

**NATIONAL TRANSPORTATION SAFETY BOARD
PILOT/OPERATOR AIRCRAFT ACCIDENT/INCIDENT REPORT**

This form to be used for reporting civil and public use aircraft accidents and incidents

BASIC INFORMATION

Accident/Incident Location Nearest City/Place: <u>Strasburg</u> State: <u>CO</u> ZIP: <u>80136</u> Country: <u>U.S</u> Latitude: <u>39.46N</u> (dd:mm:ss N/S) Longitude: <u>104.17.0W</u> (ddd:mm:ss E/W)		Date/Time Date: <u>11/20/2014</u> Local Time: <u>2040</u> <i>mm/dd/yyyy</i> Time Zone: <u>mst</u>	
Phase of Operation ☐ Standing ☐ Takeoff (incl. initial climb) ☐ Cruise ☐ Hover ☐ Taxi ☐ Climb ☐ Maneuvering ☐ Other ☒ Descent ☐ Landing ☐ Approach ☐ Unknown		Collision with Other Aircraft ☐ Midair ☐ On-ground ☐ None	Altitude of In-Flight Occurrence <u>8,500</u> ft MSL

AIRCRAFT INFORMATION

Manufacturer: <u>piper</u> Model: <u>PA28-181</u> Serial Number: <u>28-7790381</u> Registration Number: <u>N2204Q</u> Amateur-built: ☐ Yes ☒ No	Max Gross Weight: <u>2,550</u> lbs Weight at Time of Accident/Incident: <u>1,981</u> lbs Location of Center of Gravity at Time of Accident/Incident: <u>85.85</u> inches from ☐ nose or ☒ datum -or- _____ Percent Mean Aerodynamic Cord (% MAC)
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Category of Aircraft ☒ Airplane ☐ Balloon ☐ Blimp/Dirigible ☐ Glider ☐ Gyrocraft ☐ Helicopter ☐ Powered lift ☐ Ultralight ☐ Unknown	Type of Airworthiness Certificate <i>(Check all that apply)</i> <table style="width: 100%;"> <tr> <td style="vertical-align: top;"> Standard ☒ Normal ☐ Utility ☐ Acrobatic ☐ Transport </td> <td style="vertical-align: top;"> Special ☐ Restricted ☐ Limited ☐ Provisional ☐ Experimental ☐ Special Flight ☐ Light Sport </td> </tr> </table>	Standard ☒ Normal ☐ Utility ☐ Acrobatic ☐ Transport	Special ☐ Restricted ☐ Limited ☐ Provisional ☐ Experimental ☐ Special Flight ☐ Light Sport	Number of Seats: <u>4</u> If Large Aircraft, how many seats for: Flight Crew: _____ Cabin Crew: _____ Passengers: _____	Landing Gear ☐ Retractable Check any additional landing gear configuration that applies: ☒ Tricycle ☐ Tailwheel ☐ Amphibian ☐ High Skid ☐ Emergency Float ☐ Skid ☐ Float ☐ Ski ☐ Hull ☐ Ski/Wheel ☐ Unknown
Standard ☒ Normal ☐ Utility ☐ Acrobatic ☐ Transport	Special ☐ Restricted ☐ Limited ☐ Provisional ☐ Experimental ☐ Special Flight ☐ Light Sport				

Type of Maintenance Program ☒ Annual ☐ Conditional (Amateur-built only) ☐ Manufacturer's Inspection Program ☐ Other Approved Inspection Program (AAIP) ☐ Continuous Airworthiness ☐ Other, specify: _____	Last Inspection Type ☐ 100 Hour ☐ Continuous Airworthiness ☐ AAIP ☐ Conditional Inspection ☒ Annual ☐ Unknown	Date Last Inspection: <u>07/23/14</u> <i>mm/dd/yyyy</i> Airframe Total Time: <u>7,464</u> hrs hours measured at (check one) ☒ Last Inspection ☐ Time of Accident/Incident
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IFR Equipped ☒ Yes ☐ No ☐ Unknown	Stall Warning System Installed ☒ Yes ☐ No ☐ Unknown	Type of Fire Extinguishing System ☒ None ☐ Specify _____
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ELT Installed ELT Activated ☒ Yes ☐ No ☐ Yes ☐ No	ELT Manufacturer: <u>Artex</u> Model/Series: <u>200</u> Serial Number: _____ Battery Type: <u>acr elect, ELT200, pn 452-3063</u> Battery Exp. Date: <u>07/2017</u>
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Engine Type ☒ Reciprocating ☐ Turbo Jet ☐ Turbo Shaft ☐ Turbo Fan ☐ Turbo Prop ☐ Unknown	Reciprocating Fuel System Type ☒ Carburetor ☐ Fuel Injected	Propeller ☒ Fixed Pitch ☐ Controllable Pitch Manufacturer: <u>sensenich</u> Model: <u>30758K</u>
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Engine	Engine Manufacturer	Engine Model/Series	Manufacturer's Serial Number	Date of Mfg. <i>mm/dd/yyyy</i>	Engine Rated Power Measured as (check one) ☒ Horsepower or ☐ lbs of Thrust	Total Time (hours)	Time Since Inspection (hours)	Time Since Overhaul (hours)
Eng. 1	lycoming	0-360-A4M	RL-34261-36A		180	3,650	73	1,635
Eng. 2								
Eng. 3								
Eng. 4								

Description of Damage to Aircraft and Other Property (use additional sheet if necessary)

Aircraft came to rest on its top. The right wing was substantially damaged. Fuselage remained intact with minimal damage. Prop was bent as it struck the power lines just before the plane impacted the ground. Left wing damaged but remained intact. Vertical Stabilizer was bent. Nose gear was bent. Windshield broken. Power lines were damaged. There was no other property damage noted.

AIRPORT INFORMATION (If the accident/incident occurred on approach, takeoff or within 3 miles of an airport, complete this section)

Airport Identifier: _____ Distance From Airport Center: _____ SM

Airport Name: _____ Direction From Airport: _____ degrees MAG

Proximity to Airport ☐ Off Airport/Airstrip ☐ On Airport ☐ On Airstrip Airport Elevation: _____ ft. MSL**Approach Segment** (Select one)☐ On Instrument Approach ☐ Landing ☐ Base leg ☐ Final ☐ Go Around
☐ Crosswind ☐ Downwind ☐ Low Approach ☐ Aborted Landing (after touchdown)**IFR Approach** (Check all that apply)

☐ None	☐ PAR	☐ MLS	☐ Practice
☐ ADF/NDB	☐ Sideslip	☐ LDA	☐ GPS
☐ SDF	☐ ILS	☐ ASR	☐ Loran
☐ VOR/TVOR	☐ Localizer Only	☐ Visual	☐ Unknown
☐ VOR/DME	☐ LOC-back course	☐ Contact	
☐ TACAN	☐ RNAV	☐ Circling	

VFR Approach (Check all that apply)

☐ None	☐ Stop and Go
☐ Traffic Pattern	☐ Touch and Go
☐ Straight-In	☐ Simulated Forced Landing
☐ Valley/Terrain Following	☐ Forced Landing
☐ Go Around	☐ Precautionary Landing
☐ Full Stop	☐ Unknown

Runway Information

Runway ID: _____ (L/R/C) Length: _____ ft Width: _____ ft

Runway/Landing Surface (Check all that apply)

☐ Asphalt	☐ Grass/Turf	☐ Macadam	☐ Water
☐ Concrete	☐ Gravel	☐ Metal/Wood	☐ Unknown
☐ Dirt	☐ Ice	☐ Snow	

Condition of Runway/Landing Surface (Check all that apply)

☐ Dry	☐ Snow-Compacted	☐ Water-Calm
☐ Holes	☐ Snow-Crusted	☐ Water-Choppy
☐ Ice Covered	☐ Snow-Dry	☐ Water-Glassy
☐ Rough	☐ Snow-Wet	☐ Wet
☐ Rubber Deposits	☐ Soft	☐ Unknown
☐ Slush Covered	☐ Vegetation	

FLIGHT ITINERARY INFORMATION**Last Departure Point**Airport ID: KITRCity: BurlingtonState: COCountry: U.S.**Time of Departure**Time: 20:05Time Zone: mst**Destination**Airport ID: kbjcCity: BroomfieldState: COCountry: U.S.**Type Flight Plan Filed**

☐ None	☐ VFR/IFR
☐ Company VFR	☐ IFR
☐ Military VFR	☐ Unknown
☒ VFR	

Activated? ☒ Yes ☐ No**Type of ATC Clearance/Service** (Check all that apply)

☐ None	☐ Special VFR	☐ Special IFR	☒ VFR Flight Following	☐ Cruise
☐ VFR	☐ IFR	☐ VFR On Top	☐ Traffic Advisory	☐ Unknown / NA

Airspace where the accident/incident occurred (Check all that apply)

☐ Class A	☐ Class E	☐ Prohibited Area	☐ Jet Training Area	☐ Special
☐ Class B	☒ Class G	☐ Restricted Area	☐ TRSA	☐ Air Traffic Control Area
☐ Class C	☐ Demo Area	☐ Military Operations Area (MOA)	☐ FAR 93	☐ Unknown
☐ Class D	☐ Warning Area	☐ Airport Advisory Area		

Aircraft Load Description (Check all that apply)

☒ None	☐ Towing Glider	☐ Parachutists	☐ Livestock
☐ Passengers	☐ Towing Banner	☐ Water	☐ Unknown
☐ Cargo	☐ Other External	☐ Chemical/Fertilizer/Seeds	

FUEL & SERVICES INFORMATION**Fuel on Board at Last Takeoff**

(convert from pounds, as necessary)

_____ 16 Gallons

Fuel Type

☐ 80/87	☐ 115/145	☐ JP3	☐ Other, specify _____
☒ 100 Low Lead	☐ Jet A	☐ JP4	
☐ 100/130	☐ Automotive	☐ JP5	

Other Services, if Any, Prior to Departure

EVACUATION OF AIRCRAFTWas an emergency evacuation of the aircraft performed? ☒ Yes ☐ No**Method of Exit** – Describe how the occupants exited and how many occupants evacuated each location

the aircraft came to rest on its top. The door was open. the pilot released his seatbelt and crawled out of the aircraft and then immediately turned his attention to assisting, as needed, the passenger. The passenger was conscious and responsive and was able to release his seat belt to exit the plane.

WEATHER INFORMATION AT THE ACCIDENT/INCIDENT SITE**Weather Observation Facility**Facility ID: kftgObservation Time: 2030Time Zone: mstDistance from Accident Site: 10 NMDirection from Accident Site: 90 degrees MAG**Source of Weather Information**

(Check all that apply)

- | | |
|---|-----------------------------------|
| ☐ National Weather Service | ☐ Company |
| ☐ Flight Service Station | ☐ Military |
| ☐ TV/Radio | ☐ Internet |
| ☒ Automated Report | ☐ Unknown |
| ☐ Commercial Weather Service (DUATS) | |

Method of Briefing

(Check all that apply)

- | |
|--|
| ☐ In Person |
| ☐ Teletype |
| ☐ Telephone/Computer |
| ☒ Aircraft Radio |
| ☐ TV/Radio |
| ☐ Unknown |

Briefing Type/Completeness

- | | |
|---|--|
| ☐ Full | ☐ Abbreviated |
| ☐ Partial / Limited By Pilot | ☐ Unknown |
| ☐ Partial / Limited By Briefer | ☐ Not Pertinent |

Light Condition

- | | | |
|-------------------------------|---|---------------------------------------|
| ☐ Dawn | ☐ Dusk | ☐ Dark Night |
| ☐ Day | ☒ Night | ☐ Bright Night |
| | | ☐ Not Reported |

Visibility10 miles**Sky/Lowest Cloud Condition**

- | | |
|--|---|
| ☐ Clear | ☐ Thin Broken |
| ☐ Few | ☒ Thin Overcast |
| ☐ Partial Obscuration | ☐ Unknown |
| ☐ Scattered | |

Ceiling

- | | |
|--|-------------------------------------|
| ☒ None (clear) | ☐ Obscured |
| ☐ Broken | ☐ Indefinite |
| ☐ Overcast | ☐ Unknown |

Restriction to Visibility (Check all that apply)

- | | |
|--|-------------------------------------|
| ☒ None | ☐ Fog |
| ☐ Blowing Dust | ☐ Ground Fog |
| ☐ Blowing Sand | ☐ Haze |
| ☐ Blowing Snow | ☐ Ice Fog |
| ☐ Blowing Spray | ☐ Smoke |
| ☐ Dust | ☐ Unknown |

Lowest Cloud Condition Height10,000 ft AGL**Ceiling Height**10,000 ft AGL**Wind Direction**☒ Indicated:
150 degrees MAG☐ Variable**Wind Speed**

Velocity: _____ KTS

-or-

- | |
|--|
| ☐ Calm |
| ☒ Light and Variable |

Wind Gusts

Velocity: _____ KTS

- | |
|---|
| ☐ Gusting |
| ☒ Not Gusting |

Type of Turbulence (Check all that apply)

- | | |
|--|---|
| ☒ None | ☐ In Clouds |
| ☐ Clear Air | ☐ Vicinity of Thunderstorm |

Severity of Turbulence

- | | | |
|----------------------------------|--|---|
| ☐ Extreme | ☐ Moderate | ☒ Light |
| ☐ Severe | ☐ Moderate Chop | |

NOTAMs (D, L and FDC), AIRMETs, SIGMETs, PIREPs in effect at the time of the accident/incident

none noted

Temperature: _____ (C)
or 45 (F)Altimeter Setting: 2995 in. HG
or _____ MB

Density Altitude: _____ ft

Dew Point: _____ (C)
or _____ (F)**Icing Forecast****Amount**

- | | |
|--|-----------------------------------|
| ☒ None | ☐ Moderate |
| ☐ Trace | ☐ Severe |
| ☐ Light | |

Type

- | |
|--------------------------------|
| ☐ Rime |
| ☐ Clear |
| ☐ Mixed |

Icing Actual**Amount**

- | | |
|--|-----------------------------------|
| ☒ None | ☐ Moderate |
| ☐ Trace | ☐ Severe |
| ☐ Light | |

Type

- | |
|--------------------------------|
| ☐ Rime |
| ☐ Clear |
| ☐ Mixed |

Type of Precipitation (Check all that apply)

- | | |
|--|---|
| ☒ None | ☐ Drizzle |
| ☐ Rain | ☐ Ice Pellets |
| ☐ Snow | ☐ Snow Pellets |
| ☐ Hail | ☐ Snow Grains |
| ☐ Rain Showers | ☐ Ice Crystals |
| ☐ Freezing Rain | ☐ Ice Pellets Shower |
| ☐ Snow Shower | ☐ Freezing Drizzle |

Intensity of Precipitation

- | | | |
|--------------------------------|-----------------------------------|--------------------------------|
| ☐ Light | ☐ Moderate | ☐ Heavy |
|--------------------------------|-----------------------------------|--------------------------------|

PILOT "A" INFORMATION																																																																																																				
Pilot "A" Responsibilities at the Time of Accident/Incident ☒ Pilot ☐ Co-Pilot ☐ Student Pilot ☐ Flight Instructor ☐ Check Pilot ☐ Flight Engineer ☐ Other Flight Crew																																																																																																				
Pilot "A" Identification First Name: <u>Patrick</u> Middle Initial: <u>A.</u> Last Name: <u>O'Kelly</u> City: <u>Broomfield</u> State: <u>CO</u> ZIP: <u>80020</u> Country: <u>U.S.</u> Age at time of Accident/Incident: <u>59</u> Date of Birth: [REDACTED] mm/dd/yyyy Certificate Number: [REDACTED] +																																																																																																				
Degree of Injury ☐ None ☐ Fatal ☒ Minor ☐ Unknown ☐ Serious			Seat Occupied ☒ Left ☐ Front ☐ Unknown ☐ Right ☐ Rear ☐ Center ☐ Single			Seat Belt Used ☒ Yes ☐ No Available ☐ Yes ☐ No			Shoulder Harness Used ☒ Yes ☐ No Available ☐ Yes ☐ No																																																																																											
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Airplane Rating(s) <i>(Check all that apply)</i> ☐ None ☒ Single-Engine Land ☐ Single-Engine Sea ☐ Multiengine Land ☐ Multiengine Sea		Other Aircraft Rating(s) <i>(Check all that apply)</i> ☐ None ☐ Airship ☐ Free Balloon ☐ Glider ☐ Gyroplane ☐ Helicopter ☐ Powered Lift		Instrument Rating(s) <i>(Check all that apply)</i> ☐ None ☒ Airplane ☐ Helicopter ☐ Powered Lift		Instructor Rating(s) <i>(Check all that apply)</i> ☐ None ☐ Airplane Single-Engine ☐ Airplane Multi-Engine ☐ Gyroplane ☐ Powered Lift ☐ Instrument Airplane ☐ Instrument Helicopter ☐ Helicopter ☐ Glider ☐ Sport																																																																																														
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Pilot "B" Identification First Name: <u>Joseph</u> Middle Initial: <u>E</u> Last Name: <u>Davison, Jr</u> City: <u>[REDACTED] Broomfield</u> State: <u>CO</u> ZIP: <u>80020</u> Country: <u>USA</u> Age at time of Accident/Incident: <u>56</u> Date of Birth: <u>[REDACTED]</u> mm/dd/yyyy Certificate Number: <u>[REDACTED]</u>																																																																																																				
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Airplane Rating(s) <i>(Check all that apply)</i> ☐ None ☒ Single-Engine Land ☐ Single-Engine Sea ☒ Multiengine Land ☐ Multiengine Sea		Other Aircraft Rating(s) <i>(Check all that apply)</i> ☐ None ☐ Airship ☐ Free Balloon ☐ Glider ☐ Gyroplane ☐ Helicopter ☐ Powered Lift		Instrument Rating(s) <i>(Check all that apply)</i> ☐ None ☒ Airplane ☐ Helicopter ☐ Powered Lift		Instructor Rating(s) <i>(Check all that apply)</i> ☐ None ☒ Airplane Single-Engine ☒ Airplane Multi-Engine ☐ Gyroplane ☐ Powered Lift ☐ Instrument Airplane ☐ Instrument Helicopter ☐ Helicopter ☐ Glider ☐ Sport																																																																																														
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ADDITIONAL FLIGHT CREW MEMBERS (Exclusive of cabin attendants, complete the following information)											
Pilot Name and Address First Name: _____ City: _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____						Degree of Injury ☐ None ☐ Fatal ☐ Minor ☐ Unknown ☐ Serious					
Pilot Certificate(s) (Check all that apply) ☐ None ☐ Student ☐ Recreational ☐ Commercial ☐ Flight Engineer ☐ Foreign ☐ Private ☐ Flight Instructor ☐ Sport ☐ Airline Transport ☐ U.S. Military						Seat Occupied ☐ Left ☐ Front ☐ Right ☐ Rear ☐ Center ☐ Single ☐ Unknown					
Type Rating/Endorsement for Accident/Incident Aircraft? ☐ Yes ☐ No			Total Flight Time at the Time of this Accident/Incident: _____ hrs								
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PASSENGER(S) / OTHER PERSONNEL (Include flight attendants; continue on separate sheet if necessary)											
Name and Address	Seat	Crew	Non-Revenue	Revenue	Non-Occupant	FAA	Fatal	Serious Injury	Minor Injury	No Injury	Unknown
First Name: _____ City: _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____			☐	☐	☐	☐	☐	☐	☐	☐	☐
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NARRATIVE HISTORY OF FLIGHT (Please type or print in ink)

Describe what occurred in chronological order, including circumstances leading to and nature of accident/incident. Describe terrain and include wreckage distribution sketch if pertinent. Attach extra sheets if needed. State time and point of departure, intended destination, and services obtained.

SEE ATTACHED

RECOMMENDATION (How could this accident/incident have been prevented?)**Operator/Owner Safety Recommendation**

The incident could have been prevented by ordering fuel prior to departure at KBJC or obtaining additional fuel at KTR or continuing to KGLD for fuel. I had planned on obtaining additional fuel at the KGLD stop. However, at no time during the flight did we believe this was necessary. The distractions of the electrical issue were clearly a factor resulting in a return towards KBJC. However, it is evident that more attention should have been placed on fuel even at the expense of not being able to restart the aircraft at the remote airport. My calculations indicated available fuel for approximately 3 hours using a conservative burn rate of 10 gallons per hour. Performance charts for this aircraft indicate a burn rate of 8.5gph which would allow a flight of 3.5 hours. Instead, the total flight time was approximately 2.25 hours. We also observed the fuel gauges prior to departing KTR and found the levels to be consistent with the calculations of available fuel which would have allowed a return flight to KBJC. In the end, I was within 5 minutes of a complete safe landing at KFTG. Fortunately, no one was injured or killed and the landing occurred well out of range of any populated area.

Statement of PIC, Patrick O'Kelly

On November 20, 2014, I reserved an aircraft from Rocky Mountain Flight School to conduct a night-time VFR cross-country flight. This flight is a component of the requirements to obtain my commercial pilot designation. My original intent was to reserve N811MS, a Piper Arrow I had flown before. A substantial portion of my flight time has been conducted in the Arrow. This particular Arrow was not available on the 20th due to a mechanical issue which needed to be addressed. Accordingly, I was assigned N2204Q, a PA28-181 Archer. My flight planning consisted of preparing for a cross-country flight to KGLD, Goodland, Kansas where I planned a brief stop for fuel and food and then return to KBJC. I did a thorough review of the weather conditions which appeared ideal for this flight. I submitted a flight plan via www.1800wxbrief.com indicating a departure time of approximately 1745MST.

I arrived at KBJC shortly after 5pm and began a pre-flight of the Archer. I then met with Joe Davison, a CFI and personal friend whom I had flown extensively with over the past ten years. In the office prior to the flight, Joe and I discussed various planning topics including weather, including winds aloft and the corresponding fuel requirements at various levels. During my pre-flight, I noticed the fuel in the left tank to be at the tabs indicating 17 gallons of useful fuel. My observation of the fuel in the right tank appeared to be just below the tabs. My estimation of total useable fuel amounted to approximately 30-32 gallons. The actual performance tables for this aircraft indicate a burn rate of 8.5 gallons per hour. However, I chose a more conservative rate of 10 gph. There were no issues noted during the pre-flight. During start-up and taxi, all systems appeared to be working. This plane had a Garmin 500 panel. During taxi, Joe began describing this panel and operations.

The flight departed at approximately 18:25 MST and I opened my flight plan with Denver flight service at that time. Our initial heading was approximately 30-40 Degrees to stay under the Class Bravo airspace. I contacted Denver approach to obtain flight following and we were cleared to KGLD at an altitude of 7500. I utilized the Garmin 530 on board supplemented with my iPad that has "Flight Aware" moving map capabilities. I also used the Thurman (TXC) VOR for navigation.

Shortly after obtaining flight following, Joe and I discussed the engine performance and leaned the aircraft to the cruise altitude. At 1900 MST, I switched from the Left Tank to the Right tank. As we approached the TXC VOR, we were lost from Denver radar coverage and returned to 1200 on the transponder. At this time, we began to notice intermittent electrical issues. We noted static in the headsets, panel lights flickering and the amp gauge fluctuating by 10-15 amps. We discussed this issue and decided to attempt to "recycle" the system by turning all electrical items off and then on again. After two attempts at this, the electrical issue continued. We then discussed the fact that although the issue was not worsening, it may be prudent to shorten the flight and return to the Denver area. At that point, we were near the Kit Carson Airport (KITR) which was approximately 15-20 miles to the southeast.

At approximately 2000 MST, I then switched back to the left tank just before arriving at Kit Carson. After further discussions of the electrical issues and the possibility that we would not be able to restart the engine, we immediately turned to a heading direct back to KBJC. At that time, the fuel gauges showed approximately 8 gallons in each tank. We both agreed that we had sufficient fuel to return to KBJC. I then gave the controls to Joe while I contacted Flight Service, using my cell phone, to cancel my flight plan and explain that we had diverted to Kit Carson. On our return trip we made one last attempt to "recycle" the electrical system. As we approached Denver airspace, at approximately 8500 feet, we made contact with Denver approach and requested expediting to get back to KBJC. Approximately 20 minutes had elapsed since our departure from KITR. Our contact with Approach indicated a route to the south towards KAPA to be selected. We were also within about 15-20 miles of Front Range (KFTG). We noted that both fuel gauges were showing empty. We discussed the low fuel possibility and decided to remain on the left tank. Little reliance was placed on the actual fuel gauge. Rather, we estimated the fuel burn and time remaining to complete the southern route to KBJC. At approximately 20:35 the engine stopped and I immediately switched to the right tank and the engine restarted. We were approximately 12 miles to the east of FTG. We requested to be diverted to FTG for fuel. We were handed off to KFTG tower and began a decent to intercept pattern altitude at KFTG. We continued flying for approximately 4-5 minutes when the engine stopped again. At that point we began immediate emergency landing procedures. I piloted the plane and obtained a glide speed near 80 knots. Joe contacted FTG tower to declare May Day. I flew a downwind leg to the south as I had seen a vehicle traveling north on what appeared to be an abandoned farm road. I was attempting to locate that road. We were also aware of populated areas nearby and selected a base and final approach so as to avoid any lighted areas. The final approach was completely stable. At about 75-100 AGL, the landing light illuminated a well groomed field that would be our landing point. Joe then deployed the flaps. At about 35-40 AGL, I notice power lines in front of the airplane. However, with the limited visibility and slow airspeed, it was impossible to react to avoid those lines despite my attempt to pitch up. We struck the lines which retarded all forward movement. The aircraft then pitched to a completely nose down attitude and we fell the remaining distance to the field. The aircraft then came to rest on its top.

The fuselage remained intact and our seatbelts protected us from serious injury. I was able to unbuckle and crawl out of the plane while asking Joe if he was alright. He then responded and I knew he was conscious. After I exited the plane, Joe was able to unbuckle and exit the plane. We were clear of any power lines and noted no sparks or other indication of any further risk. After approximately 10 minutes, rescue responders arrived. We were transported by ambulance to University Hospital for observation and released. I sustained cuts on the top of my head and Joe sustained a bruise on his forehead. Other than being "banged" up, we were fine.

ADDITIONAL INFORMATION (Please type or print in ink)

Use this space if additional space is needed for any answers.

Statement of pilot B (Joseph Davison - CFI)

This was a VFR cross-country on November 20, 2014 in N2204Q, a PA28-181, with a planned and briefed departure time of approximately 6:30 pm, and a route from Rocky Mountain Metro Airport (KBJC) to Renner Field Goodland Municipal Airport (KGLD), and an estimated time enroute of 1 hour, 20 minutes. The original plan was to refuel at KGLD and make a return flight to KBJC later that evening.

The two pilots onboard were myself and Patrick O'Kelly. Pat is a licensed private pilot. This flight was for the purpose of obtaining additional cross-country flight experience for Pat in pursuit of his commercial flight certificate. I have flown with Pat regularly, flying approximately 100 hours together over the past 10 years. Pat has over 900 hours of flight experience. In my opinion, he is one of the most competent, prudent and cautious pilots I know.

Pat was the pilot-in-command for the planned flight. He planned the cross-country flight. He also conducted the pre-flight inspection of the aircraft shortly after 5:00 pm, while there was still daylight. Pat and I met before departure to discuss the flight plan. Pat informed me that the aircraft fuel was to the tab on the left tank and slightly below the tab on the right tank. At the tabs, the PA28-181 has 17 gallons of useful fuel per side. In an abundance of caution, the flight plan was based on 32 gallons of useful fuel, deducting 2 gallons due to the right tank being slightly below the tab.

The flight departed KBJC at approximately 6:25 pm. On departure, the fuel selector was on the left tank.

A VFR flight plan had been filed and was activated shortly after departure. The flight path was to the north east, passing just to the north of the two tall radio towers to the northwest of the PRONG intersection at 6800 feet, remaining below the Denver class Bravo airspace. Denver approach was contacted shortly after activating the flight plan for flight following in the Denver area. The flight was cleared direct to Goodland into the Class B airspace at 7500 feet and the flight climbed to the clearance altitude. Navigation was VFR, assisted by the GPS direct using the installed Garmin 530, and further backed up by the Thurman VOR as well as a stand-alone IPAD with GPS sensor and Fore Flight software.

Fuel selector was switched to the right tank shortly after 7:00 pm.

Approximately 10 miles east of the Thurman VOR, the aircraft began experiencing minor electrical irregularities. The symptoms included continuous intermittent flickering of instrument lighting, and reflected in both the alternator and oil temperature gauges and alternator annunciator light. The alternator gauge was showing continuous fluctuations between 10 and 25 amps. After some troubleshooting, the decision was made to shorten the planned flight, divert to Kit Carson (KITR), and then return to KBJC. Denver Approach was notified. Kit Carson airport was in sight and approximately 20 miles to the southeast. The electrical problems did not improve or worsen during the remainder of the flight to KITR.

Fuel selector was switched to the left tank at approximately 8:00 pm.

Shortly thereafter, while on final approach to KITR, both pilots observed the fuel indicators read 8 gallons per side and agreed that this conformed with the expected fuel usage anticipated by the flight plan. A touch-and-go was performed at KITR.

On the return leg we climbed to 8500 feet, and contacted Flight Service to close our flight plan to Goodland. We contacted Denver Approach and obtained a route through the Class B airspace. Soon thereafter, I noticed that both fuel indicators read Empty. I pointed this out to Pat. Although this indication contradicted our flight planning, we ultimately decided to divert to Front Range Airport, KFTG.

The fuel exhausted in the left tank at approximately 8:30 pm. The fuel selector was switched to the right tank.

We contacted Front Range Tower, obtained information Quebec, were cleared for a straight-in approach to Runway 26, and began our descent. Shortly thereafter, the engine stopped. We immediately conducted the emergency checklist for engine failure, attempted to restore power to the engine, and began emergency procedures and briefing for an off-airport forced landing.

I advised Pat to turn away from lit areas (presumably indicating an area of high population). I broadcast a Mayday call to Front Range Tower. We selected a large unlit field, established a glide speed of 75-80 knots, and continued pre-landing procedures and checklists.

Pat selected an unlit and lightly travelled road to the west of us with a car proceeding to the north as a possible landing sight. The southbound ground track was used as our downwind leg, planning a northbound final. There were ground lights to the north of the selected landing area and I provided advice on the timing of the base and final legs to prevent over-shooting our target.

When we turned final, the field was well illuminated by our landing lights and I identified that we were slightly to the right of the intended road. The field below us was reasonably level and the furrows were in the same direction as the flight path (to the north). Below 50 feet agl, I reminded Pat that flaps were not set and announced that I was deploying flaps. At approximately 25 feet agl with a clear landing area in front of us, the landing light illuminated a power line directly in front of us at chest level. Pat instinctively attempted to climb over it, but there were 3 more lines just above it. The plane struck the power lines and flipped over, striking the right wing as it rolled over and coming to rest upside down just on the north side of an east west dirt road.

The total usable fuel available at the beginning of the flight (32 gallons) should have provided in excess of 3 hours of flight time. The total time in flight prior to engine failure was approximately 2.2 hours.

11/28/2014

I HEREBY CERTIFY THAT THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Date of this Report

Signature and Name of Pilot/Operator

11/28/2014
mm/dd/yyyy

Signature:

Type or Print Name: PATRICK A. O'KELLY

Signature and Name of Person Filing Report if Other than Pilot/Operator

Signature:

Type or Print Name:

Title:

FOR NTSB USE ONLY

NTSB Accident/Incident No.
CEN15CA055

Reviewed by NTSB Regional Office
CEN

Name of Investigator
J. Brannen

Date Report Received
11/28/2014