

Monday, July 27 2016 started off a typical day with work starting at 6:00 pm. Upon arriving at work there were only two jobs scheduled one was fixed wing work and one was specified helicopter. John was to do the fixed wing work and I got the helicopter job. The field name was Palm 28 E. a field that I am familiar with and have sprayed multiple times in the past couple of months. After maps were copied, materials were loaded the ground crew left for the field and I started my preflight.

During preflight I noted that fuel in the main tank was half and fuel in the auxiliary tank was at $\frac{1}{4}$. Warning light test switches illuminated their respective lights. All fluids were within their sight glasses. Engine oil was about half of a quart low so I added 1 quart of oil and rechecked confirming that the oil level was about one half quart above 7 quarts before takeoff. When I gathered a fuel sample the fuel in the auxiliary tank was a light blue and free of debris and water. Main tank fuel sample showed a slight discoloration initially and cleared up after about 1 ounce. I dumped that sample and took another with no additional discoloration. Other than the slight discoloration in the fuel sample the aircraft appeared airworthy.

At approximately 7:55 pm I decided to startup and head to the field knowing that the ground crew had arrived and cleared the field. During start up everything seemed normal the mag drop checks were within the limits of 7% drop. Sprag clutch check produced an immediate drop in engine rpm after rolling the throttle off with a slow decrease in rotor rpm. Low rotor rpm warning system was functional at 97%. Oil pressure was about 65 psi at 101% rpm. I made a quick radio call to Calxico traffic and departed from the ramp into the wind. I flew around the western side of the city to avoid over flying residential areas. I climbed to 400' nothing was out of place two miles north of the airport I turned northeast and remained at 400'. As I was flying I was monitoring the gauges periodically and the last that I remember the oil temp was at 180°F oil pressure was about 65 psi, cylinder head temp was about 400°F, and I had plenty of fuel. The Sun had dipped below the horizon before I started up and the ambient light was fading, but I still had ground reference.

Six miles northeast of KCXL at 400', 70 kias, 23" of manifold pressure, I felt a sudden vibration in the airframe followed immediately by the low rotor rpm warning system. It came as a complete surprise (yes as pic I should be prepared for any and all situations that may arise) I immediately glanced at my rotor rpm and it was decreasing through 90% by the time I had the collective down the rotor rpm was at 85% and began to climb as I had entered an autorotation. I quickly recovered my rotor rpm the airframe vibration had either subsided or was greatly reduced the low rotor rpm warning system was silenced and I started a shallow right turn. I remember the wind was from the southeast I saw that I was passing a freshly tilled field bordered by a dirt road with an asphalt road to the north. A quick assessment revealed that the engine had oil pressure and the "low oil pressure" light was off. Engine rpm was around 60%. I had initially looked at the asphalt as my intended landing site then the thought of traffic came to mind and I decided to land on the dirt road bordering the field. As I was approaching 50' AGL I started a flare and increased throttle, engine rpm increased to the green arch and matched the rotor rpm. I intended to land under engine power and as I increased collective and slightly leveled the skids I felt a vibration and lost rotor rpm. I immediately reintroduced aft cyclic and lowered collective trying to regain rotor rpm at this point I was well below 50' my spot was approaching. At that point I noticed that the dirt road I was aiming for was not level and was down sloping to the south. I shifted my aim to the

right, flared as hard as I dared and leveled the skids for impact. The initial ground impact was lighter than expected I remember thinking that everything was going to be fine. I still had forward momentum when I touched down and after a short ground slide the right front skid dug into the soft dirt on the edge of the field. The helicopter pitched forward it felt like it teetered then pitched to the right and that's when the rotors contacted the ground.

After the rotors came to a stop I turned off the master battery switch fumbled with the fuel shut off switch for a second with no luck and fearing a post-crash fire I unlatched my safety belt and exited through where the right front windscreen used to be.

I retreated about 50 feet to the east and noticed a car approaching from the west. After about a minute there was no fire so I met the individual near the helicopter and proceeded to the west, I on foot and he in his vehicle. The individual was already on the phone with first responders and they arrived shortly after.

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Matthew Sepi