



National Transportation Safety Board Aviation Accident Final Report

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|--------------------------------|------------------------|-------------------------|-------------|
| Location: | Childress, TX | Accident Number: | DFW06CA158 |
| Date & Time: | 06/01/2006, 1306 CDT | Registration: | N70AF |
| Aircraft: | Ayres S2R-600 | Aircraft Damage: | Substantial |
| Defining Event: | | Injuries: | 1 None |
| Flight Conducted Under: | Part 137: Agricultural | | |

Analysis

While in cruise flight, the 19,620-hour commercial pilot lost control of the rudder pedals and experienced trouble maintaining directional control of the single-engine, turbine powered agricultural airplane. The pilot reported that "he dumped his chemical load at a safe location" and elected to discontinue the aerial application flight. The pilot proceeded to a larger airport for a landing. The pilot added that he made several attempts to land as he was having trouble keeping the airplane aligned with runway 35 unless he maintained a much higher than normal airspeed on final approach. On his final attempt, the pilot was able to land, but as the airplane slowed down, it veered off the right side of the 5,949-foot long, by 75-foot wide asphalt runway. Following the loss of control, the left wing of the airplane collided with a tractor. A Federal Aviation Administration (FAA) safety inspector performed an on-scene examination of the airplane and found that the rudder horn was corroded and had completely separated. According to the pilot, the rudder horn is covered by fabric and it was difficult to inspect during a preflight inspection. The pilot added that even though the operator has a procedure in place to wash the airplane after spraying corrosive chemicals, he suggested that somehow chemicals had made contact with the rudder horn which caused the corrosion. At the time of the last 100 hour inspection, which was completed less than 11 days prior to the mishap, the tailwheel-equipped airplane had accumulated a total of 11,107.8 hours since new. The wind at the time of the accident was reported from 030 degrees at 8 knots.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inability to maintain directional control while landing due to the failure of the rudder horn due to corrosion.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (C) FLIGHT CONTROL, RUDDER/VATOR ATTACHMENT - CORRODED

Occurrence #2: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING - ROLL

Findings

2. (C) DIRECTIONAL CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: LANDING - ROLL

Findings

3. OBJECT - VEHICLE

Factual Information

Pilot Information

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|----------------------------------|---|--|----------------------------|
| Certificate: | Commercial | Age: | 63, Male |
| Airplane Rating(s): | Single-engine Land | Seat Occupied: | |
| Other Aircraft Rating(s): | None | Restraint Used: | Seatbelt, Shoulder harness |
| Instrument Rating(s): | None | Second Pilot Present: | No |
| Instructor Rating(s): | | Toxicology Performed: | |
| Medical Certification: | Class 2 | Last Medical Exam: | 01/01/2006 |
| Occupational Pilot: | | Last Flight Review or Equivalent: | |
| Flight Time: | 19620 hours (Total, all aircraft), 2540 hours (Total, this make and model), 120 hours (Last 90 days, all aircraft), 45 hours (Last 30 days, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|-----------------------|---|-----------------|
| Aircraft Manufacturer: | Ayres | Registration: | N70AF |
| Model/Series: | S2R-600 | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | No |
| Airworthiness Certificate: | Restricted | Serial Number: | 2547R |
| Landing Gear Type: | Tailwheel | Seats: | |
| Date/Type of Last Inspection: | | Certified Max Gross Wt.: | |
| Time Since Last Inspection: | | Engines: | 1 Reciprocating |
| Airframe Total Time: | | Engine Manufacturer: | Garrett |
| ELT: | Not installed | Engine Model/Series: | TPE-331 |
| Registered Owner: | Goff's Flying Service | Rated Power: | |
| Operator: | Goff's Flying Service | Air Carrier Operating Certificate: | None |

Meteorological Information and Flight Plan

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|----------------------------------|---------------------|------------------------------|-------------------|
| Observation Facility, Elevation: | CDS | Observation Time: | 1253 |
| Distance from Accident Site: | | Condition of Light: | Day |
| Direction from Accident Site: | | Conditions at Accident Site: | Visual Conditions |
| Lowest Cloud Condition: | Clear | Temperature/Dew Point: | 27° C / 14° C |
| Lowest Ceiling: | None | Visibility | 10 Miles |
| Wind Speed/Gusts, Direction: | 8 knots, 30° | Visibility (RVR): | |
| Altimeter Setting: | 30.19 inches Hg | Visibility (RVV): | |
| Precipitation and Obscuration: | | | |
| Departure Point: | Paducah, TX (3F6) | Type of Flight Plan Filed: | None |
| Destination: | Childress, TX (CDS) | Type of Clearance: | None |
| Departure Time: | | Type of Airspace: | |

Airport Information

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|----------------------|----------------------------------|---------------------------|------|
| Airport: | ChildressMunicipal Airport (CDS) | Runway Surface Type: | |
| Airport Elevation: | | Runway Surface Condition: | |
| Runway Used: | 040 | IFR Approach: | None |
| Runway Length/Width: | | VFR Approach/Landing: | |

Wreckage and Impact Information

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|---------------------|--------|---------------------|-------------|
| Crew Injuries: | 1 None | Aircraft Damage: | Substantial |
| Passenger Injuries: | N/A | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | |
| Total Injuries: | 1 None | | |

Administrative Information

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|-----------------------------------|--|---------------|------------|
| Investigator In Charge (IIC): | Leah D Yeager | Adopted Date: | 10/03/2006 |
| Additional Participating Persons: | Bruce Jeffcoat; Lubbock FAA?FSDO | | |
| Publish Date: | | | |
| Note: | This accident report documents the factual circumstances of this accident as described to the NTSB. | | |
| Investigation Docket: | NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ . | | |

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report.