

Statement by Luke Wimmer on July 7, 2021 for the investigation of Brad Marzari's aircraft crash of N9145 on July 4th 2021

I, Luke Wimmer was asked by Brad Marzari to help him with his aircraft by fixing an issue with his right/#2 magneto not passing the runup check "excessive rpm loss on left magneto." I looked over the engine with Brad present and we determined the engine was leaking oil from the dipstick filler neck, the propeller governor gasket, and propeller governor adapter plate gasket. We agreed the scope of work would include working on these oil leaks. Brad left his aircraft with me to make the needed repairs; after cleaning, gapping, ohm testing and rotation of left magneto sparkplug to the right magneto and vice versa it was determined the plugs were in good working order. The sparkplug wires were tested with the test box and showed proper function. The magneto's P-leads were given a continuity test as well as confirmation the magneto switch was functioning properly. Both left and right magnetos were confirmed to be properly timed, yet the right/#2 magneto was still not passing the run-up check. The right magneto was removed, and the magneto case opened to inspect further. I found the contact points were presenting white arching markings and the felt pad, which is intended for oil, was packed with grease. I spoke with Brad to let him know my findings and he agreed to have the magneto sent out for repair but not for the full 500hr inspection as I had recommended, I also recommended the other magneto should also be sent out to receive servicing, but Brad declined and stated it was running fine and it did not seem like a good use of money. The magneto was sent out to Aircraft Ignition Services in Honeygrove Texas. I had removed the oil filler neck and there was a stress crack found at the base where the threads of the filler neck meet the body; the oil filler neck was repaired and installed with a copper crush washer and safety wired to the engine block. The Propeller governor and the adapter plate were removed, and new gaskets were installed, and the propeller governor was reinstalled with the rigging checked. On Thursday July 1st, I let Brad know his plane would be ready on Friday July 2nd Brad arrived at the hanger around noon with his wife Gabby, I told Brad I was not finished with his repairs, but he could wait or come back in a couple of hours. He decided to go do things in town and wanted me to call when the plane was ready. I continued working and shortly after they departed I had the magneto installed and began the engine run-up operational/leak check. During the runup, the caution light for an engine chip illuminated. I shut down the aircraft and looked over the engine to find the sensor. I drained the oil into a new clean bucket and opened the oil filtration housing on the left firewall. This was not within the scope of work I was asked to perform but necessary to determine if further maintenance was required. I discovered metal contamination in the filtration housing and on the screen. I called Brad and he and his wife returned to the hanger where we "Luke, Brad and Gabby" looked together at the material in the filter housing and on the screen. We ran a magnet over the screen and found the particles were sticking to the screen and not the magnet. We then went into the office to further discuss and Brad then imparted his knowledge of the term "making metal" to Gabby so she could understand what we were discussing. Brad spoke knowledgeably about the possible causes and effects of metal particles in the engine, which left me feeling Brad was informed and aware of the situation, its risks and hazards. We agreed that I needed to recover the particles from the housing and send them to a lab for further discovery and to determine what was occurring in the engine. Brad was certain he wanted to take his plane back from KTPL Temple Airport to the KILE Killeen Airport when I had the plane put back together, I stated we need to figure this out before he takes any trips with the plane, Brad stated he would be going the EAA Oshkosh airshow this year and we needed solution in time for this trip. Brad and Gabby left me to finish cleaning up and collecting the sample. I then cleaned filtration housing, sensor, and screen back together, I added new oil and performed an engine runup

and the chip light did not illuminate during this run-up (note 1). I completed the paperwork and then notified Brad I had completed the maintenance he requested, it was too late in the day for him to return to meet me, so we agreed to meet on Saturday to exchange the paperwork and payment. On Saturday both Brad and Gabby returned to meet me and pick up the plane. I received payment in the form of a check and handed Brad the log entry and we discussed the sample of oil/filter contamination would be sent to the lab on Tuesday when the holiday weekend was over. Brad then did a run-up and flew his plane to KILE where I believed he would leave it in the hanger until we had answers as to what was going on with the contamination/particles in his engine. On the evening of the 4th Gabby called me worried Brad had been in an accident, as a friend told her she had heard there was an aircraft crash in the area. Gabby asked if I could help her find any information. I looked at Flight Aware and saw he had flown KILE- KBAZ New Braunfels Airport and back to KILE. The flight tracking stopped short of the airport at 5:19PM but I told her this is common as the ADSB will often stop tracking at lower altitudes, she agreed to wait another half hour and I would drive her to the airport from her house if needed. Gabby stated she recently arrived in Texas and she and Brad only had use of one car. I then looked online for more information and found a news article stating a plane crash had occurred near Killeen airport at approximately 5:25, I felt this was too many coincidences and started driving to pick up Gabby and take her to KILE to find out what had happened. When I arrived at the Marzari house the state troopers were just arriving too. The Trooper stated Brad had died in a plane crash and I stayed with Gabby until her friend arrived and I departed shortly after.

Note 1: As part of the investigation the NTSB and FAA discussed the sensor on the filtration housing I now believe the sensor light on the instrument panel was most likely mislabeled as a chip detector and would have likely been the filtration bypass notification. A mislabeled light/sensor functioning as a bypass and not a chip detector offers a false sense of risk mitigation as the operator and maintainer would believe the first sign of more metal a notification would occur, but the notification is only occurring when a volume of metal had filled the screen to a point where the filtration bypass opening.