



Aviation Investigation Final Report

Location:	Atchison, Kansas	Accident Number:	CEN18LA350
Date & Time:	August 22, 2018, 16:00 Local	Registration:	N78417
Aircraft:	Cessna A188	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (partial)	Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The commercial pilot was conducting agricultural application operations. He reported that, after topping off the airplane with fuel and flying two loads, on the third takeoff, the airplane "would not come off the ground." He checked the engine controls, then dumped the load in an unsuccessful attempt to become airborne before the end of the runway. The airplane continued off the runway and impacted terrain, which resulted in substantial damage to the wings and fuselage. The airplane owner witnessed the attempted takeoff and reported that the engine puffed black smoke during the takeoff run. He added that the fuel servo provided a mixture that was too rich, so the pilots would reduce the mixture on the ground and then use a full rich mixture for takeoff. A visual examination of the engine did not reveal any evidence of anomalies. Although the appearance of black smoke from the engine is consistent with an overly rich fuel mixture, based on the information provided by the pilot and no anomalies found during the engine examination, the reason for the partial loss of engine power could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The partial loss of engine power for reasons that could not be determined during the postaccident examination.

Findings

Not determined	(general) - Unknown/Not determined
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Factual Information

History of Flight

Takeoff	Loss of engine power (partial) (Defining event)
Takeoff	Runway excursion

On August 22, 2018, about 1600 central daylight time, a Cessna A188 airplane, N78417, impacted terrain after departing the Amelia Earhart Airport (K59), Atchison, Kansas. The pilot was not injured, and the airplane was substantially damaged during the accident. The airplane was registered to a private individual and operated by McElwain Sprayers, LLC under the provisions of Title 14 *Code of Federal Regulations* Part 137 as an agricultural flight. Visual meteorological conditions prevailed at the time.

The pilot reported he topped off with fuel in the morning and had flown two previous loads. On the third takeoff, as the airplane was 70 to 75 mph, the airplane "would not come off the ground." He said that the mixture was full rich, and the propeller and throttle controls were full forward. He felt he could not stop on the remaining runway, so he dumped the load, in order to reduce the airplane's weight, in an attempt to get airborne. However, the airplane did not get airborne, and the airplane impacted terrain just beyond the runway. After the airplane came to rest, the pilot said he pulled the mixture control back, turned the magnetos and battery off, and exited the airplane.

The airplane's owner saw the attempted takeoff. He reported that the engine puffed black smoke during the takeoff run. He added that the fuel servo provided a mixture that was too rich, so on the ground the pilots would reduce the mixture, and then use a full rich mixture for takeoff. After the accident, he said the mixture control was back two inches, which was too far.

The responding Federal Aviator Inspector noted substantial damage to the fuselage and wings. A visual inspection of the engine did not find any abnormalities.

Pilot Information

Certificate:	Commercial	Age:	25
Airplane Rating(s):	Single-engine land	Seat Occupied:	Single
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 With waivers/limitations	Last FAA Medical Exam:	July 2, 2018
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N78417
Model/Series:	A188 B	Aircraft Category:	Airplane
Year of Manufacture:	1974	Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	18801952T
Landing Gear Type:	Tailwheel	Seats:	
Date/Type of Last Inspection:	April 17, 2018 Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	Reciprocating
Airframe Total Time:	10649.4 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	Not installed	Engine Model/Series:	IO-550D
Registered Owner:		Rated Power:	300 Horsepower
Operator:		Operating Certificate(s) Held:	Agricultural aircraft (137)
Operator Does Business As:		Operator Designator Code:	WCFG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	K59	Distance from Accident Site:	
Observation Time:	22:53 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	8 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	240°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.19 inches Hg	Temperature/Dew Point:	24°C / 15°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Atchison, KS (K59)	Type of Flight Plan Filed:	None
Destination:	Atchison, KS (K59)	Type of Clearance:	None
Departure Time:		Type of Airspace:	

Airport Information

Airport:	Amelia Earhart Airport K59	Runway Surface Type:	Asphalt
Airport Elevation:	1073 ft msl	Runway Surface Condition:	Dry
Runway Used:	34	IFR Approach:	None
Runway Length/Width:	3000 ft / 48 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	39.575832,-95.181114

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Chip Taylor; FAA FSDO; Kansas City, MO
Original Publish Date:	June 3, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=98156

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