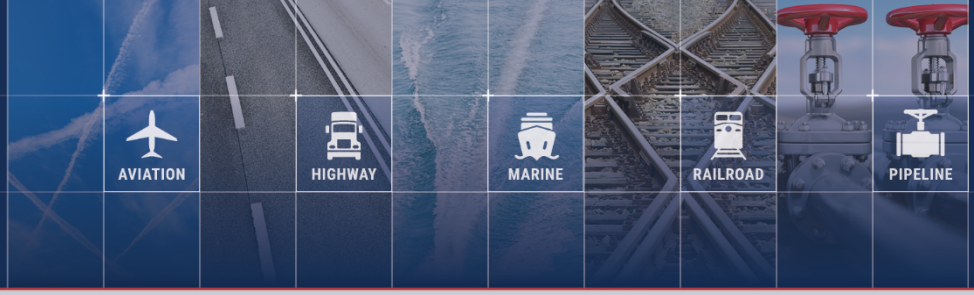

Aviation Investigation Final Report

Location:	Palmetto, Florida	**Accident Number:**	ERA13LA119
Date & Time:	January 27, 2013, 09:30 Local	**Registration:**	N27CE
Aircraft:	SHOEMAKER JAMES B KR-2	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that, before departure, he added 5 gallons of fuel, which increased the total amount of fuel in the tank to between 14 and 15 gallons. After engine start, he taxied to the approach end of the runway where he performed an engine run-up. He reported no discrepancies. He taxied onto the runway, applied full power, and reported achieving full rpm. While climbing between 300 and 400 feet, the engine suddenly quit, and the propeller stopped. The pilot maneuvered the airplane for a forced landing in a soft field. The airplane impacted the ground in a right- wing-low attitude, which caused the engine and fuel tank to separate. No fuel spillage or smell was noted at the accident scene, and only 2 ounces of fuel were found in the separated fuel tank. Postaccident examination of the engine revealed no fuel in the carburetor and only 1 cc of fuel in the fuel strainer. However, the reason for the lack of fuel could not be determined. Further examination of the engine revealed powertrain continuity and no evidence of preimpact failures or malfunctions 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 total loss of engine power for undetermined reasons, which resulted in a forced landing.

Findings

Environmental issues	(general) - Contributed to outcome
Aircraft	Fuel - Fluid level

Factual Information

History of Flight

Initial climb	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

On January 27, 2013, about 0930 eastern standard time, an experimental, amateur-built, Shoemaker KR-2, N27CE, registered to and operated by a private individual, was substantially damaged during a forced landing in a field near Palmetto, Florida, shortly after takeoff from Airport Manatee (48X). Visual meteorological conditions prevailed at the time and no flight plan was filed for the 14 Code of Federal Regulations (CFR) Part 91 personal, local flight from 48X. The private rated pilot, the sole occupant, sustained serious injuries. The flight originated about 1 minute earlier from 48X.

The pilot stated that before departure he added 5 gallons of fuel from a container to the aircraft's 16 gallon fuel tank which nearly filled it bringing the total amount of fuel in the tank to between 14 and 15 gallons. He further reported that it is his practice to always fill the fuel tank before departure, and he typically flies 1 hour. He started the engine and taxied to runway 07, where he performed an engine run-up before takeoff. No discrepancies were reported and he checked the gauges before takeoff and everything was satisfactory.

He applied full throttle and noted the rpm was 3,300 (typical rpm for full throttle though maximum red line rpm is 3,600). He accelerated to 60 miles-per-hour (mph) and rotated, then while flying just above the runway surface accelerated to 80 mph and then began to climb. When the flight was between 300 and 400 feet in a climb attitude, the engine quit suddenly and the propeller stopped; there was no vibration. He pushed the nose forward to maintain airspeed and avoid stalling the airplane and maneuvered the airplane for a forced landing in a field. Before touchdown he maneuvered to avoid a cow ahead and impacted the ground in a right wing low attitude. He stated that the ground was soggy and lumpy, and it is likely that the outcome would have been the same because of the ground condition if he had not had to maneuver to avoid the cow. He stated that he was wearing the seatbelt and shoulder harness and did not recall his speed at touchdown. He was taken to a hospital for treatment of his injuries and remained hospitalized for 5 to 6 days.

Inspection of the accident site by an FAA inspector-in-charge (FAA-IIC) about 2 hours after the accident revealed the fuel tank and engine were separated. The FAA inspector also reported that neither he nor first responders noted evidence of fuel spillage or the smell of fuel. Approximately 2 ounces fuel were recovered from the separated aluminum fuel tank. The first responder who moved the aircraft's fuel tank away from the wreckage reported to the FAA inspector that it did not appear to contain any fuel. The wreckage was recovered for further

examination.

Two days after the accident the FAA-IIC interviewed the pilot while hospitalized and the pilot informed him that the engine quit during climb out at 300 feet. The FAA-IIC asked the pilot about the maintenance records and record of the last condition inspection and was advised he did not know the whereabouts of them and did not conduct annual condition inspections in accordance with the aircraft operating limitations. The pilot also stated that he did not comply with the Flight Review requirements of 14 CFR Part 61.56, and he used 1 of 2 five-gallon containers in his hangar to fuel the airplane.

Following the interview the FAA inspector went back to the pilot's hangar and observed 2 five-gallon containers. One container was full of fuel and the other was "'bone' dry."

Inspection of the engine was performed following recovery of the airplane by an FAA airworthiness inspector. The inspector noted that the propeller blades were broken off at the propeller hub. The carburetor was removed and disassembled which revealed no fuel remaining inside. The fuel strainer bowl was removed and about 1 cc of fuel was noted; moderate contamination was also noted. The fuel supply line from the fuel tank was torn off about 6 inches aft of the engine firewall consistent with fuel tank separation from the airplane. Rotation of the remaining portion of the propeller by hand revealed power train continuity. The inspector also noted that visual inspection of the engine revealed no evidence of preimpact failure or malfunction.

Pilot Information

Certificate:	Private	**Age:**	83,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	None None	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	2500 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	SHOEMAKER JAMES B	**Registration:**	N27CE
Model/Series:	KR-2	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	81
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	December 5, 2012 Condition	**Certified Max Gross Wt.:**	1200 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	1000 Hrs as of last inspection	**Engine Manufacturer:**	REVMASTER
ELT:	Not installed	**Engine Model/Series:**	2100
Registered Owner:	MASSA EUGENE M	**Rated Power:**	65 Horsepower
Operator:	MASSA EUGENE M	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SPG,7 ft msl	**Distance from Accident Site:**	
Observation Time:	09:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	6 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	60°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.3 inches Hg	**Temperature/Dew Point:**	18°C / 15°C
Precipitation and Obscuration:	N/A - None - Haze		
Departure Point:	Palmetto, FL (48X)	**Type of Flight Plan Filed:**	None
Destination:	Palmetto, FL (48X)	**Type of Clearance:**	None
Departure Time:	09:29 Local	**Type of Airspace:**	

Airport Information

Airport:	Airport Manatee 48X	**Runway Surface Type:**	
Airport Elevation:	27 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	27.648332,-82.509719(est)

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	Dave Bear; FAA/FSDO; Tampa, FL Michael Singleton; FAA/FSDO; Tampa, FL
Original Publish Date:	December 11, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=86089