



Aviation Investigation Final Report

Location:	Edmore, North Dakota	Accident Number:	CHI01LA252
Date & Time:	July 28, 2001, 15:00 Local	Registration:	N4361S
Aircraft:	Air Tractor AT-301	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The airplane impacted a ditch and nosed over during takeoff from a road. Examination of the wreckage revealed that the right outboard wheel half, right tire, and right tire inner tube had separated from the airframe. No other anomalies were found that could be associated with a pre-impact condition. Three of the right wheel through bolts were recovered from the accident scene. Two of the recovered bolts had stripped threads and a third was fractured in the threaded portion of the bolt. The left wheel was examined and was found intact. Seven of the through bolts that hold the left wheel halves together were found to have been over-torqued. The torque readings were from 125 to 175 inch-pounds on these bolts. The specified torque as printed on the wheel is 90 inch-pounds. The remaining two bolts were found to be stripped. One of the through bolts was found to be a coarse thread bolt. The bolts specified for attaching the wheel halves are AN4 fine thread bolts.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The incorrect installation of the wheel assembly bolts by maintenance personnel resulting in the stripped bolt threads and ultimate failure of the wheel, and directional control not possible by the pilot. A factor was the ditch

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: TAKEOFF - ROLL/RUN

Findings

1. (C) MISCELLANEOUS,BOLT/NUT/FASTENER/CLAMP/SPRING - STRIPPED THREAD
2. (C) MAINTENANCE,INSTALLATION - INCORRECT - OTHER MAINTENANCE PERSONNEL
3. MISCELLANEOUS,BOLT/NUT/FASTENER/CLAMP/SPRING - UNAPPROVED PART
4. (C) LANDING GEAR,WHEEL - FAILURE

Occurrence #2: LOSS OF CONTROL - ON GROUND/WATER

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

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

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

6. (F) TERRAIN CONDITION - DITCH

Occurrence #4: NOSE OVER

Phase of Operation: TAKEOFF - ROLL/RUN

Factual Information

On July 28, 2001, at about 1500 central daylight time, an Air Tractor AT-301, N4361S, piloted by a commercial pilot, was substantially damaged when it impacted a ditch and nosed over during takeoff from a road near Edmore, North Dakota. The 14 CFR Part 137 Aerial application flight was operating in visual meteorological conditions and was not on a flight plan. The pilot received minor injuries. The local flight was originating at the time of the accident.

Post accident examination of the wreckage revealed that the right outboard wheel half, right tire, and right tire inner tube had separated from the airframe. No other anomalies were found that could be associated with a pre-impact condition.

Three of the right wheel through bolts were recovered from the accident scene. Two of the recovered bolts had stripped threads and the third was fractured in the threaded portion of the bolt. The left wheel was examined and was found intact. Seven of the through bolts that hold the left wheel halves together were found to have been over-torqued. The torque readings were from 125 to 175 inch-pounds on these bolts. The specified torque as printed on the wheel is 90 inch-pounds. The remaining two bolts were found to be stripped. One of the through bolts was found to be a coarse thread bolt. The bolts specified for attaching the wheel halves are AN4 fine thread bolts.

Pilot Information

Certificate:	Commercial	Age:	45, Male
Airplane Rating(s):	Single-engine land; Single-engine sea	Seat Occupied:	Center
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	Last FAA Medical Exam:	April 6, 2001
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 5, 2000
Flight Time:	3010 hours (Total, all aircraft), 900 hours (Total, this make and model), 3010 hours (Pilot In Command, all aircraft), 360 hours (Last 90 days, all aircraft), 250 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Air Tractor	Registration:	N4361S
Model/Series:	AT-301	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	301-0041
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	May 20, 2001 Annual	Certified Max Gross Wt.:	5000 lbs
Time Since Last Inspection:	310 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	5000 Hrs at time of accident	Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	R-1340-AN1
Registered Owner:	Mark D. Brekke	Rated Power:	600 Horsepower
Operator:		Operating Certificate(s) Held:	
Operator Does Business As:	Brekke Aerial Service	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	DVL,1455 ft msl	Distance from Accident Site:	25 Nautical Miles
Observation Time:	14:55 Local	Direction from Accident Site:	225°
Lowest Cloud Condition:	Few / 9500 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.01 inches Hg	Temperature/Dew Point:	25°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Edmore, ND	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	15:00 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	48.409763,-98.450248(est)

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Karmen C Johnson; FAA-Fargo, North Dakota FSDO; Fargo, ND
Original Publish Date:	January 23, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=53272

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).