Aviation Investigation Final Report

Location:	Torrington, Wyoming	**Accident Number:**	WPR11LA346
Date & Time:	July 24, 2011, 18:40 Local	**Registration:**	N4911K
Aircraft:	Ryan NAVION A	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	4 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that he leaned the mixture while en route, but could not find the peak performance. He set the mixture control to what he thought it was appropriate for 5,000 to 6,000 feet altitude. As he entered the landing pattern at his destination, he lowered the landing gear and prepared for landing. As he reduced the throttle position, the engine lost all power, and the descent rate increased. The pilot determined that the airplane would not glide to a runway and maneuvered to an open area. The airplane touched down hard, and the landing gear collapsed. The airplane sustained substantial damage to the firewall and fuselage. Postaccident examination of the airframe and engine revealed no mechanical malfunctions or failures that would have precluded normal operation. The carburetor was removed and connected to a test cell. The unit was found out of limits at the low end of its operating range. Thus, with the fuel mixture leaned and a subsequent reduction in the power for landing, a temporary disruption of the fuel flow caused the engine to sputter and lose power.

Probable Cause and Findings

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

The carburetor's failure to meet its operating limits at the low range, which resulted in a loss of engine power when the pilot reduced power for landing.

Findings

Aircraft	Fuel control/carburetor - Related operating info
Aircraft	Descent rate - Related operating info

Factual Information

History of Flight

Approach-VFR pattern base	Loss of engine power (total) (Defining event)
Landing	Off-field or emergency landing

On July 24, 2011, about 1840 mountain daylight time, a Ryan Navion A, N4911K, made an off airport forced landing following a loss of engine power at Torrington, Wyoming. The pilot/owner was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The private pilot and three passengers sustained minor injuries; the airplane sustained substantial damage to the firewall and fuselage from impact forces. The cross-country personal flight departed North Platte, Nebraska, about 1635, with a planned destination of Torrington. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot stated that about 30 to 45 minutes from Torrington he tried to lean the mixture, but could not find peak. He continued to lean the mixture looking for engine roughness, but become concerned that he would hit cut off, and stop the engine. He set the mixture control to where he thought it was appropriate for 5,000 to 6,000 feet, which was about 1/2 inch extended from full rich.

The pilot reported that he descended the airplane over the airport, and flew upwind along the runway to check the wind sock and for obstructions. At the end of runway 010 about 1,000 feet above ground level (agl), he made a left turn to the downwind leg with the landing gear and flaps down. After he leveled the airplane, he started to reduce the throttle, and the engine lost power.

The pilot lowered the airplane's nose, and thought that the airplane could glide to runway 20. The airspeed got lower so he lowered the nose some more, but realized that the airplane would not make the other runway. As the airplane rapidly descended, he maintained a wings level attitude, and flew straight ahead toward open terrain. Just before impact, he flared the airplane, and it touched down hard onto its main wheels followed by the nose wheel. The propeller contacted the ground, and both main landing gear collapsed. The airplane skidded about 80 feet before it stopped, and everyone exited the airplane.

The airframe and engine were examined at Beegle's Aircraft in Greeley, Colorado, on August 24, 2011. The carburetor was examined at Front Range Fuel Systems in Loveland, Colorado, on August 26, 2011. Detailed reports of the exams are part of the public docket for this accident.

Airframe Exam

The wings had been removed during recovery. The fuselage did not have any signs of oil along its sides. The bottom of the nose cowl sustained inward crush damage at the air filter, which was packed with dirt and grass. No preimpact mechanical malfunction or failure was found with the airframe that would have precluded normal operation.

Engine Exam

Postaccident examination of the engine was conducted with the engine while in place on the airframe. At the conclusion of the examination, no mechanical malfunctions or failures were found that would have precluded normal operation.

Carburetor Exam

The carburetor was a Bendix P55C, part number 380223-8, serial number 723670. As the testing technician removed fittings from the carburetor to set it up on the test bench, fluid dripped out of all fittings. The carburetor was connected to the test cell. The unit was out of limits at the low end of the test flows. The technician stated that if the pilot had the airplane leaned and pulled the throttle back, there could be a temporary disruption of the fuel flow. This could cause the engine to sputter and lose power.

Pilot Information

Certificate:	Private	**Age:**	52
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	May 4, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 11, 2010
Flight Time:	410 hours (Total, all aircraft), 23 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Ryan	**Registration:**	N4911K
Model/Series:	NAVION A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	NAV-4-1911
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	March 3, 2011 Annual	**Certified Max Gross Wt.:**	2850 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	5371 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed	**Engine Model/Series:**	O-470-13
Registered Owner:	LIDDLE CABLE CO INC	**Rated Power:**	240 Horsepower
Operator:	LIDDLE CABLE CO INC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KTOR,4207 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	18:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	140°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.1 inches Hg	**Temperature/Dew Point:**	30°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	North Platte, NE (LBF)	**Type of Flight Plan Filed:**	None
Destination:	Torrington, WY (TOR)	**Type of Clearance:**	VFR flight following
Departure Time:	16:35 Local	**Type of Airspace:**	

Airport Information

Airport:	Torrington TOR	**Runway Surface Type:**	Asphalt
Airport Elevation:	4207 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	10	**IFR Approach:**	None
Runway Length/Width:	5703 ft / 75 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	3 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 Minor	**Latitude, Longitude:**	42.064445,-104.152778(est)

Administrative Information

Investigator In Charge (IIC):	Plagens, Howard
Additional Participating Persons:	Mike Maglione; FAA FSFO; Casper, WY
Original Publish Date:	April 10, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=81214