# Aviation Investigation Final Report

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| **Location:** | Delta Junction, Alaska | **Accident Number:** | ANC15LA070 |
| **Date & Time:** | September 13, 2015, 08:40 Local | **Registration:** | N6464V |
| **Aircraft:** | Helio H 295 | **Aircraft Damage:** | Substantial |
| **Defining Event:** | Loss of engine power (partial) | **Injuries:** | 3 None |
| **Flight Conducted Under:** | Part 135: Air taxi & commuter - Non-scheduled | | |

## Analysis

The airline transport pilot was departing on the air taxi flight from a remote, unimproved airstrip estimated to be about 850 ft long with 800 ft usable. He stated that the airplane seemed to accelerate normally but failed to become airborne at the departure end of the runway. The airplane impacted brush and trees, resulting in substantial damage to the right wing. The pilot suggested that the engine may not have been producing full power because, during a previous flight from the airstrip with a similar load, the airplane became airborne in about 600 ft. A review of the airplane's takeoff performance data revealed a takeoff ground run of about 480 ft for the conditions at the time of the accident.

A postaccident examination of the airplane revealed a missing hose clamp on the scat tube that joins the air filter assembly to the air box; however, a postaccident engine run revealed no evidence of any preimpact mechanical anomalies with the airplane's engine or systems.

## Probable Cause and Findings

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

A partial loss of engine power during takeoff for reasons that could not be determined because postaccident examination of the airframe and engine did not reveal any anomalies that would have precluded normal operation.

## Findings

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| **Not determined** | (general) - Unknown/Not determined |

# Factual Information

## History of Flight

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| **Takeoff** | Loss of engine power (partial) (Defining event) |
| **Takeoff** | Runway excursion |
| **Takeoff** | Collision with terr/obj (non-CFIT) |

On September 13, 2015, about 0840 Alaska daylight time, a tundra tire-equipped Helio Courier H-295 airplane, N6464V, sustained substantial damage during takeoff following a runway excursion from a remote unimproved airstrip near Delta Junction, AK. The airplane was being operated by Wright Air Service Fairbanks, Alaska, as a visual flight rules (VFR) on-demand charter flight under the provisions of 14 Code of Federal Regulations (CFR) Part 135.The certificated airline transport pilot and two passengers were not injured. Visual meteorological conditions prevailed, and a VFR flight plan had been filed. The flight departed a remote unimproved airstrip near Delta Junction, Alaska, at about 0840 destined for Fairbanks, AK.

During an interview with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) on September 14, the pilot stated that he was departing from a remote unimproved airstrip estimated to be about 850 feet long, with 800 feet usable. He stated that the airplane seemed to accelerate normally, but failed to become airborne at the departure end of the runway, and impacted brush and trees, sustaining substantial damage to the right wing.

In the recommendation section of the NTSB Accident/Incident Reporting Form 6120.1, the pilot went on to state that following the accident he departed the airstrip in the same make and model airplane with a similar load and the airplane lifted off in about 600 feet. In addition, he stated that it was possible that the engine was not producing full power even though the RPM was at redline, and there were no sounds associated with missing or a power reduction.

A Helio Courier training manual dated October 1968 provided a Takeoff Distance vs Density Altitude chart for hard surfaced runways, which included a ground run correction factor for wet grass and soft turf. At a density altitude of about 928 feet and a gross weight of about 3,340 pounds, the takeoff ground run with the wet grass correction factor was about 480 feet.

The airplane was equipped with a Lycoming GO-480-G1D6 engine, the pressure carburetor was replaced with a Bendix fuel injection system, under the Federal Aviation Administration (FAA) field approval process.

On October 2, the engine, while still mounted on the accident airplane's airframe, was operated under the direction of the IIC, along with the rest of the investigative team. The engine ran without any observed anomalies, and produced full factory specified rpm. A drop of about 25 RPM was noted for the left and right magnetos. A series of power adjustments from idle to full power were conducted with no hesitation in engine operation noted.

An aviation safety inspector from the Flight Standards Division, System Safety and Analysis Branch inspected the accident airplane following the engine run, and noted that the scat tube that joins the air box assembly to the air filter assembly was not secured to the filter assembly with the hose clamp as depicted in the Helio Courier parts manual.

The closest weather reporting facility was Allen Army Airfield, about 35 miles northeast of the accident site. At 0853, a weather observation from Allen Army Airfield was reporting, in part: wind calm; visibility, 10 statute miles; few clouds 1,000 feet, few clouds 13,000 feet, scattered clouds 17,000 feet, scattered clouds 20,000 feet; temperature, 28 degrees F; dew point 27 degrees F; altimeter, 30.14 inHG.

## Pilot Information

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| **Certificate:** | Airline transport | **Age:** | 62 |
| **Airplane Rating(s):** | Single-engine land; 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:** | No |
| **Medical Certification:** | Class 1 Without waivers/limitations | **Last FAA Medical Exam:** | March 24, 2015 |
| **Occupational Pilot:** | Yes | **Last Flight Review or Equivalent:** | March 24, 2015 |
| **Flight Time:** | 20000 hours (Total, all aircraft), 2500 hours (Total, this make and model), 19950 hours (Pilot In Command, all aircraft), 450 hours (Last 90 days, all aircraft), 170 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft) | | |

## Aircraft and Owner/Operator Information

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| **Aircraft Make:** | Helio | **Registration:** | N6464V |
| **Model/Series:** | H 295 | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | 1969 | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 1414 |
| **Landing Gear Type:** | Tailwheel | **Seats:** | 3 |
| **Date/Type of Last Inspection:** | August 26, 2015 100 hour | **Certified Max Gross Wt.:** | 3800 lbs |
| **Time Since Last Inspection:** | | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | 5888 Hrs as of last inspection | **Engine Manufacturer:** | LYCOMING |
| **ELT:** | C126 installed, not activated | **Engine Model/Series:** | GO-480 SERIES |
| **Registered Owner:** | BURSIEL EQUIPMENT INC | **Rated Power:** | 295 Horsepower |
| **Operator:** | Wright Air Service | **Operating Certificate(s) Held:** | On-demand air taxi (135) |

## Meteorological Information and Flight Plan

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| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | PABI | **Distance from Accident Site:** | 35 Nautical Miles |
| **Observation Time:** | 16:53 Local | **Direction from Accident Site:** | 66° |
| **Lowest Cloud Condition:** | Few / 1000 ft AGL | **Visibility** | 10 miles |
| **Lowest Ceiling:** | | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 30.06 inches Hg | **Temperature/Dew Point:** | -2°C / -3°C |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | Delta Junction, AK | **Type of Flight Plan Filed:** | VFR |
| **Destination:** | Fairbanks, AK (PAFA) | **Type of Clearance:** | None |
| **Departure Time:** | | **Type of Airspace:** | Class G |

## Wreckage and Impact Information

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| **Crew Injuries:** | 1 None | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | 2 None | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 3 None | **Latitude, Longitude:** | 63.783332,-146.066665(est) |

## Administrative Information

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| **Investigator In Charge (IIC):** | Banning, David |
| **Additional Participating Persons:** | Brad Sipperly; Federal Aviation Administration; Faribanks, AK<br>Ken Michaelis; Wright Air Service; Fairbanks, AK |
| **Original Publish Date:** | March 23, 2017 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | The NTSB did not travel to the scene of this accident. |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=91975 |