Aviation Investigation Final Report

Location:	Logan, Utah	**Accident Number:**	DEN03LA134
Date & Time:	July 18, 2003, 17:50 Local	**Registration:**	N8036D
Aircraft:	Piper PA-32R-301	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	6 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

According to the pilot's statement, he arrived at Logan at 1830. When he checked the weather, the temperature was 90 degrees and the calculated density altitude was approximately 7,000 feet. There was no wind, but an airport employee suggested using runway 35. Although the pilot had some difficulty starting the engine, all pre take-off checks were normal, and the airplane ran fine. During the taxi to runway 35, the pilot noticed that the wind was from 050 degrees at 15 knots, and he elected to use runway 17. The pilot stated that he leaned the mixture to 2,200 rpm, accelerated to 80 knots, and rotated. Following rotation, the airplane continued to accelerate, but would only climb approximately 20 to 25 feet above the runway. The pilot adjusted the mixture and attempted to add more power but the engine would not respond. With no runway remaining, he continued on the departure heading and made a forced landing in a field just past the end of the runway. An examination of the airplane's systems revealed that the airplane was full of fuel, the throttle was at idol, the mixture was lean, the propeller was at high rpm, and the flaps were in the retracted position. Although the landing gear selector lever was in the "up" position, the ground scars at the initial impact point, and the damage to the landing gear, were consistent with the landing gear being in the extended position. An examination of the engine revealed that all the spark plugs were worn in a "football" shape. The shielding was exposed on the number 5 cylinder's bottom spark plug wire. A "small hole, approximate size of a pencil tip" was located on the manifold pressure tube for the number 5 cylinder. The propeller pitch control was found full forward and in contact with the pedestal stop prior to the governor stop, which would "restrict its travel to full rpm by 1/8 inch. With the engine and controls in this condition, it would not be possible for the engine to make the take-off rpm of 2,700.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the loss of engine power due to partial mechanical failure, which resulted in a forced landing. Contributing factors include the pilot's improper preflight planning/preparation, the improper rigging of the propeller governor control, the high density altitude conditions, and the tailwind.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (C) ENGINE ASSEMBLY - FAILURE,PARTIAL
2. (F) PROPELLER GOVERNOR CONTROL - OTHER
3. EXHAUST SYSTEM,MANIFOLD/PIPE - LEAK
4. IGNITION SYSTEM,IGNITION HARNESS - FRAYED
5. IGNITION SYSTEM,SPARK PLUG - WORN
6. (F) PREFLIGHT PLANNING/PREPARATION - IMPROPER - PILOT IN COMMAND
7. (F) MIXTURE - IMPROPER USE OF - PILOT IN COMMAND
8. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE
9. (F) WEATHER CONDITION - TAILWIND

Occurrence #2: FORCED LANDING
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
10. (F) PROPER CLIMB RATE - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings
11. TERRAIN CONDITION - OPEN FIELD

12. TERRAIN CONDITION - GRASS
13. LIGHT CONDITION - DUSK

Factual Information

On July 18, 2003, at 1750 mountain daylight time, a Piper PA-32R-301, N8036D, operated by the pilot, was substantially damaged when it impacted terrain during a forced landing following take-off from Logan-Cache Airport (LGU), Logan, Utah. The private pilot, and his 5 passengers were not injured. Visual meteorological conditions prevailed. No flight plan had been filed for this personal flight being conducted under Title 14 CFR Part 91. The flight was originating at the time of the accident.

According to the pilot's statement, he arrived at Logan at 1830. When he checked the weather, the temperature was 90 degrees and the calculated density altitude was approximately 7,000 feet. There was no wind, but an airport employee suggested using runway 35. Although the pilot had some difficulty starting the engine, all pre take-off checks were normal, and the airplane ran fine. During the taxi to runway 35, the pilot noticed that the wind was from 050 degrees at 15 knots, and he elected to use runway 17. The pilot stated that he leaned the mixture to 2,200 rpm, accelerated to 80 knots, and rotated. Following rotation, the airplane continued to accelerate, but would only climb approximately 20 to 25 feet above the runway. The pilot adjusted the mixture and attempted to add more power but the engine would not respond. With no runway remaining, he continued on the departure heading and made a forced landing in a field just past the end of the runway. The pilot said that he "did not have time to lower the landing gear."

The pilot stated that during the pre-takeoff checks, there was a 200 rpm drop for each magneto check, the manifold pressure was set to 25 inches, and the oil pressure was slightly higher than normal. The pilot also stated that, on July 15, 2003, just prior to his flight to Logan, he refueled the airplane at Montgomery Field in San Diego, California. He had difficulty refueling because the self-serve pump kept shutting off. An airport employee mentioned that the pump does that when the filter is dirty. The pilot requested fuel, and a fuel truck was sent out to put 30 gallons of fuel in each side. The pilot said that prior to departing Montgomery Field, he noticed a slight amount of water in his right tank.

One witness stated that he heard the engine "backfire" as it was being started. A second witness stated that the airplane['s engine] sounded like it was "missing" or running rough. As if flew over the road, "almost striking traffic." A third witness stated that the airplane "appeared to have taken off with a 10 to 20 knot tail wind."

For July 18, 2003, the last recorded weather observations for Logan was taken at 1357. The recorded data was; wind, 6 mph; visibility, 10 statute miles; temperature, 98 degrees F.; dew point, 48 degrees F; altimeter setting, 30.15. At that time, the calculated density altitude was 6,973 feet. There was no recorded wind direction.

According to an FAA airworthiness inspector, the airplane struck the ground approximately 1/4 mile from the departure end of runway 17. The airplane rotated clockwise approximately 140 degrees, and slid about 115 feet from the initial impact point. The impact tore off the right main landing gear, displaced the airplane's right wing, collapsed the nose landing gear, and buckled the firewall. An examination of the airplane's systems revealed that the airplane was full of fuel, the throttle was at idol, the mixture was lean, the propeller was at high rpm, and the flaps were in the retracted position. Although the landing gear selector lever was in the "up" position, the ground scars at the initial impact point, and the damage to the landing gear, were consistent with the landing gear being in the extended position. An examination of the engine revealed that all the spark plugs were worn in a "football" shape. The shielding was exposed on the number 5 cylinder's bottom spark plug wire. A "small hole, approximate size of a pencil tip" was located on the manifold pressure tube for the number 5 cylinder. The propeller pitch control was found full forward and in contact with the pedestal stop prior to the governor stop, which would "restrict its travel to full rpm by 1/8 inch. With the engine and controls in this condition, it would not be possible for the engine to make the take-off rpm of 2,700.

Pilot Information

Certificate:	Private; Student	**Age:**	60,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	July 1, 2002
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	April 27, 2003
Flight Time:	1300 hours (Total, all aircraft), 700 hours (Total, this make and model), 1270 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8036D
Model/Series:	PA-32R-301	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	32R8213021
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	September 11, 2002 Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	33 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2216.2 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-540
Registered Owner:	Robert J. Kish	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dusk
Observation Facility, Elevation:	KLGU,4457 ft msl	**Distance from Accident Site:**	
Observation Time:	13:57 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots / 18 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	31.14 inches Hg	**Temperature/Dew Point:**	37°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Logan, UT (LGU)	**Type of Flight Plan Filed:**	None
Destination:	(LGU)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class E

Airport Information

Airport:	Logan-Cache LGU	**Runway Surface Type:**	Asphalt
Airport Elevation:	4457 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	17	**IFR Approach:**	Unknown
Runway Length/Width:	5931 ft / 100 ft	**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	5 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	6 None	**Latitude, Longitude:**	41.719558,-111.840728(est)

Administrative Information

Investigator In Charge (IIC):	Mayer, Brannon
Additional Participating Persons:	Dale Ogden; Salt Lake City FAA FSDO; Salt Lake City, UT
Original Publish Date:	March 30, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=57548