



# Aviation Investigation Final Report

<b>Location:</b>	Covert, Michigan	<b>Accident Number:</b>	CHI03LA170
<b>Date &amp; Time:</b>	June 20, 2003, 09:40 Local	<b>Registration:</b>	N3659T
<b>Aircraft:</b>	Air Tractor AT-301	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 137: Agricultural		

## Analysis

The airplane was substantially damaged during a forced landing following a loss of engine power. The terrain was soft and rough, causing the aircraft to nose over prior to coming to a rest. The aircraft was most recently fueled with 100 gallons and consumed approximately 35 gallons/hour during flight. The pilot estimated the total flight time since refueling as 2-1/2 to 3 hours, accumulated over two or three flights. A total of 4 gallons of fuel were recovered from the aircraft after the accident. Unusable fuel was listed at 6 gallons according to the Federal Aviation Administration Type Certificate Data Sheet. No evidence of fuel contamination was present. A post-accident examination of the aircraft and engine did not reveal any pre-impact anomalies. The pilot stated that the "most probable cause [of the accident was a] lack of fuel."

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Failure of the pilot to verify fuel quantity prior to the accident flight, and fuel exhaustion resulting in a loss of engine power. Contributing factors were the soft, rough, unsuitable terrain for a forced landing.

## Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL  
Phase of Operation: CRUISE

Findings

1. (C) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND
2. (C) FLUID,FUEL - EXHAUSTION

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Occurrence #2: FORCED LANDING  
Phase of Operation: DESCENT - EMERGENCY

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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: EMERGENCY LANDING

Findings

3. (F) UNSUITABLE TERRAIN OR TAKEOFF/LANDING/TAXI AREA - ENCOUNTERED - PILOT IN COMMAND
4. (F) TERRAIN CONDITION - ROUGH/UNEVEN
5. (F) TERRAIN CONDITION - SOFT

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Occurrence #4: NOSE OVER  
Phase of Operation: EMERGENCY LANDING

## Factual Information

On June 20, 2003, at 0940 eastern daylight time, an Air Tractor AT-301, N3659T, operated by Robertson Crop Dusting Service Inc., sustained substantial damage during a forced landing 7 miles south of South Haven Area Regional Airport (0D1), South Haven, Michigan. Visual meteorological conditions prevailed at the time of the accident. The 14 CFR Part 137 aerial application flight was not operating on a flight plan. The pilot reported minor injuries. The local flight departed 0D1 at 0840.

The pilot stated he was returning to 0D1 after the local flight when the engine backfired twice. He reported that he landed in a field, however, the terrain was sandy and rough. The aircraft subsequently nosed over prior to coming to rest.

The pilot stated that the aircraft had been fueled with approximately 100 gallons one or two flights prior to the accident flight. The aircraft's normal fuel consumption was about 35 gallons/hour, according to the pilot. He estimated the total flight time since refueling had been 2-1/2 to 3 hours.

Approximately four gallons of fuel were recovered from the aircraft after the accident. The aircraft's type certificate data sheet lists a maximum fuel capacity of 126 gallons with 120 gallons useable.

The pilot reported no malfunctions with the airplane prior to the loss of engine power. A post-accident examination of the aircraft and engine did not reveal any pre-impact anomalies. No evidence of fuel contamination was present.

The pilot stated that the "most probable cause [of the accident was a] lack of fuel."

## Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	38, 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>	Airplane	<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—no waivers/lim.	<b>Last FAA Medical Exam:</b>	July 11, 2002
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	April 21, 2003
<b>Flight Time:</b>	5150 hours (Total, all aircraft), 1675 hours (Total, this make and model), 4900 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 140 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>	N3659T
<b>Model/Series:</b>	AT-301	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Restricted (Special)	<b>Serial Number:</b>	301-0329
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	April 9, 2003 Annual	<b>Certified Max Gross Wt.:</b>	6200 lbs
<b>Time Since Last Inspection:</b>	103.1 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	7649.6 Hrs at time of accident	<b>Engine Manufacturer:</b>	Pratt & Whitney
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	R-1340 AN1
<b>Registered Owner:</b>	Robertson Crop Dusting Service Inc.	<b>Rated Power:</b>	600 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	RCDG

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	BEH,643 ft msl	<b>Distance from Accident Site:</b>	15 Nautical Miles
<b>Observation Time:</b>	09:53 Local	<b>Direction from Accident Site:</b>	225°
<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>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	0°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.2 inches Hg	<b>Temperature/Dew Point:</b>	16°C / 8°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	South Haven, MI (0D1 )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	08:40 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	South Haven Area Regional 0D1	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	663 ft msl	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<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>	42.350833,-86.256111

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Sorensen, Timothy
<b>Additional Participating Persons:</b>	Henry Aund; FAA- Grand Rapids FSDO; Grand Rapids, MI
<b>Original Publish Date:</b>	December 30, 2003
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=57291">https://data.nts.gov/Docket?ProjectID=57291</a>

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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](#).