



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Winkelman, AZ	<b>Accident Number:</b>	WPR15LA254
<b>Date &amp; Time:</b>	09/01/2015, 0930 MST	<b>Registration:</b>	N74ES
<b>Aircraft:</b>	RAUDENBUSH ERNIE LANCAIR SUPER ES	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Loss of engine power (partial)	<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The commercial pilot stated that, about 1 hour into the cross-country personal flight, he observed a "slight" loss of engine power and "fluctuating" engine exhaust gas temperature indications. Shortly thereafter, the engine experienced a significant loss of power, and the pilot subsequently chose to perform a forced landing to a rocky plateau, during which the airplane sustained substantial damage. Following the pilot's egress, the airplane was consumed by a postimpact fire. The engine was examined and disassembled following the accident, and it displayed significant thermal damage. No anomalies were observed 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: A partial loss of engine power for reasons that could not be determined because postaccident examination of the engine revealed no anomalies.

## Findings

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Not determined	Not determined - Unknown/Not determined (Cause)
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## Factual Information

On September 1, 2015, about 0930 mountain standard time, a Lancair Super ES, N74ES, was destroyed during a forced landing and subsequent post-impact fire after experiencing a loss of engine power in cruise flight near Winkelman, Arizona. The private pilot was not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the flight, which departed El Paso International Airport (ELP), El Paso, Texas, about 0820, and was destined for Glendale Municipal Airport (GEU), Glendale, Arizona. The personal flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

The pilot stated that his preflight inspection, engine run up, and departure were uneventful with no anomalies noted. He departed ELP with about 50 gallons of fuel onboard for the 316-nautical-mile flight, and climbed the airplane to a cruise altitude of 8,500 feet mean sea level (msl). About 1 hour into the flight, the pilot noted a "slight" loss of engine power and observed the exhaust gas temperature (EGT) indications from all 6 engine cylinders "fluctuating." The pilot adjusted the fuel mixture, and stated that about 30 seconds later, the engine stopped producing "most" of its power and was "struggling to stay running." He then manipulated the throttle, mixture, and propeller controls, but none of these inputs produced any response from the engine. The pilot established the airplane's best glide speed and elected to land the airplane on a rocky plateau. The airplane came to rest upright and the pilot egressed. The airplane was subsequently consumed by a post-impact fire.

The pilot held a commercial pilot certificate with ratings for rotorcraft-helicopter and instrument helicopter, and a private pilot certificate with a rating for airplane single engine land. He did not hold a current Federal Aviation Administration (FAA) medical certificate. The pilot reported 1,650 total hours of flight experience, of which 240 hours were in the accident airplane make and model.

The experimental amateur-built airplane was issued an FAA airworthiness certificate in 2000. It was equipped with a Continental IO-550 series, 310-hp reciprocating engine. The airplane's most recent annual inspection was completed on October 24, 2014. At the time of the accident, the airframe and engine had accumulated about 620 total hours of operation. According to the pilot, the engine underwent extensive maintenance about 100 hours prior to the accident, including honing of the cylinder barrels and replacement of the crankshaft and camshaft; however, despite repeated requests, the pilot did not provide documentation of this maintenance.

The engine was examined on March 13, 2016. The engine remained attached to its mount, which was separated from the airframe. The engine and all components exhibited significant thermal damage, and all steel components were rusted. The crankshaft could not be rotated due to thermal damage. The propeller remained attached to the crankshaft, and all three blades exhibited s-bending and leading edge damage. The exhaust system remained attached to the cylinders, and the intake filter and tube upstream of the throttle body were not observed.

The right magneto remained attached to the engine, and the left magneto mounting location contained a cover plate, indicative of an electronic ignition system; however, the ignition control was not observed and was presumed destroyed by the post-impact fire. All fuel lines remained attached to their respective fittings, and the housing around the fittings was partially melted away. The fuel metering unit and throttle body fittings were secure. The throttle and mixture cables remained attached to their respective levers; however, the controls could not be

manipulated due to thermal damage.

All six cylinders remained attached to the crankcase and exhibited little-to-no combustion deposits; consistent with prolonged lean fuel/air mixture operation. Numerous cylinder through-bolts were displaced from the engine case, and several through-bolt nuts and cylinder attach nuts were fractured; however, the crankcase and main bearings did not display any evidence that indicated that the through-bolts were displaced prior to the post-crash fire.

## History of Flight

Enroute-cruise	Loss of engine power (partial) (Defining event)
Landing	Off-field or emergency landing

## Pilot Information

Certificate:	Commercial; Military; Private	Age:	39, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without Waivers/Limitations	Last Medical Exam:	04/15/2010
Occupational Pilot:	No	Last Flight Review or Equivalent:	11/14/2013
Flight Time:	1650 hours (Total, all aircraft), 240 hours (Total, this make and model), 1470 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	RAUDENBUSH ERNIE	Registration:	N74ES
Model/Series:	LANCAIR SUPER ES	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	KIT74
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	10/24/2014, Annual	Certified Max Gross Wt.:	3500 lbs
Time Since Last Inspection:	20 Hours	Engines:	1 Reciprocating
Airframe Total Time:	620 Hours	Engine Manufacturer:	CONT MOTOR
ELT:	C91 installed, not activated	Engine Model/Series:	IO-550 SERIES
Registered Owner:	On file	Rated Power:	310 hp
Operator:	On file	Air Carrier Operating Certificate:	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	KCGZ, 1462 ft msl	Observation Time:	1635 UTC
Distance from Accident Site:	56 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	266°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	28° C / 18° C
Lowest Ceiling:	None	Visibility	
Wind Speed/Gusts, Direction:	4 knots, 80°	Visibility (RVR):	
Altimeter Setting:	29.95 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	EL PASO, TX (ELP)	Type of Flight Plan Filed:	None
Destination:	GLENDALE, AZ (GEU)	Type of Clearance:	VFR Flight Following
Departure Time:	0820	Type of Airspace:	Class E

## Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor		

## Administrative Information

Investigator In Charge (IIC):	Allison N Diaz	Adopted Date:	07/11/2016
Additional Participating Persons:	Johnny C Portillo; FAA/FSDO; Scottsdale, AZ Nicole L Charnon; Continental Motors Inc; Mobile, AL		
Publish Date:	07/11/2016		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=91905">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=91905</a>		

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