

Written statement:

It was a nice morning when I came out from the Academy to Centennial. I arrived at the Centennial Flyers office at 1330 on February 18, 2017. The instructor called me at 1400 to meet him at TAC Air Terminal which was a few buildings down the road. After arriving at the terminal, the instructor gave me the Piper Arrow Pilot Operating Handbook (POH) to study while he was going up to fly with another student. He delayed his takeoff time with his previous student since the winds were gusting from what he told me; however, they eventually flew shortly after. I was reading the POH until 1500 when the instructor and his student landed. By this time I was able to write down the important information about the plane such as the Vr, Vne, magneto drop, magneto difference, and quickly remembered the basic cockpit layout. I wrote all of those things down on a piece of paper. (I believe the EMT took that piece of paper and wrote down my personal information on it and relayed it to the hospital.) I was up next to fly with him and we did not perform a pilot pre-brief prior to this flight. We went over to the orange box marked "Centennial Flyers" by the row of planes from where the Centennial Flyers were parked. He showed me how to grab the key and unlock the orange box. It was a 2 step process and I still didn't get the code. As we approached the plane, he didn't know in the first place that there was a latch on top of the fuselage to open the only cockpit door. We did a rough preflight according to a small laminated checklist in the plane and estimated the fuel was approx. 23 gallons in the right wing and 25 gallons in the left wing according to the wooden ruler paint stick to measure how much gasoline was in the plane. When we got to the plane, the wrong key was able to unlock the aircraft door. The instructor told me that, "We have 23 gallons in the right wing". From my perspective, there should be more fuel in the fuel tank since the POH said the Piper should contain more fuel but I wasn't sure since the dip stick was not marked. I saw the dip stick was divided into three small rectangles at the bottom. The left tank was a little higher than the right side tank being marked at the second rectangle. Before I put the dip stick into the fuel tank, he made sure that I wiped all the residue off of the stick to prevent contamination. He eventually verified that "we should have enough gas for an hour of flight." I did not see the instructor sump the fuel before flight, to the best of my knowledge we didn't test for the fuel quality, but I made sure the color of the fuel was blue. The oil quality was checked by the instructor. I remember seeing that the oil was a little darker than usual. Since I am on the Flying Team at the Academy, I am used to seeing the color of the oil to be lighter and more yellow. If I remember him correctly, he told me that the oil was 6 quarts. For a majority of the time he was standing on top of the wing and guiding me verbally to check the fuel and wings. The only time he was showing me around the plane was the elevator and the tail section. He points out the difference between the Cessna which only a certain part of the elevator moves and the rest is pretty much the same according to him. According to the POH the flaps should be lowered during the preflight, but we were unable to do so because the instructor could not properly operate the flap lever to accomplish this preflight step.

He tried to push or pull a lever but he was still unsuccessful at lowering the flaps and I concluded that he did not know how to operate the flap system. While I was looking at the forms, I asked him "Have you matched the Hobbs number yet?" He replied that "the form is good [and he] checked it." I looked at the back of the aircraft and noticed there were three pieces of paper including the airworthiness certificate. I assumed he checked those forms also. At that point, I skimmed through the folder for a

little bit and asked the instructor again that if he “[was] sure that the Hobbs matches?” He was certain that every form was correct. Then I put all of my belongings in the backseat of the plane but later grabbed my USAFA Flying Team IFG (In flight Guide) out with me just in case I need the frequency for KAPA. He thought that my IFG was the aircraft original checklist. After I have clarified all of the information with him, he said we are ready to continue with the checklist “before starting the engine” as he continued to struggle to find where all the switches in the plane were. I couldn’t find the fuel pump, avionic master switch, beacon, and primer on the panel. I remembered some of the diagrams from the POH and I was able to get us through the before starting engine checklist. We tried to prime the engine according to the little laminated checklist and at this point we couldn’t turn the ignition switch. I was trying to use both keys, and the instructor was trying it also. Since I found out that it was the wrong key, I asked him do we have the right key and he told me we didn’t. So we exited from the plane and grabbed the right keys from the orange box. At this point, I thought in my head “why did the other airplane key unlock this plane’s door?” This was my first time flying in this aircraft, my first time as his student, and my first time flying with Centennial Flyers. When we got back and situated inside the plane, we tried 3-4 times (approximately 10-15 seconds each) trying to get the engine started but it wouldn’t go. The instructor was moving the throttle and the mixture setting up and down simultaneously trying to get the engine to start while I was holding the ignition switch. We kept trying and trying to get the plane started but we got nowhere. I decided to open the POH and started the engine according to the manufacture checklist. The plane’s engine started at mixture full lean setting. Everything seemed to be fine with the oil pressure coming up and rpm in the green arc or normal operating range. I didn’t have a chance to remember what the oil temperature was at the time. At this point, the instructor said that “I have not flown this plane for a while and it is very different to a 172 or 182 cockpit.” I didn’t know what to say since the only thing I knew about that plane was from reading the POH. After the engine has started, I turned the avionic master switch on and dial in the KAPA frequency. He was arguing that there should be 2 radios in the aircraft since there was a button above the GPS saying radio 2. The only thing I saw was one radio below the GPS. As we were taxiing out to the north run up area, the low voltage light came on with beeping sounds. The instructor didn’t know what was going on for 1-2 minutes until he saw the light beeping (low voltage on the right panel). After I found out that we had the low voltage, I adjusted the throttle setting to a higher setting and the sound went away.

During the run up in the North Ramp I went through the laminated checklist. The instructor didn’t recognize the amount of magneto drop but I got them written down on my kneeboard. I don’t know if it was on the left or right checklist with the POH information on my kneeboard. The engine check was fine and the propeller governor was working. During the runup, there was a beeping sound coming out into the headset. The instructor pointed out that it was the low voltage light warning again. I tried to adjust the throttle setting to a little higher setting to solve the problem and the sound went away. We taxied out to Runway 17L at the hold short line. At the hold short line on 17L the Falcon tail number November Six Two Zero was on takeoff roll on 17L. I looked at my watch to time myself with the wake turbulence time as I was trained with the Flying Team with the 557th. Normally two minutes, but we got our takeoff clearance in less than two minutes and the instructor taxied out. Once he taxied out the aircraft he told me I had the aircraft. I made my radio call to tower requesting that “Piper Two Zero Seven Two Uniform was cleared for takeoff” and the tower cleared us by saying “Piper Two Zero

Seven Two Uniform, clear for takeoff, runway 17L, winds gusting at 26.” I put in full throttle for our takeoff roll and I saw the rpm come up to 2600 rpm while the fuel pressure gauge, oil pressure gauge, and oil temperature were in the green arc setting. Engine instruments seemed good and the airspeed was coming alive. We reached our rotating speeds of 65 knots and I gently pulled back the yoke and hoped the nose of the aircraft would come off the ground but it did not. By this time, the instructor said he had the aircraft. After he took the aircraft, he aggressively applied pressure with back yoke to get the aircraft off the ground. The airplane got off the ground but stayed in ground effect and developed into a pilot induced oscillation on two different axes: pitch and roll. The left wheel would touch the ground slightly with a left wing drop with inputs of slight forward and left yoke alternating the pitch and bank angle and then vice versa on the right side. The instructor was making a figure eight motion with the yoke during this time causing the airplane to be in this motion from my perspective. I noticed the airspeed indicator and it was fluctuating between 60 and 65 knots and I also noticed we approximately used 2000 feet of the runway. At this point, I did not know what to do until another sound came over the radio. “Piper Two Zero Seven Two Uniform, are you alright?” The instructor replied “We are climbing.” That was the point I knew it was too late to abort. The plane barely made it over the fence and the six lanes of traffic. Then we were turning towards a building in a left crosswind. The plane was pointing towards that building and then I told the IP that there was a building in front of us. He turned left towards an empty space and the airspeed dropped to 55 knots. We then hit the first line of the top of the trees and he yelled “Oh my God!” and passed out after we hit the tree. I was in an embrace position looking at the airspeed indicator still reading 55 knots. Then I looked outside and noticed we were heading towards another tree. We were between 55-60 knots and hit the second tree losing our left wing which caused the plane to go inverted. Then we smacked the ground and the plane skidded roughly 20 feet when we made impact with the concrete. I unlatched myself and got out of the cockpit but noticed I had numbness in my leg. As soon as I stood up outside I heard a click in my left leg and that is when I knew it was broken. I was lying there beside the plane telling witnesses to call 911 and not to touch me since I was in pain. The instructor later woke up and walked out of the crash asking me if I was alright. I looked back and saw the oil and fuel leaking out of the aircraft. I didn’t move until the Fire Department took me and put me on a stretcher and sent me to the hospital.