Aviation Investigation Final Report

Location:	Punta Islita,	**Accident Number:**	CEN18FA063
Date & Time:	December 31, 2017, 11:56 Local	**Registration:**	TI-BEI
Aircraft:	Cessna 208	**Aircraft Damage:**	Destroyed
Defining Event:	Aerodynamic stall/spin	**Injuries:**	12 Fatal
Flight Conducted Under:	Non-U.S., commercial		

Analysis

The two pilots were conducting a commercial charter flight to take 10 passengers to an international airport for connecting flights. The flight departed a nontower-controlled airport that was in a valley surrounded on all sides by rising terrain, with the exception of the area beyond the departure end of runway 21, which led directly toward the Pacific Ocean. The accident airplane was the second of a flight of two; the first airplane departed runway 3 about 15 minutes before the accident airplane and made an immediate right turn to the east/southeast after takeoff, following a pass in the hills over lower terrain that provided time for the airplane to climb over the mountains. Both a witness and surveillance video footage from the airport indicated that, 15 minutes later, the accident airplane also departed from runway 3 but instead continued on runway heading, then entered a left turn and descended into terrain. Analysis of the video determined that the airplane reached a maximum bank angle of about 75° and an airspeed below the airplane's published aerodynamic stall speed before impact.

Examination of the airplane was limited due to impact and postcrash fire damage; however, no defects consistent with a preimpact failure or malfunction were observed, and the engine exhibited signatures consistent with production of power during impact.

The captain was appropriately rated and had extensive experience in the accident airplane make and model. He had been employed by the accident operator for about a year in 2006 and had recently been re-hired by the operator; however, records provided by the operator did not indicate that he had completed all of the training and check flights required by the operator's General Operations Manual (GOM). The first officer was appropriately rated but had little experience in the accident airplane. The GOM also stated that pilots would receive additional, airport-specific training before operating to or from airports with special characteristics; however, the operator provided no listing of such airports, including the airport from which the accident flight departed. The pilots' experience at the departure airport could not be determined.

It is possible the psychiatric diagnoses in 2011 were correct and the pilot suffered from a number of conditions which can cause a variety of symptoms. However, given the extremely limited information, what his symptoms were around the time of the accident, whether they were being addressed or effectively treated, and what his mental state was at the time could not be determined from the available information. Therefore, whether or not the pilot's medical or psychological conditions or their treatment played a role in the accident circumstances could not be determined by this investigation.

There were no weather reporting facilities in the vicinity of the airport. Although the airport was equipped with two frames for windsocks, no windsocks were installed at the time of the accident to aid pilots in determining wind direction and intensity. Although a takeoff from runway 21 afforded the most favorable terrain since the airplane would fly over lower terrain to the ocean, it is possible that a significant enough tailwind existed for runway 21 that the pilots believed the airplane's maximum tailwind takeoff limitation may be exceeded and chose to depart from runway 3 in the absence of any information regarding the wind velocity. Performance calculations showed that the airplane would have been able to take off with up to a 10-kt tailwind, which was the manufacturer limitation for tailwind takeoffs.

The witness who saw the accident reported that he spoke with the pilots of both airplanes before the flights departed and that the pilots acknowledged the need to use the eastern pass in order to clear terrain when departing from runway 3. The reason that the flight crew of the accident airplane failed to use this path after takeoff could not be determined. It is likely that, after entering the valley ahead of the runway, with rising terrain and peaks that likely exceeded the climb capability of the airplane, they attempted to execute a left turn to exit the valley toward lower terrain. During the steep turn, the pilots failed to maintain adequate airspeed and exceeded the airplane's critical angle of attack, which resulted in an aerodynamic stall and impact with terrain.

Performance calculations using weights that would allow the airplane to operate within manufacturer weight and balance limitations at the time of the accident indicated that it was unlikely that the airplane would have had sufficient climb performance to clear the terrain north of the airport. However, the airplane would likely have had sufficient climb performance to clear terrain east of the airport had the crew performed a right turn immediately after takeoff like the previous airplane.

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 maintain airspeed while maneuvering to exit an area of rising terrain, which resulted in an exceedance of the airplane's critical angle of attack and an aerodynamic stall. Contributing to the accident was the flight crew's decision to continue the takeoff toward rising terrain that likely exceeded the airplane's climb capability, the lack of adequate weather reporting available for wind determination, and the lack of documented training for an airport requiring a non-standard departure.

Findings

Aircraft	Airspeed - Not attained/maintained
Aircraft	Angle of attack - Not attained/maintained
Personnel issues	Aircraft control - Flight crew
Personnel issues	Decision making/judgment - Flight crew
Aircraft	Climb capability - Capability exceeded
Organizational issues	(general) - Operator
Organizational issues	Availability of equipment - Meteorological service

Factual Information

History of Flight

Maneuvering	Loss of control in flight
Maneuvering	Aerodynamic stall/spin (Defining event)

On December 31, 2017, about 1156 central standard time, a Cessna 208B airplane, Costa Rican registration TI-BEI, crashed while maneuvering after takeoff from runway 3 at Islita Airport (MRIA), near Corozalito, Costa Rica. The 2 flight crewmembers and 10 passengers were fatally injured. The airplane was destroyed by impact forces and post-impact explosion and fire. The airplane was registered to and operated by Nature Air, San José, Costa Rica, as a commercial charter flight operating under Costa Rican flight regulations. Visual meteorological conditions prevailed for the flight, which was originating at the time of the accident with an intended destination of Juan Santamaría International Airport (MROC), San Jose, Costa Rica.

The accident airplane was the second of a flight of two Cessna 208B airplanes transporting hotel guests from MRIA to MROC, where most of the passengers had connecting international airline flights. The first airplane departed MRIA using runway 3 and, after liftoff, made a right turn to the east through a pass in the hills and continued to MROC. The accident airplane took off about 15 minutes after the first airplane. According to the hotel employee who transported the passengers to the airport and was at the airport during the departures, the accident airplane did not make the same right turn as the previous airplane but instead continued on the runway heading. A ground-based video surveillance system installed at the airport captured a portion of the accident airplane's takeoff and the accident sequence. The airplane appeared within frame for about 25 seconds before the impact and could be seen climbing north on an approximate runway heading then starting a left turn. During the turn, the airplane's bank angle steepened, and the airplane descended into terrain.

The airplane's flightpath followed a valley with rising terrain on either side; the valley turned left and continued rising until reaching a mountain. When heading in a northerly direction from the airport, there was no exit from the valley. The airplane impacted terrain on the northwest side of the valley about 0.4 statute miles (sm) from the departure end of runway 3.

Pilot Information

Certificate:	Commercial	**Age:**	52,Male
Airplane Rating(s):	Single-engine land; 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	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	November 8, 2017
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	14508 hours (Total, all aircraft), 11587 hours (Total, this make and model)		

Co-pilot Information

Certificate:	Commercial	**Age:**	26,Female
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 1 Without waivers/limitations	**Last FAA Medical Exam:**	June 27, 2017
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	453 hours (Total, all aircraft)		

Captain

The 52-year-old captain held a Costa Rican commercial pilot airplane certificate with single-engine land, multiengine land, instrument, and flight instructor ratings. He also held an airline transport pilot certificate with an airplane multiengine land rating issued by the US Federal Aviation Administration (FAA). He was issued US and Costa Rican first-class airman medical certificates on November 8, 2017, with no limitations.

The pilot's resume indicated that he held captain and first officer positions for various operators from 1998 through 2017. From July 1998 to October 2005, he was employed as a pilot flying Cessna 208B airplanes for another operator (SANSA). He was then employed by Nature Air in 2006 in both captain and first officer positions in DHC-6-300 (Twin Otter) airplanes. From January 2007 to July 2017 he returned to SANSA. The captain's resume also listed employment as an instructor pilot for Cessna 208B simulators from April 2007 to July 2017, and as the training manager at SANSA from October 2011 to July 2013. His resume and logbook excerpts indicated that he had 14,508 hours total flight experience, including 11,587 hours in Cessna 208B airplanes. Training documents showed that the pilot began ground training in October 2017 at Nature Air, although no documents provided specifically listed his

rehire date.

The Nature Air General Operations Manual (GOM) listed, in addition to specified ground training, that a captain or pilot-in-command have a minimum of 500 hours total flight experience, an instrument rating, and receive airplane-specific ground training, receive 8 hours of simulator and/or airplane flight instruction, pass a captain qualification, and successfully complete initial operating environment training (IOE). Limited documentation of the pilot's training was provided during the investigation. The training documents confirmed that the captain had received ground training starting in October 2017, but there were no records showing completion of required flight training or of any check flights or IOE.

First Officer

The 26-year-old first officer held a Costa Rican commercial pilot airplane certificate with single-engine land, multiengine land, and instrument ratings. She was issued a Costa Rican first-class airman medical certificate on June 27, 2017, with no limitations.

Flight logbooks were not available for the first officer; however, her resume indicated that she had accumulated 453 hours total flight experience, including 370 hours in single-engine airplanes and 83 hours in multiengine airplanes. Although her resume was not dated, it listed her position as first officer on Cessna 208B airplanes for Nature Air beginning in November 2017. Training documents indicated that she received ground training at Nature Air in October 2017.

The GOM indicated that first officers must hold a commercial pilot certificate with an instrument rating and have completed ground training in basic indoctrination, aircraft systems, human factors/crew resource management (CRM), and emergency and safety equipment. Training documents received during the investigation indicated that the first officer had received the specified training.

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	TI-BEI
Model/Series:	208 B	**Aircraft Category:**	Airplane
Year of Manufacture:	2001	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	208B0900
Landing Gear Type:	Tricycle	**Seats:**	14
Date/Type of Last Inspection:	December 30, 2017 Continuous airworthiness	**Certified Max Gross Wt.:**	8750 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo prop
Airframe Total Time:	12073 Hrs as of last inspection	**Engine Manufacturer:**	Pratt & Whitney
ELT:		**Engine Model/Series:**	PT6A-114A
Registered Owner:	Nature Air	**Rated Power:**	675 Horsepower
Operator:	Nature Air	**Operating Certificate(s) Held:**	None

Figure 1 - Photograph of the accident airplane

The accident airplane was a Cessna 208B Caravan, serial number 208B0900 (Figure 1). It was a high-wing, single-turboprop-powered airplane with a fixed, tricycle landing gear configuration. The accident airplane was configured to seat 12 passengers in addition to the 2 flight crewmember seats. The airplane was powered by a 675-horsepower Pratt & Whitney Canada PT6A-114A turboprop engine, serial number PC1545, which drove a constant speed, full-feathering, reversible pitch propeller.

The airplane was originally issued an FAA experimental category airworthiness certificate on June 26, 2001 for research and development and regulatory compliance purposes. A normal category FAA airworthiness certificate was issued on September 20, 2001. An export application, dated November 11, 2011, indicated that the accident airplane was exported from the United States to Costa Rica; Nature Air was the listed purchaser. FAA records further showed that a normal category FAA airworthiness certificate was issued on June 14, 2016, indicating that the accident airplane was returned to the United States. Another export application, dated November 2, 2017, indicated that the accident airplane was again exported from the United States to Costa Rica with Nature Air as the listed purchaser.

Nature Air flight and maintenance records indicated that the airframe had accumulated 12,072.9 hours total time in service and 20,813 cycles as of the most recent entry, dated December 30, 2017.

The airplane's engine was manufactured on June 23, 2008. According to maintenance records, the engine was initially installed on another Cessna 208B before installation into the accident airplane on October 24, 2017, at an airframe time of 11,906.80 hours and 20,508 airframe cycles. At the time of installation, the engine had accumulated 3,105.4 hours total time in service and 4,332 cycles. Maintenance records indicated that the engine underwent a hot section inspection at the time of its installation into the accident airplane. Based on the aircraft records, the engine had accumulated 3,271.5 hours total time in service and 4,637 cycles since new at the time of the accident.

The airplane was maintained in accordance with an Approved Aircraft Inspection Program (AAIP).

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	128 ft msl	**Distance from Accident Site:**	25 Nautical Miles
Observation Time:	12:00 Local	**Direction from Accident Site:**	90°
Lowest Cloud Condition:		**Visibility**	
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots / 12 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	90°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	32°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Punta Islita (MRIA)	**Type of Flight Plan Filed:**	
Destination:	San Jose (MROC)	**Type of Clearance:**	None
Departure Time:	18:00 UTC	**Type of Airspace:**	

The nearest Instituto Meteorógico Nacional (IMN) weather reporting station was located about 25 miles east of the accident site at an elevation of 128 ft mean sea level (msl). At 1200, the recorded weather parameters included temperature 32°C, relative humidity 55%, and east wind at 4 knots gusting to 12 knots.

Wind models at 10 meters above ground level indicated that, for the time of the accident, the wind was about 5 knots from the northeast.

A review of a surveillance video from MRIA that captured the accident sequence did not yield enough information to determine surface wind direction. The witness at the airport at the time of the accident estimated that the wind magnitude at MRIA during the time of the accident was likely between 10 and 15 knots.

MRIA was equipped with two structures, one at each end of the airstrip's runway pavement, to accommodate windsocks; at the time of the accident, neither structure was equipped with a windsock.

Airport Information

Airport:	Islita Airport MRIA	**Runway Surface Type:**	Asphalt
Airport Elevation:	65 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	3	**IFR Approach:**	None
Runway Length/Width:	3000 ft / 30 ft	**VFR Approach/Landing:**	None

Islita Airport was a privately owned, nontower-controlled airport located near the town of Corozalito, Costa Rica.

The airport had a single paved runway, runway 3/21, that was about 3,000 ft long and 30 ft wide (Figure

2). The runway pavement was cracked and had vegetation growing through the cracks at the south end. There was a hut located at the northeast end of the runway adjacent to a taxiway turnaround. Other than the turnaround at the north end, there were no other taxiways, requiring airplanes to use the runway for taxi operations. The runway was in a valley with rising terrain on all sides except to the south, which led to the Pacific Ocean. The witness who saw the accident reported that he spoke with the pilots of both airplanes before the flights departed and that the pilots acknowledged the need to use the eastern pass in order to clear terrain when departing from runway 3.

The Nature Air GOM stated that pilots would receive additional, airport-specific training before operating to or from airports with special characteristics; however, the operator provided no listing of such airports.

Figure 2 - View from runway looking north toward the mountains

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	10 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-ground
Total Injuries:	12 Fatal	**Latitude, Longitude:**	9.865278,-85.366111

The airplane wreckage was removed from the accident site before NTSB arrival. The accident site was located on a heavily wooded hillside about 0.4 sm northeast (024°) of the departure end of runway 3 at an elevation of 238 ft msl. Several trees and limbs scattered about the accident site, ranging in diameter from a few inches to about 6 inches, displayed relatively clean diagonal cuts consistent with propeller contact. Based on the limited damage to surrounding tree canopy, the airplane impacted the slope in a near-vertical attitude. There was evidence of a postcrash fire (Figure 3).

The wreckage was examined after it had been moved to a hangar. The airplane was severely fragmented and burned. The cockpit section exhibited extensive impact and fire damage and no flight or engine instruments were identified during the examination. The airframe systems could not be examined due to the extensive fire and impact damage. Due to the condition of the wreckage, flight control cable continuity could not be confirmed; however, the flight control cables remained connected to the empennage surfaces and all examined control cable separations were consistent with tensile overload or cutting for removal from the accident site.

Figure 3 - View of the airplane's tail section at the accident site.

Examination of the engine revealed that the propeller and the front portion of the engine's reduction gearbox was separated from the remainder of the engine. Several components of the engine, including the accessory gearbox, were consumed by the post-impact fire. The engine's rotating shafts were not capable of rotation before engine disassembly and various components required extensive cutting to enable access to the internal engine components. The first stage compressor blades and vanes were intact with evidence of rubbing contact between the shroud and blade tips, consistent with rotation at impact. Rubbing damage was noted on the compressor turbine blades and the blade disk. Heavy impact and rubbing damage were noted on the downstream side of the power turbine guide vane. All power turbine blades were fractured, and several blade fragments were recovered within the engine exhaust. The recovered tips exhibited rubbing and many of the blades exhibited bending in the direction opposite of rotation. Additional details of the engine examination are included in the public docket.

Medical and Pathological Information

Complete autopsy reports were not made available for review; however, the summary findings listed traumatic injuries as the cause of death for all occupants.

No medical information about the first officer was received other than the copy of her Costa Rican medical certificate.

A limited set of medical information about the pilot was reviewed and included a single page reviewing a portion of information regarding three visits for psychiatric evaluation in November and December 2011, the pilot had been diagnosed with Type I bipolar disease, attention deficit disorder with memory problems, superior intelligence, normal thyroid function, and treatment was begun with Seroquel (quetiapine, a sedating antipsychotic and antidepressant). However, there is only one page of information describing events in the pilot's childhood and young adult life. No intelligence testing or thyroid testing results are given. No testing for attention deficit disorder or symptom checklist are present. Other than a bill for further visits to the same hospital, there was no information about diagnosis confirmation or treatment effectiveness. No further information was available on the pilot's more recent medical or psychiatric conditions or treatments.

According to the FAA (US) blue ribbon medical file, the 52 year old male pilot had reported 14,532 hours of civilian flight experience during his most recent US aviation medical exam, dated 11/7/2017. He reported no visits to health care providers, no use of medications and no chronic conditions to his aviation medical examiner. No significant abnormalities were identified during the exam and the pilot was issued a first class medical certificate without limitations. His first US aviation medical certificate was issued in 1997; throughout all the ensuing years, the pilot reported no visits to healthcare providers, no use of medications, and no medical conditions. He intermittently received certificates limited by a requirement for corrective lenses; often, on the next visit the limitation was not present.

According to the Costa Rican aviation medical records, the 52 year old male pilot generally reported no medical conditions, no visits to any health care providers, and no use of medications. Over the most recent several years, the same aviation medical examiner (AME) performed both the US and Costa Rican exams. In May 2014, during a routine evaluation, the pilot reported using Lexapro (escitalopram, an antidepressant). The AME made no particular note of the finding and did not describe the pilot's mental state or reason for using the medication; he was issued a medical certificate without limitations. On the later exams, the pilot did not report the use of any medications.

Tests and Research

Surveillance Video

Evaluation of the surveillance video was performed using a computer program to estimate the airplane's location, orientation, and speed. About 13.4 seconds of the video was suitable for the estimation. The airplane's groundspeed was estimated to be 68±3 kts shortly after takeoff and the airplane was climbing about 715 ft/minute. Several seconds later, the airplane was descending about 1,510 ft/minute and its groundspeed was 82±4 kts. Its bank angle reached up to 75º right-wing-up at that time; the airplane

impacted the ground shortly thereafter. The Pilot's Operating Handbook (POH) for the airplane listed a gross weight stall speed at 60° bank with 0° and 20° flap settings as 110 kts calibrated airspeed (kcas) and 98 kcas, respectively.

Weight and Balance

Fueling services were not available at MRIA and the fuel load of the airplane before takeoff could not be determined; however, fuel consumption information for the airplane indicated that a minimum of 500 lbs of fuel was required to complete the 70-nautical-mile flight. Weight and balance calculations determined that fuel load weights above 930 lbs would have resulted in exceedance of the airplane manufacturer's aft center of gravity limitation. In order to remain within the specified limits and have adequate fuel for the flight, the takeoff weight range was determined to be between 7,740 lbs (500-lb fuel load), and 8,594 lbs (930-lb fuel load).

Takeoff Performance

According to the POH, takeoffs are limited to 10 kts of tailwind; a 10-kt tailwind would result in a 50% increase in takeoff distance. Using POH data, the takeoff ground roll distance required at gross weight, 30°C air temperature, and with a 10-kt tailwind would be about 2,235 ft.

Climb Performance

The airplane's climb gradient would have been dependent on several factors, including the takeoff weight of the airplane and the flap setting used by the flight crew. Based on the range of airplane weights previously calculated and flap settings of 0° and 20°, the airplane's maximum climb gradient would have been between 495 ft/sm and 583 ft/sm.

Three different takeoff scenarios were examined to determine if the airplane had sufficient climb performance to clear the terrain surrounding the airport. The first scenario (Figure 4) examined a takeoff using the approximate ground path used by the previous airplane. The calculations showed that the airplane would have had sufficient climb performance along this route, with a minimum climb gradient margin of 40% using 0° flap at the maximum allowable weight, and a 65% margin using 20° flap and the minimum fuel weight. A positive margin indicates that the calculated climb performance exceeded the minimum needed to clear terrain. A 0% margin indicates that the airplane would have cleared terrain with no excess altitude gained. A negative margin indicates that the calculated climb performance was not sufficient to clear the terrain.

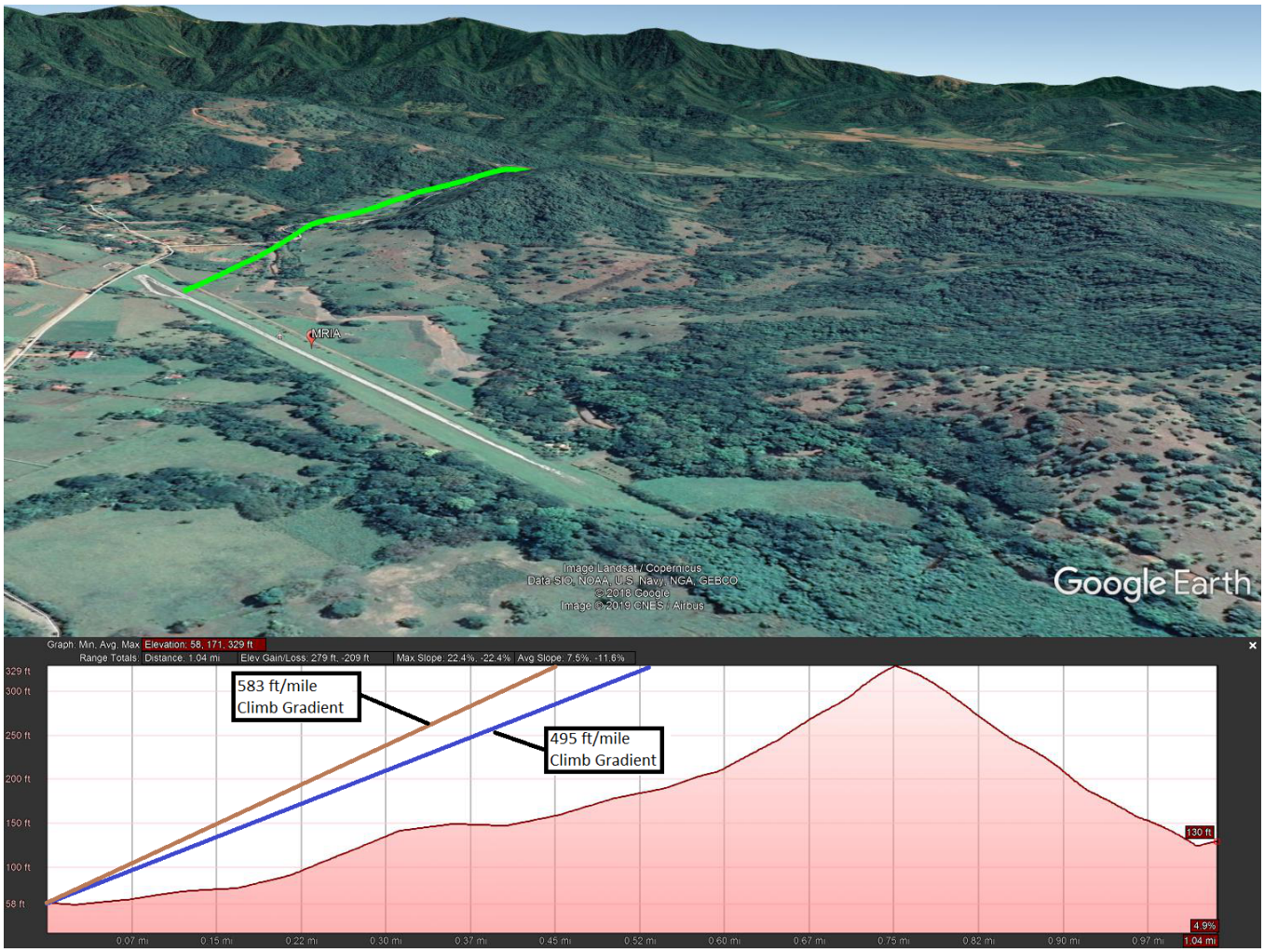

Figure 4 – Departure scenario 1 depicting the ground path of the previous airplane and the possible climb performance of the accident airplane overlaid on an elevation profile of the path.

The second scenario was a straight-out departure maintaining runway heading. Calculations showed that the airplane may not have had sufficient climb performance to clear the mountains using this route. The climb gradient margin at the maximum allowable weight and 0° flap setting was -14%, and at the minimum fuel weight using 20° flap setting was 1%.

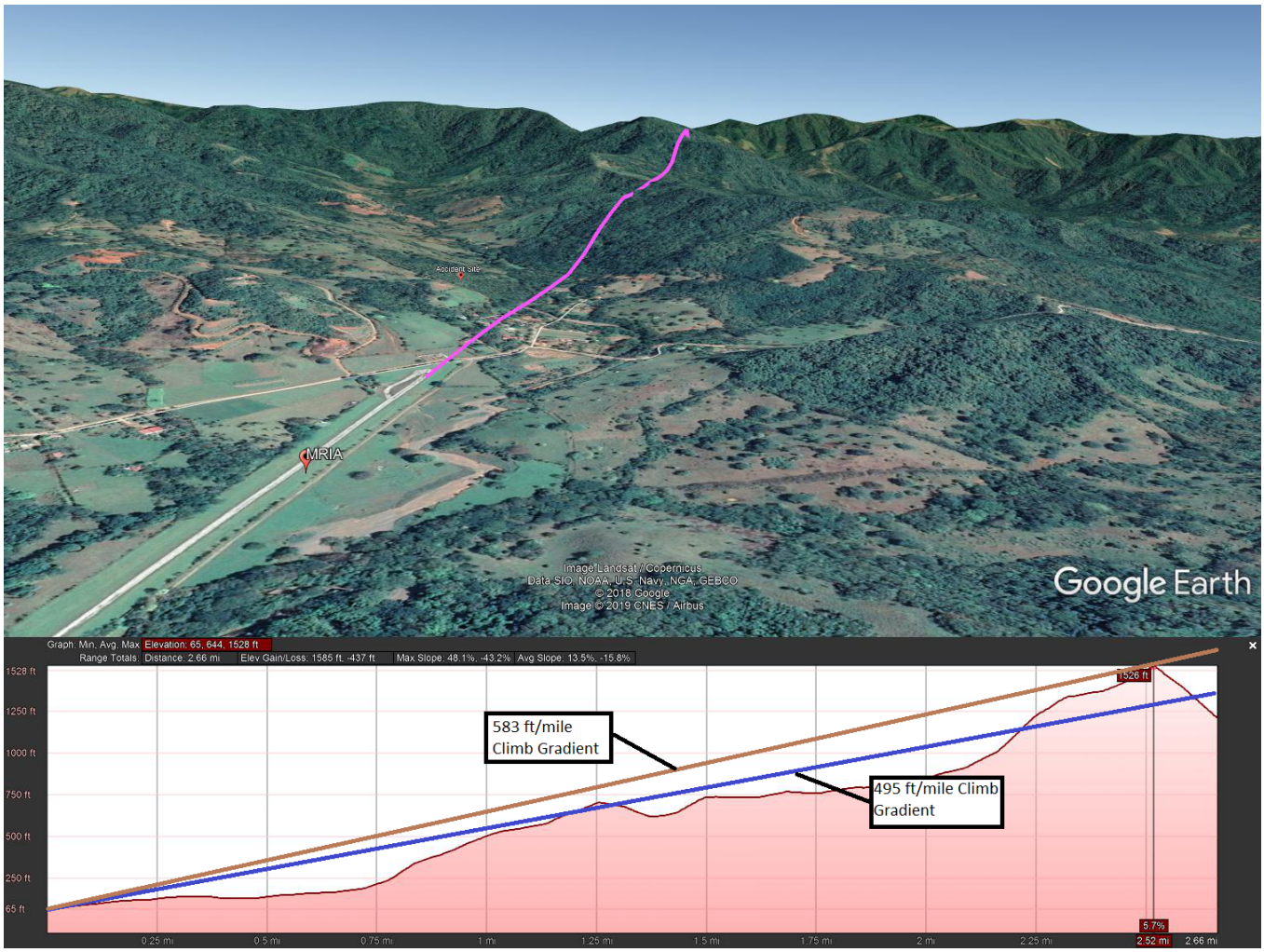

Figure 5 - Departure scenario 2 showing a takeoff path using a straight-out departure from runway 3, and the possible climb performance of the accident airplane overlaid on an elevation profile of the path.

The final scenario was a path that turned left after takeoff, following the valley floor (Figure 6). Calculations showed that the airplane may not have had sufficient climb gradient performance to clear the mountains using this path. The climb gradient margin at the maximum allowable weight and 0° flap setting was -8%, and at the minimum fuel weight using 20° flap setting was 9%.

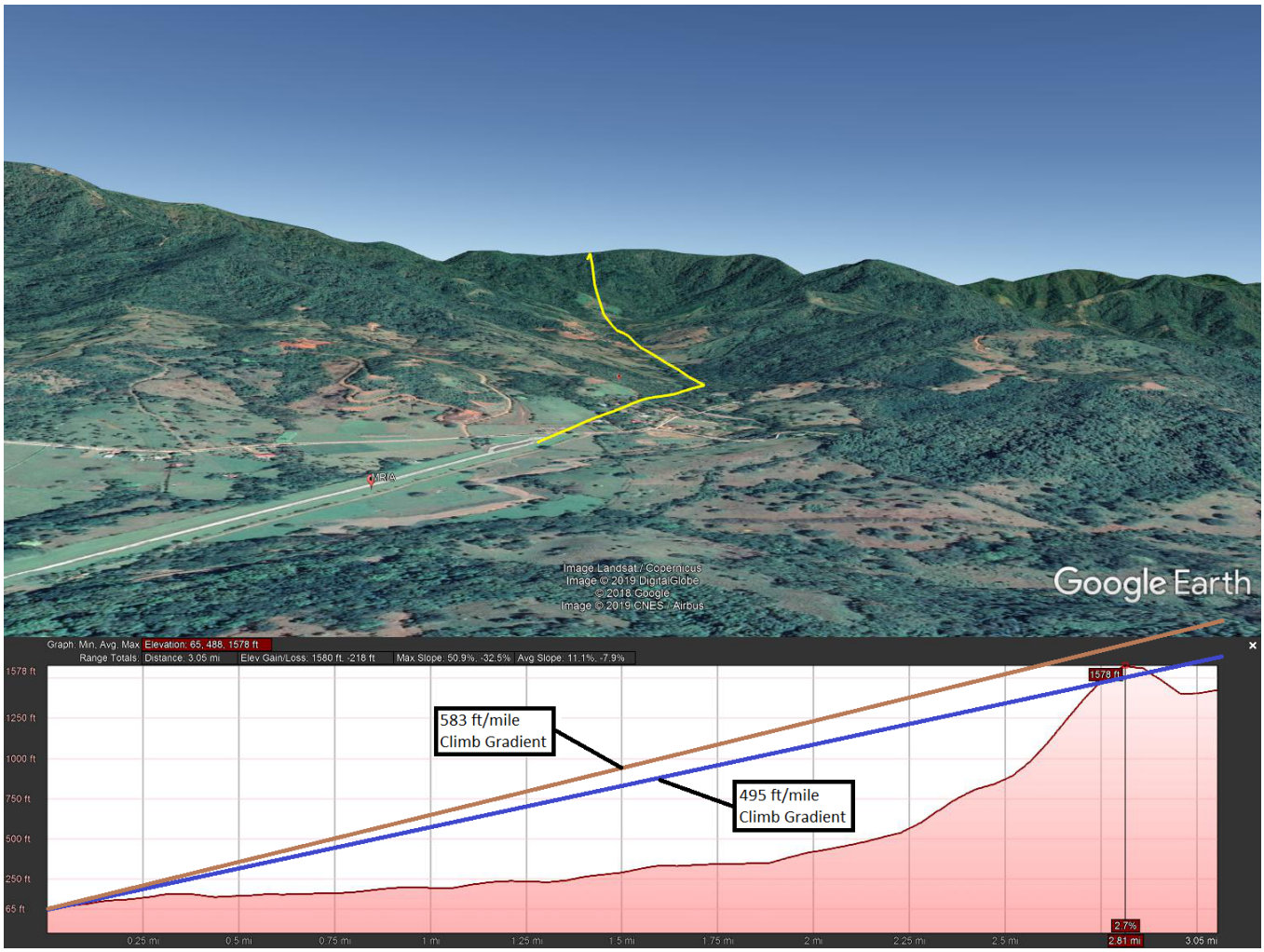

Figure 6 – Departure scenario 3 showing a takeoff from runway 3 over the valley floor to the north of the airport, and the possible climb performance of the accident airplane overlaid on an elevation profile of the path.

Additional Information

A friend of one of the passengers reported that he had received a text message from the passenger before the flight indicating that the airplane had been involved in a bird strike during its arrival to MRIA. The passenger's friend provided the text messages along with the pictures showing the damage to the airplane. The photographs showed that wing's left leading edge had incurred localized damage near the landing light. The landing light lens was cracked, and the leading edge appeared to display some deformation adjacent to the landing light. The damaged area was located ahead of the landing flaps and inboard of the aileron. Due to the localized extent of the damage, the flight characteristics and

controllability of the airplane would not have been adversely affected.

The witness reported that the flight crew was aware of the damage and that the captain had contacted the operator's maintenance facility to discuss the damage. He stated that the captain waited for a release from maintenance before proceeding with the flight and that this was the reason the accident airplane left about 15 minutes after the first airplane.

Figure 7 - Photograph showing the bird strike damage to the leading edge of the left wing.

The accident investigation was initially under the jurisdiction of the Costa Rican government. On May 18, 2018, the Chief of the Costa Rican Unidad de Investigación de Accidentes e Incidentes, Consejo Técnico de Aviación Civil, requested delegation of the accident investigation to the NTSB, which the NTSB accepted on May 30, 2018.

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Patrick Hempen; FAA; Washington, DC Henry Soderlund; Textron Aviation; Wichita, KS
Original Publish Date:	December 16, 2019
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=96543