

Accident Narrative of N1214D for event on August 3 2017

Over the course of the afternoon I had been watching the weather in preparation for a trip from KCONY (Canyonlands Field) to U69 (Duchesne Utah), about an hour's flight to the north. My goal was to accomplish the trip late in the day when the turbulence would be less and before dark.

The weather briefing I obtained on my iPad (included) via Foreflight at 21:18Z (15:18L) showed a SIGMET for convective activity south of our route that wouldn't be a factor and another SIGMET encompassing much of Utah, Arizona, Colorado, and Nevada for more convective activity but nothing specific at that time. The recent weather patterns had been for isolated thunderstorms tracking from Northwest to Southeast across much of the area. Radar had been showing several isolated storms that day, including one in the vicinity of the airport near our departure time. My intent was to wait for it to pass and then depart.

When we arrived at the airport, that storm was in progress. The ASOS was reporting winds from 280 at 30 gusting to 47 knots. Obviously not a good time to fly. Although there was virga overhead, no rain was reaching the surface at the airport. I could also see the main rain shaft for the storm about 5-10 miles southwest of the airport and it was not in the path for our flight, nor was it going to be. The storm was tracking Southeast, clearer skies could be seen to the Northwest, so we sat in the car and waited for it to move off.

After approximately 30-40 minutes, the storm did move off, winds calmed significantly and swung around to favor runway 21 by about 15 knots. I completed all my preflight tasks and we started up. Taxi and run-up were normal. I listened one last time to the ASOS and I recall it being consistent with what was reported a few minutes earlier. I took the runway and the takeoff was normal. I estimate that was about 19:47L/01:47Z (see picture included)

Just moments after liftoff I got a good view down the runway. Just beyond the end of the pavement was the obvious sign of a small microburst developing with blowing dust curling up in several different directions centered just to the right of the centerline, and it was growing/spreading out quickly.

My wife actually captured a picture of this with her iPhone camera in which it can be plainly seen (picture included). She often takes pictures on our flights and this just happened to be in it. Even though she took the picture early in our takeoff roll, I didn't see it and have it register as to what it was until after liftoff. I really wish I had seen it earlier of course.

I thought about my options which would have been an early crosswind turn in either direction. Turning to the right had the drawback that there is rising terrain near the runway and I didn't think I would be able to climb over. Being that I was low and slow, I figured any turn might have a radius that would intercept the growing area of the microburst and subject us to a strong tailwind shear- and that didn't thrill me. So I decided to gain as much altitude and speed as possible while I was still over the runway, and then make a turn when I had more altitude and speed to work with and do it before I got into the downdraft portion of the microburst.

That plan sort of worked initially. I did gain approximately 300-400 feet AGL, but not more than that. The problem was that I flew into the downdraft portion of the microburst before I could

execute a turn. The downdraft was apparently not centered over the curling dust I had observed moments earlier. Not that it should have been, but I had that expectation and that assumption was incorrect. (See included diagram)

The downdraft was severe and well exceeded my airplanes' climb performance. Even at full power, the sink rate was such that we were on a collision course with the power lines that run approximately 90 degrees across the departure end of the runway. Those power lines also trace a big half circle shape around an area that made way for a runway expansion some years earlier.

From that point on my efforts were focused on not stalling, not colliding with the the power lines, and to not get "trapped" in the half circle of power lines as described above. I did manage to maneuver a bit and make a left turn, climb over the power lines and then "settle" on a course paralleling them to the southeast hoping to eventually fly out of the situation. The situation never did improve as there was apparently more gusty wind shear conditions. We couldn't gain any speed or altitude and we were again below the power line level. We just never got a break. It was all I could do to not stall, maintain a nose up, wings level landing attitude and hope that where we hit would be friendly enough.

We landed on a rough area of sand vegetated by blackbrush. Although I remember making the conscious effort and decision to control the aircraft to a landing, I do not remember the landing/crash or how we got out.

The aircraft came to rest with the fuselage resting on its right side pointing more or less north, and the wings had mostly separated and folded up and over to point southeast. The wings took the cabin ceiling with them leaving the rest of the cabin twisted and open to the weather and "arranged correctly" but obviously destroyed. (See picture)

I do remember waking up in the sand. My wife's foot was stuck under a portion of fuselage and I did some kind of leg press move to lift enough off and she pulled her foot out. She then did her best to get clear of wreckage by scooting on her back- she did not want to try to standing up thinking she might exacerbate an injury. I managed to get to my feet, survey the scene a bit for fuel and fire, and satisfied myself that apparently there wasn't any. It was obvious we were both injured and my chest hurt but being that I was on my feet and she was talking I felt like we were mostly ok. Our dog had been with us and it appeared she was un-injured which was great.

It was pure dumb luck I quickly found my phone in the sand to call for help. There were several communications calling both ways with the 911 dispatcher to help the rescue crew get to our location. It took them about 30-45 minutes to get to the scene.

A basic timeline of events best I can reconstruct;

According to my wife's iPhone picture, takeoff was 19:48L/01:48Z.

I'm thinking there wasn't more than maybe 2 minutes of flight time total but I don't really know for sure.

I don't have a good sense of time between the landing and my first call to 911. According to my phone log that call was at 20:16L.

Recommendations to be attached to accident report for N1214D

Of course with 20/20 hindsight there are numerous options that could have been exercised to avoid this accident. Beginning with but not limited to;

- 1) I could have opted not to go.
- 2) I could have waited 10 more minutes.
- 3) I could have executed a low altitude low airspeed turn to the left as soon as I recognized what was ahead- it would have been "sporty" but it probably would have worked.

Without the 20/20 hindsight and in the moment it is much harder to recommend much other than pay attention and be careful. I thought I knew the basics of microbursts and their hazards and I thought they were fairly localized. I know now that's not really true.

Waiting for an isolated thunderstorm to pass has been a very common occurrence in my career and at the time I just didn't see anymore reason to wait around. The storm had passed, the sun came out and I thought that was it. I clearly thought wrong on this one and my confidence was supported by experience and I fell for it. I will certainly be more vigilant in the future.

There is a lot I can't explain about this accident and likely never will have answers. I'd like to know our ground speed at the time we hit. I'd like to know all the tailwind components from the time of the downdraft to landing.

In my career as a pilot I am familiar with the Delta Airlines 191 crash in Dallas that put microbursts in the discussions of safety. In simulators over the years I have flown the profile of that accident several times and have executed the wind shear escape maneuver for whatever airframe I was in as prescribed. But in the simulator we are in a jet with excess thrust, much more airspeed, you know it's coming and you're primed for it. In my case here, the same basic priority in the maneuver of not stalling and trying to avoid obstacles with all of 145 horsepower to try to convert into performance was beyond what the physics would allow.

In this instance I was at my maximum abilities controlling the airplane. As I stated earlier it was all I could do to not stall and not hit the power lines. The descent rate in the downdraft was breathtaking. Had I not managed a bit of a left turn and momentary luck with better air, we would have hit the power lines and/or descended into the ground at a very high rate. And once over the lines on our way to the southeast there was apparently more gusty shear that took everything we had left (it wasn't much) and forced us to the ground. I like to think that my efforts to maintain flying speed and wings level were worth it but I wish I could prove it.