



National Transportation Safety Board Aviation Accident Final Report

Location:	Palmer, KS	Accident Number:	CEN17LA163
Date & Time:	04/17/2017, 1145 CDT	Registration:	N9533
Aircraft:	GRUMMAN SCHWEIZER G-164	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (partial)	Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The commercial pilot stated that he was conducting an aerial application flight when he heard two "pop" sounds and the engine lost power. The pilot continued flying about 1/3 of a mile before being forced to land. He turned left to avoid a fence and landed in a newly planted wheat field, during which the airplane rolled over five terraces before it spun 180° and came to a stop. The airplane sustained damage to the propeller/engine, right lower wing, and firewall. Examination of the radial engine revealed a crack on an engine cylinder located at the 3 o'clock position of the engine. According to logbook entries, an airworthiness directive regarding a visual inspection for cylinder cracks was completed at the most recent annual inspection, about 37 hours before the accident. It could not be determined if the crack was not detected during the most recent inspection or if it originated after the inspection.

Probable Cause and Findings

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

A crack in the cylinder of the radial engine, which resulted in a loss of engine power and a forced landing on unsuitable terrain.

Findings

Aircraft	Recip eng cyl section - Failure (Cause)
Environmental issues	Rough terrain - Contributed to outcome (Cause)

Factual Information

On April 17, 2017, about 1145 central daylight time, a Grumman Schweizer G-164A airplane, N9533, sustained substantial damage during a forced landing after a loss of engine power in the vicinity of Palmer, Kansas. The commercial pilot was not injured. The airplane was registered to Hunninghake Aerial Spraying LLC, Baileyville, Kansas, and the aerial application flight was being conducted under the provisions of Title 14 *Code of Federal Regulations* Part 137. Visual meteorological conditions prevailed throughout the area and a flight plan was not filed. The flight originated at 1030 from the pilot's private airstrip near Baileyville, Kansas.

According to the pilot, the aircraft was flying in a southerly direction over the application area when he heard a "pop" sound. The pilot then heard a louder "pop" sound, and the engine lost power. The pilot continued flying in a southerly direction about 1/3 of a mile before being forced to land. The pilot turned to the left to avoid a pasture fence and landed in a southeast direction in a newly planted wheat field. During the landing, the aircraft rolled over 5 terraces. Skid marks and numerous blade ground strikes were found at each terrace location. Ground scaring indicated that the propeller/engine separated from the aircraft before it spun 180° and came to a stop. The pilot exited the airplane uninjured. The right lower wing at the forward inboard spar and the engine firewall was found severely wrinkled. During the landing sequence, the hopper tank dump valve was opened and the herbicide chemical escaped.

Examination of the engine at the accident site revealed a crack on an engine cylinder located at the 3 o'clock position of the Pratt & Whitney 1340 radial engine. According to log book entries, airworthiness directive AD 99-00-02 visual inspection for cylinder cracks, was completed at the last annual inspection conducted on November 28, 2016, about 37.1 hours prior to the accident.

History of Flight

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

Pilot Information

Certificate:	Commercial	Age:	30, Male
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 Without Waivers/Limitations	Last FAA Medical Exam:	12/20/2016
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 1400 hours (Total, all aircraft), 190 hours (Total, this make and model), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	GRUMMAN SCHWEIZER	Registration:	N9533
Model/Series:	G-164	Aircraft Category:	Airplane
Year of Manufacture:	1973	Amateur Built:	No
Airworthiness Certificate:	Restricted	Serial Number:	1188
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	11/28/2016, Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:	364 Hours	Engines:	1 Reciprocating
Airframe Total Time:	12020 Hours at time of accident	Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	1340-S3H1G
Registered Owner:	Hunninghake Aerial Spaying LLC	Rated Power:	650 hp
Operator:	Hunninghake Aerial Spaying LLC	Operating Certificate(s) Held:	Agricultural Aircraft (137)
Operator Does Business As:		Operator Designator Code:	6HAG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	CNK, 1487 ft msl	Distance from Accident Site:	25 Nautical Miles
Observation Time:	1055 CDT	Direction from Accident Site:	270°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	110°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.15 inches Hg	Temperature/Dew Point:	18° C / 11° C
Precipitation and Obscuration:			
Departure Point:	Baileyville, KS	Type of Flight Plan Filed:	None
Destination:	Palmer, KS	Type of Clearance:	None
Departure Time:	1030 CDT	Type of Airspace:	Class E

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:	39.561944, -97.188056 (est)

Administrative Information

Investigator In Charge (IIC):	Alexander Lemishko	Report Date:	04/13/2020
Additional Participating Persons:	Jeff Smth; FAA FSDO; Wichita, KS		
Publish Date:	04/13/2020		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=95048		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).