



# Aviation Investigation Final Report

<b>Location:</b>	Alta, Iowa	<b>Accident Number:</b>	CEN23LA336
<b>Date &amp; Time:</b>	July 29, 2023, 07:30 Local	<b>Registration:</b>	N402PR
<b>Aircraft:</b>	AIR TRACTOR INC AT-402B	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Collision with terr/obj (non-CFIT)	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 137: Agricultural		

## Analysis

The pilot reported that he was completing an aerial application flight over a cultivated field. During the fourth pass, the airplane encountered a dust devil (also called a whirlwind), lost lift and impacted powerlines. Upon impact with the powerlines the rudder separated from the airplane and the airplane began a left turn. Unable to arrest the turn, the pilot reduced power and made a forced landing to the field that he was spraying. Upon touch down the left main landing gear separated from the fuselage and the airplane slid to a stop.

The airplane sustained substantial damage to the left wing, vertical stabilizer and rudder. The operator reported there were no preimpact mechanical malfunctions or failures with the airframe or the engine that would have precluded normal operation.

A review of the Federal Aviation Administration Aviation (FAA) Weather Handbook (FAA-H-8083-28) and the FAA Aeronautical Information Manual found no detailed information listed about dust devils or the potential hazards of flying through dust devils.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The airplane's encounter with a dust devil, which resulted in a loss of lift, and subsequent collision with powerlines.

## Findings

<b>Aircraft</b>	Altitude - Attain/maintain not possible
<b>Personnel issues</b>	Aircraft control - Pilot
<b>Environmental issues</b>	Dust devil/whirlwind - Ability to respond/compensate
<b>Environmental issues</b>	Dust devil/whirlwind - Effect on equipment
<b>Environmental issues</b>	Dust devil/whirlwind - Contributed to outcome

## Factual Information

### History of Flight

<b>Maneuvering-low-alt flying</b>	Other weather encounter
<b>Maneuvering-low-alt flying</b>	Collision with terr/obj (non-CFIT) (Defining event)
<b>Landing</b>	Off-field or emergency landing

### Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor; Private	<b>Age:</b>	52, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Center
<b>Other Aircraft Rating(s):</b>	Glider	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane single-engine	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 2 Waiver time limited special	<b>Last FAA Medical Exam:</b>	December 21, 2022
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	October 24, 2022
<b>Flight Time:</b>	6600 hours (Total, all aircraft), 1500 hours (Total, this make and model), 6550 hours (Pilot In Command, all aircraft), 60 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft), 8 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	AIR TRACTOR INC	<b>Registration:</b>	N402PR
<b>Model/Series:</b>	AT-402B	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2013	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Restricted (Special)	<b>Serial Number:</b>	402B-1282
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	June 15, 2023 Annual	<b>Certified Max Gross Wt.:</b>	7000 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Turbo prop
<b>Airframe Total Time:</b>	1679 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Pratt & Whitney Canada
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	PT6A-15HE
<b>Registered Owner:</b>	BARTS FLYING SERVICE INC	<b>Rated Power:</b>	650 Horsepower
<b>Operator:</b>	BARTS FLYING SERVICE INC	<b>Operating Certificate(s) Held:</b>	Agricultural aircraft (137)
<b>Operator Does Business As:</b>	BARTS FLYING SERVICE INC	<b>Operator Designator Code:</b>	PFUG

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KSLB, 1488 ft msl	<b>Distance from Accident Site:</b>	5 Nautical Miles
<b>Observation Time:</b>	07:35 Local	<b>Direction from Accident Site:</b>	149°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	9 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>	20°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.16 inches Hg	<b>Temperature/Dew Point:</b>	19°C / 18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>		<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	42.675,-95.3042(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Brown, Zane
<b>Additional Participating Persons:</b>	Jason Glass; FAA FSDO; Des Moines, IA
<b>Original Publish Date:</b>	November 16, 2023
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 4</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=192749">https://data.nts.gov/Docket?ProjectID=192749</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](#).