



Aviation Investigation Final Report

Location:	Watkins, Minnesota	Accident Number:	CEN18LA311
Date & Time:	August 2, 2018, 10:35 Local	Registration:	N5523S
Aircraft:	Cessna 188	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (partial)	Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

During the agricultural application flight, the commercial pilot noticed a loss of engine speed (rpm) after completing an application pass. He subsequently observed a decrease in engine oil pressure combined with an increase in oil temperature. As he returned for a forced landing to the corn field being sprayed, the oil pressure was about 7 psi. The pilot indicated that the engine was "coughing" at that point, and he decided to shut the engine down; the loss of engine power was not catastrophic. He subsequently landed in the field, and the airplane sustained substantial damage to the right wing.

A postaccident examination revealed no evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation. Thus, 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:

A partial loss of engine power for reasons that could not be determined because a postaccident examination revealed no evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation.

Findings

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

History of Flight

Maneuvering-low-alt flying	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing

On August 2, 2018, about 1035 central daylight time, a Cessna 188 airplane, N5523S, was substantially damaged during a forced landing following a partial loss of engine power near Watkins, Minnesota. The pilot was not injured. The airplane was registered to a private individual and operated by Classic Arrow Inc. as a Title 14 *Code of Federal Regulations* Part 137 agricultural application flight. Day visual meteorological conditions prevailed. The flight was not operated on a flight plan. The local flight originated from the Litchfield Municipal Airport (LJF), Litchfield, Minnesota, about 0945.

The pilot reported that the airplane was fully fueled before the flight. After takeoff, he flew about 20 minutes to the field to be sprayed. He proceeded to survey for hazards and completed a few spray passes. He subsequently noted a loss of engine speed (rpm) after completing an application pass. He pushed the propeller control forward in an attempt to increase the engine/propeller speed which was successful for a short period of time. However, the engine speed began to decrease again, and he observed a decrease in oil pressure combined with an increase in the oil temperature. He moved all engine controls – throttle, propeller, and mixture – full forward. As he returned for a forced landing to the corn field being sprayed, the oil pressure was about 7 psi. As the airplane came over the field, the engine was "coughing." After impacting the corn, the airplane "angled up on the nose" before coming to rest. He recalled the weather conditions as "very good," with a light wind, clear sky, and more than 10 miles visibility.

The pilot informed a Federal Aviation Administration (FAA) inspector that the loss of engine power was not catastrophic in nature. Rather, the pilot observed the oil pressure dropping with the oil temperature rising and decided to pull the mixture to shut the engine off. He subsequently landed in the corn field just below the airplane.

The FAA inspector reported that the airplane sustained substantial damage to the right wing. Postaccident airframe and engine examinations conducted by the inspector revealed no anomalies that could be attributed to a preimpact failure or malfunction.

Pilot Information

Certificate:	Commercial	Age:	21,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Single
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	May 11, 2018
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	566 hours (Total, all aircraft), 124 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N5523S
Model/Series:	188 Undesignat	Aircraft Category:	Airplane
Year of Manufacture:	1966	Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	188-0023
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	February 14, 2018 Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2700 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	Not installed	Engine Model/Series:	O-470-R
Registered Owner:		Rated Power:	230 Horsepower
Operator:	On file	Operating Certificate(s) Held:	Agricultural aircraft (137)
Operator Does Business As:	Classic Arrow Inc.	Operator Designator Code:	6MTG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	LJF, 1140 ft msl	Distance from Accident Site:	14 Nautical Miles
Observation Time:	10:35 Local	Direction from Accident Site:	200°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Broken / 3300 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	70°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.05 inches Hg	Temperature/Dew Point:	18°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Litchfield, MN (LJF)	Type of Flight Plan Filed:	None
Destination:	Litchfield, MN (LJF)	Type of Clearance:	None
Departure Time:	09:45 Local	Type of Airspace:	Class G

Airport Information

Airport:	Litchfield Muni LJF	Runway Surface Type:	
Airport Elevation:	1140 ft msl	Runway Surface Condition:	Vegetation
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

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:	46.814167,-94.408607(est)

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	Raymond A Peterson; FAA Flight Standards; Minneapolis, MN
Original Publish Date:	November 6, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=97990

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