# Aviation Investigation Final Report

| | | | |
|---|---|---|---|
| **Location:** | Titusville, Florida | **Accident Number:** | ATL03LA040 |
| **Date & Time:** | February 2, 2003, 12:06 Local | **Registration:** | N9769L |
| **Aircraft:** | Beech A24R | **Aircraft Damage:** | Substantial |
| **Defining Event:** | | **Injuries:** | 1 Serious, 3 Minor |
| **Flight Conducted Under:** | Part 91: General aviation - Personal | | |

## Analysis

The pilot advanced the throttle for takeoff until the throttle was completely in and at the hub. He initially noted the rpm showed 2,300, rpm and during the takeoff roll the rpm showed 2,500 rpm. The Pilot's Operating Handbook states that full throttle 2,700 rpm is required for takeoff. The throttle slipped back about 1/2 inch on two different occasions, and the pilot pushed the throttle back in. No increase in engine power was noted and he continued the takeoff roll. Once airborne, the pilot retracted the landing gear and continued applying full throttle. The throttle felt like it was sticking and the engine was not producing full power. The airplane reached about 75 to 100 feet, and was not climbing. The pilot realized he would not clear wires and trees to his immediate front and applied aft pressure on the control yoke to decrease his airspeed and the impending impact. Examination of the airplane wreckage revealed the throttle cable was hard to move and fractured. The throttle cable was removed, and forwarded to the NTSB Materials Laboratory. The examination revealed the fractures were typical of bending overstress while the cable was under a tension load. No determination was made for the loss of engine power.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power for undetermined reasons. The pilot's failure to attain full power for takeoff in accordance with the operation handbook was a factor.

## Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: TAKEOFF - ROLL/RUN

Findings
1. (F) FLIGHT MANUALS - NOT FOLLOWED - PILOT IN COMMAND
2. (C) REASON FOR OCCURRENCE UNDETERMINED
---

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF
---

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings
3. OBJECT - WIRE,STATIC
4. OBJECT - TREE(S)

## Factual Information

On February 2, 2003, at 1206 eastern standard time, a Beech A24R, N9769L, registered to a private owner, collided with wires and trees on initial takeoff climb from runway 09 at Space Coast Regional Airport, Titusville, Florida. Visual meteorological conditions prevailed and an instrument flight rules flight plan was filed. The airplane sustained substantial damage. The private pilot reported serious injuries and the three passengers reported minor injuries. The flight originated from Titusville, Florida, on February 2, 2003, at 1205.

The pilot advanced the throttle for takeoff until the throttle was completely in and at the hub. He initially noted the rpm showed 2,300, rpm and during the takeoff roll the rpm showed 2,500 rpm. The throttle slipped back about 1/2 inch on two different occasions, and he pushed the throttle back in. No increase in engine power was noted and he continued the takeoff roll. The pilot stated he probably had enough runway left to stop the airplane if he had aborted the takeoff soon enough. Once airborne, the pilot retracted the landing gear and continued applying full throttle. The throttle felt like it was sticking and the engine was not producing full power. The airplane reached about 75 to 100 feet, and was not climbing. The wind was out of the south and the pilot started a turn. The pilot stated he knew the airplane was not going to clear the wires and trees. The pilot applied aft pressure on the control yoke to decrease his airspeed and lessen the impending collision.

The controller in charge at Space Coast Regional Tower stated the pilot departed from runway 9. The ground run appeared to be slow. The airplane rotated and climbed to about 15 to 20 feet above the runway and flew straight ahead. Just before colliding with wires and trees he observed the nose of the airplane to pitch up.

Review of the Pilot's Operating Handbook, Section II Limitations, Power Plant Limitations states, "Take-off and Maximum Continuous Power..... Full throttle or 2700 rpm, whichever occurs first." Section IV Normal Procedures states, "Takeoff.....Full throttle- 2700 RPM."

Examination of the crash site revealed the throttle cable was hard to move and would not move through the full range of travel. The cable was removed and visually inspected. The inner cable separated near the swaged assembly connected to the throttle handle. The throttle cable assembly was forwarded to the NTSB Materials Laboratory for further analysis. Examination revealed the inner cable was fractured near the cockpit end of the assembly. Magnified optical examination of the fracture area revealed the seven individual wires of the inner cable were all deformed in a common direction adjacent to the fracture. The fractures were all typical overstress breaks, and there was no evidence of wear or corrosion deterioration at the fracture location. Fracture features and associated deformation were consistent with a bending overstress fracture while the cable was under a tension load.

Review of the airplane logbooks revealed the throttle cable had not been replaced since the airplane was manufactured. The engine control cables were lubed on October 7, 2001, and the last annual inspection was on November 11, 2002. The total time on the throttle cable at the time of the accident was 4,533 hours.

The aircraft wreckage was released to the registered owner on February 4, 2003. The throttle cable assembly was released to Atlanta Air Recovery, Griffin, Georgia, on April 30, 2003.

## Pilot Information

| | | | |
|---|---|---|---|
| **Certificate:** | Private | **Age:** | 40,Male |
| **Airplane Rating(s):** | Single-engine land | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | |
| **Instrument Rating(s):** | Airplane | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | No |
| **Medical Certification:** | Class 3 Valid Medical--no waivers/lim. | **Last FAA Medical Exam:** | March 3, 2002 |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | May 11, 2001 |
| **Flight Time:** | 850 hours (Total, all aircraft), 500 hours (Total, this make and model), 800 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft) | | |

## Aircraft and Owner/Operator Information

| | | | |
|---|---|---|---|
| **Aircraft Make:** | Beech | **Registration:** | N9769L |
| **Model/Series:** | A24R | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | MC109 |
| **Landing Gear Type:** | Retractable - Tricycle | **Seats:** | 4 |
| **Date/Type of Last Inspection:** | November 6, 2002 Annual | **Certified Max Gross Wt.:** | 2750 lbs |
| **Time Since Last Inspection:** | 25 Hrs | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | 4533 Hrs at time of accident | **Engine Manufacturer:** | Lycoming |
| **ELT:** | Installed, not activated | **Engine Model/Series:** | IO-360-A1B |
| **Registered Owner:** | Steven J. Halm | **Rated Power:** | 200 Horsepower |
| **Operator:** | | **Operating Certificate(s) Held:** | None |

## Meteorological Information and Flight Plan

| | | | |
|---|---|---|---|
| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | TIX,34 ft msl | **Distance from Accident Site:** | 0 Nautical Miles |
| **Observation Time:** | 11:49 Local | **Direction from Accident Site:** | 0° |
| **Lowest Cloud Condition:** | Few / 20000 ft AGL | **Visibility** | 7 miles |
| **Lowest Ceiling:** | None | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 4 knots / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 90° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 30.14 inches Hg | **Temperature/Dew Point:** | 18°C |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | Titusville, FL (TIX ) | **Type of Flight Plan Filed:** | IFR |
| **Destination:** | Reidsville, NC (78N ) | **Type of Clearance:** | IFR |
| **Departure Time:** | 12:05 Local | **Type of Airspace:** | Class D |

## Airport Information

| | | | |
|---|---|---|---|
| **Airport:** | Space Coast Regional TIX | **Runway Surface Type:** | Asphalt |
| **Airport Elevation:** | 30 ft msl | **Runway Surface Condition:** | Dry |
| **Runway Used:** | 09 | **IFR Approach:** | None |
| **Runway Length/Width:** | 5001 ft / 100 ft | **VFR Approach/Landing:** | None |

## Wreckage and Impact Information

| | | | |
|---|---|---|---|
| **Crew Injuries:** | 1 Serious | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | 3 Minor | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 1 Serious, 3 Minor | **Latitude, Longitude:** | 28.513889,-80.797225 |

## Administrative Information

| | |
|---|---|
| **Investigator In Charge (IIC):** | Smith, Carrol |
| **Additional Participating Persons:** | Albert Kimball; Orlando FSDO; Orlando, FL<br>Edward G Rogalski; Textron Lycoming; Belleview, FL |
| **Original Publish Date:** | September 30, 2003 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=56424 |