Aviation Investigation Final Report

Location:	Kona, Hawaii	**Accident Number:**	ANC23LA023
Date & Time:	February 14, 2023, 08:00 Local	**Registration:**	N5KR
Aircraft:	Cessna P337H	**Aircraft Damage:**	Substantial
Defining Event:	Unknown or undetermined	**Injuries:**	1 Minor, 4 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled - Sightseeing		

Analysis

The pilot reported that during the preflight inspection and engine run-up, he noted no anomalies with the airplane. Then, on departure, the airplane lost partial power. The pilot performed an emergency landing to the runway overrun area with the landing gear retracted, and the airplane sustained substantial damage to the fuselage.

Postaccident examination of the engines revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation. During the examination the rear engine started normally, accelerated smoothly, and ran continuously without interruption.

Review of recorded engine monitoring data revealed that the rear engine lost total engine power during the engine run-up. Although the reason for the rear engine's total loss of power during the engine run-up could not be determined, the pilot should have recognized that the rear engine was not operating during the takeoff roll and aborted the takeoff. Placards on the instrument panel and the owner's manual stated, "Do not initiate single engine take-off," The continuation of the takeoff in this condition resulted in the airplane's inability to climb and its subsequent descent and impact with terrain.

Probable Cause and Findings

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

The failure of the pilot to recognize that the rear engine was not operating during takeoff, which resulted in an attempted single-engine takeoff and the airplane's subsequent descent and impact with terrain. Contributing to the accident was a loss of rear engine power for reasons that could not be determined.

Findings

Aircraft	(general) - Unknown/Not determined
Personnel issues	Use of available resources - Pilot
Aircraft	Powerplant parameters - Capability exceeded
Personnel issues	Identification/recognition - Pilot
Personnel issues	Use of policy/procedure - Pilot
Personnel issues	Incorrect action sequence - Pilot

Factual Information

History of Flight

Takeoff	Unknown or undetermined (Defining event)

On February 14, 2023, about 0800 Hawaii-Aleutian standard time, a Cessna C337H airplane, N5KR, sustained substantial damage when it was involved in an accident in Kona, Hawaii. The pilot had minor injuries and four passengers were not injured. The airplane was operated by the pilot as a Title 14 *Code of Federal Regulations* Part 135 sightseeing flight.

The pilot completed the preflight inspection and engine run-up with no anomalies noted. The airplane departed from runway 35 at the Kona International Airport (KOA), Kona, Hawaii. During takeoff, after an indicated positive rate of climb, the pilot retracted the landing gear. As the landing gear retracted, the airplane had significantly less performance. The pilot performed an emergency landing to the runway overrun area with the landing gear retracted. The airplane sustained substantial damage to the fuselage.

The operator's weight and balance for the flight showed a takeoff weight of 4,681.5 lbs. with an allowable maximum gross weight of 4,700 lbs.

An engine examination was performed by Federal Aviation Administration inspectors after the accident. The rear engine started normally, accelerated smoothly, and ran continuously without interruption.

The front engine spark plugs were removed from the engine and no anomalies were observed with their electrodes. The crankshaft was rotated by hand and valvetrain continuity was confirmed to the rear accessory section. Thumb compression was attained on all cylinders. Magnetos were checked and timing was correct and both magnetos were operational.

The examination of both engines revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation.

Review of recorded engine monitoring data revealed that, about 4 minutes after both engines were started, the rear engine's cylinder head temperatures (CHT) and exhaust gas temperatures (EGT) began to decrease, the engine oil pressure dropped from 69 psi to 1 psi, the fuel flow rate dropped to 0 gph, fuel pressure decreased from 6.9 psi to 1.3 psi, and the horsepower dropped from 32% to 0%. About 7 minutes after both engines were started, the front engine rpm increased and the airplane began to takeoff.

Placards on the instrument panel stated, "Do not initiate single engine take-off" and, "Lead with rear engine power check RPM and fuel flow." The owner's manual indicated that, during

takeoff, it was recommended to advance the rear engine throttle ahead of the front engine throttle and to periodically monitor fuel flow and rpm throughout the takeoff. If either of these indicators was below normal, the takeoff should be discontinued immediately while sufficient runway remained. The owner's manual also indicated that full throttle checks on the ground were not recommended.

The owner's manual stated that the airplane drag with the landing gear doors opened and the gear partially extended is greater than the drag with the landing gear fully extended. Corresponding rate-of-climb penalties are 240 fpm and 110 fpm, respectively. Therefore, since there is a drag increase with the initiation of gear retraction, it should not be attempted unless adequate airspeed and altitude margins exist for sustained flight. This is especially important under the conditions of weight, altitude, and temperature that result in little or no single-engine climb.

Pilot Information

Certificate:	Airline transport; Commercial	**Age:**	62,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	September 21, 2022
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	July 25, 2022
Flight Time:	4116 hours (Total, all aircraft), 122 hours (Total, this make and model), 3841 hours (Pilot In Command, all aircraft), 104 hours (Last 90 days, all aircraft), 36 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Passenger Information

Certificate:		**Age:**	
Airplane Rating(s):		**Seat Occupied:**	Right
Other Aircraft Rating(s):		**Restraint Used:**	3-point
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:			

Passenger Information

Certificate:	**Age:**	
Airplane Rating(s):	**Seat Occupied:**	Left
Other Aircraft Rating(s):	**Restraint Used:**	Lap only
Instrument Rating(s):	**Second Pilot Present:**	No
Instructor Rating(s):	**Toxicology Performed:**	
Medical Certification:	**Last FAA Medical Exam:**	
Occupational Pilot:	**Last Flight Review or Equivalent:**	
Flight Time:		

Passenger Information

Certificate:	**Age:**	
Airplane Rating(s):	**Seat Occupied:**	Right
Other Aircraft Rating(s):	**Restraint Used:**	Lap only
Instrument Rating(s):	**Second Pilot Present:**	No
Instructor Rating(s):	**Toxicology Performed:**	
Medical Certification:	**Last FAA Medical Exam:**	
Occupational Pilot:	**Last Flight Review or Equivalent:**	
Flight Time:		

Passenger Information

Certificate:	**Age:**	
Airplane Rating(s):	**Seat Occupied:**	Left
Other Aircraft Rating(s):	**Restraint Used:**	Lap only
Instrument Rating(s):	**Second Pilot Present:**	No
Instructor Rating(s):	**Toxicology Performed:**	
Medical Certification:	**Last FAA Medical Exam:**	
Occupational Pilot:	**Last Flight Review or Equivalent:**	
Flight Time:		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N5KR
Model/Series:	P337H	**Aircraft Category:**	Airplane
Year of Manufacture:	1979	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	P3370335
Landing Gear Type:	Tricycle	**Seats:**	5
Date/Type of Last Inspection:	November 28, 2022 100 hour	**Certified Max Gross Wt.:**	4700 lbs
Time Since Last Inspection:	28.2 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	2118 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	C126 installed, not activated	**Engine Model/Series:**	TSIO-360-CB3B
Registered Owner:	HANA LIKE II LLC	**Rated Power:**	225 Horsepower
Operator:	Big Island Air, INC	**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:	Big Island Air	**Operator Designator Code:**	BIAA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PHKO,37 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	08:44 Local	**Direction from Accident Site:**	190°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	360°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.96 inches Hg	**Temperature/Dew Point:**	26°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Kona , HI	**Type of Flight Plan Filed:**	Company VFR
Destination:	Kona , HI	**Type of Clearance:**	VFR
Departure Time:		**Type of Airspace:**	Class D

Airport Information

Airport:	Ellison Onizuka Kona International at Keahole KOA	**Runway Surface Type:**	Asphalt
Airport Elevation:	47 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	35	**IFR Approach:**	None
Runway Length/Width:	11000 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	4 None	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Minor, 4 None	**Latitude, Longitude:**	19.756336,-156.04473(est)

Administrative Information

Investigator In Charge (IIC):	Ward, Mark
Additional Participating Persons:	Joewie Maldonado; FAA; HI
Original Publish Date:	August 1, 2024
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=106742