



# Aviation Investigation Final Report

<b>Location:</b>	SUPERIOR, Nebraska	<b>Accident Number:</b>	CHI00LA271
<b>Date &amp; Time:</b>	August 25, 2000, 20:00 Local	<b>Registration:</b>	N91842
<b>Aircraft:</b>	Air Tractor            AT-401	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 137: Agricultural		

## Analysis

The pilot said he was spraying a milo field, 3 miles southeast of Superior, Nebraska. While in a turn to south, 'the engine started to sputter and miss. Smoke started coming out of the left hand side of the engine ... a substantial power loss followed.' The pilot turned the airplane to the north and attempted to put down in an alfalfa field. During the landing attempt, the airplane struck some hay bales and a tree. An examination of the airplane's engine revealed a cracked exhaust valve on the number 7 cylinder. No other anomalies were found.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the cracked number 7 cylinder exhaust valve. A factor relating to this accident was the tree.

## Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF  
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings  
1. (C) ENGINE ASSEMBLY, VALVE, EXHAUST - CRACKED  
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Occurrence #2: FORCED LANDING  
Phase of Operation: EMERGENCY DESCENT/LANDING  
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Occurrence #3: IN FLIGHT COLLISION WITH OBJECT  
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

2. (F) OBJECT - TREE(S)

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Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

## Factual Information

On August 25, 2000, at 2000 central daylight time (cdt), an Air Tractor AT-401, N91842, operated by a commercial pilot, was destroyed when it struck a tree and the terrain, during an attempted forced landing on an alfalfa field. Prior to the forced landing, the airplane's engine lost power, while the airplane was maneuvering. Visual meteorological conditions prevailed at the time of the accident. The aerial application flight was being conducted under 14 CFR Part 137. There was no flight plan on file. The pilot sustained no injuries. The local flight originated at Superior, Nebraska, at 1930 cdt.

In his written statement, the pilot said he was spraying a milo field, 3 miles southeast of Superior, Nebraska. While in a turn to south, "the engine started to sputter and miss. Smoke started coming out of the left hand side of the engine ... a substantial power loss followed." The pilot turned the airplane to the north and attempted to put down in an alfalfa field. During the landing attempt, the airplane struck some hay bales and a tree.

A Federal Aviation Administration inspector, examined the airplane at the accident site. The airplane's wings were broken aft from the fuselage. The engine and hopper were broken off the front of the airplane. The main landing gear were broken aft. The fuselage was twisted and buckled. The empennage was intact. Flight control continuity was confirmed. An examination of the engine revealed a cracked exhaust valve on the number 7 cylinder. No other anomalies were found.

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	33, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Center
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	January 31, 2000
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	3848 hours (Total, all aircraft), 3436 hours (Total, this make and model), 3799 hours (Pilot In Command, all aircraft), 120 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Air Tractor	<b>Registration:</b>	N91842
<b>Model/Series:</b>	AT-401 AT-401	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Restricted (Special)	<b>Serial Number:</b>	907
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	January 31, 2000 Annual	<b>Certified Max Gross Wt.:</b>	6000 lbs
<b>Time Since Last Inspection:</b>	300 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2500 Hrs	<b>Engine Manufacturer:</b>	P&W
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	R-1340
<b>Registered Owner:</b>	BUTLER AIR SERVICE, INC.	<b>Rated Power:</b>	600 Horsepower
<b>Operator:</b>	BARRY BLACKSTONE	<b>Operating Certificate(s) Held:</b>	
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Dusk
<b>Observation Facility, Elevation:</b>	HSI ,1961 ft msl	<b>Distance from Accident Site:</b>	37 Nautical Miles
<b>Observation Time:</b>	19:53 Local	<b>Direction from Accident Site:</b>	330°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	8 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	100°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	28°C / 22°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	(12K )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	19:00 Local	<b>Type of Airspace:</b>	Class E

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	40.020835,-98.059204(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Bowling, David
<b>Additional Participating Persons:</b>	JERRY CROWLEY; LINCOLN , NE
<b>Original Publish Date:</b>	April 25, 2001
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB traveled to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=50108">https://data.ntsb.gov/Docket?ProjectID=50108</a>

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](#).