

N947LH Incident Report - Wednesday 22 Jan 2020 - By Gregory J Morford

I got a mission page at 13:12. I checked weather (it was VFR & clear, vis was >10 miles, winds 300 at 7 knots, temp was 30 degrees F, dew point 21 degrees F, 70 % relative humidity and 2978 alt set) and filled out my Risk assessment form by 13:15. I called Dispatch and told them it was a "Wx GO". I got my flight gear and headed to the hangar. I opened the hangar door, lifted up and pulled out the aircraft and set it down on a dry part of the concrete approach. I returned the lift to the hangar and closed the hangar door. I got into the aircraft, strapped in, got my checklist and performed a normal start. I lowered my helmet's sun visor and I called Magic City Tower at about 13:26 and got approval & lifted off at 13:27. I did a hover check (all looked good) and took off for Trinity pad. Enroute I punched up ATIS on the radio to confirm winds and they were NW (300 degrees) winds at 7 knots. So I flew over the big church (northeast of the pad a couple of blocks) and then performed a 180 right circling approach to the pad. As I finished my turn and slowing up, I felt a little low on my final approach and pulled in a little collective. I rechecked the pad to confirm it was clear, that I was lined up and heading for the big "H". As I was leveling off (usually at 2 to 3 ft above the pad) and applying more collective, I contacted the pad firmly. It was not a real HARD landing because my decent rate was normal but it did surprise me a little. It was a firmer than normal single landing (I did not bounce or move sideways and anything like that and nothing fell down in the cockpit - it was just one solid landing at 13:32) so I thought everything was okay then I noticed an immediate but small unusual vibration. As I was rolling the throttle to idle and waving in the medical crew, the vibration lessened but I started to wonder what could have happened. I thought, since it was a firmer than normal landing, I should check the skids. So I opened my door and looked at both skids on my side - they looked normal. After the medical crew got in, I rolled up the throttle to "fly" and the vibration increased. I told the crew I developed a unusual vibration upon landing and asked if they saw anything unusual during my landing (they were watching out of the windows of the closed tunnel doors). They said "no". I asked if one of them could go outside and look under and toward the back of the aircraft to see if anything was not normal. So one crewmember went out toward the front of the aircraft and looked around. While he was outside I brought the aircraft up to light on the skids and moved the pedals, about an inch, back and forth. Everything (control wise) felt normal but I still felt the vibration. I lowered the aircraft "full down" and motioned the crewmember to come back in, still feeling the vibration. The crewmember said he saw nothing unusual but I did not feel comfortable with the situation. I brought the aircraft up to a few inches hover - everything (control wise) still felt normal but I still had that unusual vibration. So I landed and told the crew I was going to shut down so we could check it out. I called Dispatch on the radio and informed them what I was doing and there would be a delayed takeoff. They acknowledged. I got out my shut down checklist and rolled the throttle to idle. During the 2 minutes wait for shut down, we noticed the hospital maintenance gentleman (who was assisting the medical crew and was awaiting our takeoff) was pointing toward the tail of the aircraft. I called Dispatch again and told them we had a maintenance problem and could not do the mission. After a complete shutdown and turning off the power, we all got out of the aircraft and walked toward the tail. We were all surprised what we saw: a bent-in lower vertical fin, then the last inch or so of

both tail rotor blades missing, with jagged endings on the blades. Then we looked at the safety fence (around the outside of the pad) and it was missing about an inch section in the fence-edge pipe and some of the wire fencing edge was displaced a little. Then I looked at the tail boom and noticed a few scratches on the left of the tail boom/ horizontal stabilizer/ back section of the aircraft. I checked the time, it was 13:36. Then I talked to my senior pilot on the phone.

Before the flight request: On Tuesday (21 Jan) morning I had taken normal medication (my only meds are one Vitamin D3 ((2000 IU/50mcg)) daily and an occasional iron supplement (65 mg). I had one alcohol drink at home at about 13:00 - 14:00 hours. I had supper with my family at Buffalo Wild Wings at about 17:30 (I had buffalo tacos/chips/fries/Mt. Dew drink). I was in bed with the lights off at about 20:10. On Wednesday (22 Jan) I got up at about 02:15, dressed, had a bowl of cereal & juice, loaded up my car and was on the road to Minot by 02:45. During my two hour drive I had some hot chocolate and a few pretzels. I arrived at the hangar at 04:50 and meet the on-duty pilot, Pete Ferguson, and talked for a while. At about 06:00, we were at the computer and I sent out the daily duty log. After that, Pete decided to lie down for a while on the couch and I went to my bedroom to take a nap. Just before 08:00 we both woke up. I did little things and ate one yogurt cup until 10:00, when I went to have coffee with the local airfield workers at another hangar. From 11:00 till almost 13:00 I was outside trying to ice-scraper off snow & ice from our hangar's concrete approach. I had lunch at 13:00 (half a combo meat/lettuce wrap, an apple, chips and a Gatorade drink).

Flight time: Bell 407 is 98.3 hours (with 58 mission flights) covering 18 months/Military was 6005 hours in multiple aircraft/Sanford in Bell 230 & EC145 was about 355 hours combined.

I have a FAA ATP certificate dated Nov 2014 and a current Class-2 Medical certificate dated 12/10/2019.

Gregory J Morford / Northstar Bell 407 Medevac pilot