFR
Destination:	Hilo, HI (ITO)	**Type of Clearance:**	VFR
Departure Time:	13:10 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Hilo Intl ITO	**Runway Surface Type:**	Grass/turf
Airport Elevation:	37 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Precautionary landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor, 1 None	**Latitude, Longitude:**	19.643611,-154.984451(est)

Administrative Information

Investigator In Charge (IIC):	Salazar, Fabian
Additional Participating Persons:	Edward Valdez; Honolulu Flight Standards District Office; Honolulu, HI
Original Publish Date:	June 24, 2021
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98143