



Aviation Investigation Final Report

Location:	Halstad, Minnesota	Accident Number:	CEN23LA346
Date & Time:	August 2, 2023, 06:20 Local	Registration:	N45453
Aircraft:	AIR TRACTOR INC AT-502	Aircraft Damage:	Substantial
Defining Event:	Collision with terr/obj (non-CFIT)	Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot reported that after loading about 100 gallons of jet fuel and about 420 gallons of aerial spray product, he began a takeoff roll on the 2,506 ft asphalt runway. The pilot attempted to rotate the airplane with about 300 ft of runway remaining. Unable to climb out of ground effect, the pilot attempted to jettison the aerial spray product during and after takeoff. The airplane was airborne for about 200 yards before it settled into the soybean field. The airplane sustained substantial damage to the wings, empennage, and fuselage.

During an interview, the pilot stated that he took off with a tailwind with one notch of flaps and remembers over torquing the engine. He reported that he likely rotated too soon, was slow, and never got out of ground effect. The pilot reported, and a postaccident examination corroborated that, there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

Probable Cause and Findings

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

The pilot's attempt to rotate the airplane without sufficient airspeed which resulted in a lack of climb performance and impact with terrain. Contributing to the accident was the pilot's decision to attempt the takeoff with a tailwind.

Findings

Personnel issues	Lack of action - Pilot
Aircraft	Airspeed - Not attained/maintained
Aircraft	Climb capability - Attain/maintain not possible
Environmental issues	Tailwind - Effect on equipment
Environmental issues	Tailwind - Contributed to outcome

Factual Information

History of Flight

Takeoff	Collision with terr/obj (non-CFIT) (Defining event)
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Pilot Information

Certificate:	Commercial; Flight instructor	Age:	33,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Single
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	November 3, 2022
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	December 30, 2022
Flight Time:	9500 hours (Total, all aircraft), 1700 hours (Total, this make and model), 9200 hours (Pilot In Command, all aircraft), 225 hours (Last 90 days, all aircraft), 85 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AIR TRACTOR INC	Registration:	N45453
Model/Series:	AT-502	Aircraft Category:	Airplane
Year of Manufacture:	1991	Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	502-0122
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	July 7, 2023 Annual	Certified Max Gross Wt.:	9400 lbs
Time Since Last Inspection:		Engines:	1 Turbo prop
Airframe Total Time:	11012 Hrs at time of accident	Engine Manufacturer:	Pratt and Whitney
ELT:	Not installed	Engine Model/Series:	PT6-34 AG
Registered Owner:	Top Hat Aerial Applicators Inc	Rated Power:	750 Horsepower
Operator:	Airborne Custom Spraying	Operating Certificate(s) Held:	Agricultural aircraft (137)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KFAR,895 ft msl	Distance from Accident Site:	22 Nautical Miles
Observation Time:	05:53 Local	Direction from Accident Site:	218°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	110°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.91 inches Hg	Temperature/Dew Point:	19°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Halstad, MN (8MN2)	Type of Flight Plan Filed:	None
Destination:	Halstad, MN	Type of Clearance:	None
Departure Time:	06:20 Local	Type of Airspace:	Class G

Airport Information

Airport:	Aslesen 8MN2	Runway Surface Type:	Asphalt
Airport Elevation:	879 ft msl	Runway Surface Condition:	Vegetation
Runway Used:	18	IFR Approach:	None
Runway Length/Width:	2506 ft / 22 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	47.21,-96.49(est)

Administrative Information

Investigator In Charge (IIC):	Abraham, Laura
Additional Participating Persons:	Perry Ochsner; FAA FSDO; Fargo, ND Kyle Schroeder; Air Tractor; Olney, TX
Original Publish Date:	January 10, 2024
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=192785

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](#).