

The pilots reported that they were conducting a recurrent training flight that included a low approach and missed approach to runway 34. They initially flew the approach to decision height, then continued along the length of the runway offset to the right to observe the runway environment, not touching down. At the departure end of the runway, they turned crosswind and climbed to traffic pattern altitude, which they reported was about 5,700 to 5,800 ft msl, or about 1,000 to 1,100 ft agl.

During the turn from crosswind to downwind, they heard another airplane announce that it was entering the traffic pattern on the 45 for a left downwind to runway 34. Both pilots began looking for the traffic visually and on ADS-B. The flying pilot immediately transmitted that they were on left downwind for runway 34. Neither pilot saw the other airplane before impact.

The impact occurred shortly after the traffic call. The pilots reported a loud impact noise and significant airframe vibration. The airplane lost a propeller blade, the engine began operating roughly, oil covered the windshield, and part of the cowling obstructed their forward view. One pilot stated that he could see forward only through an opening in the cowling near the oil filler door. The other pilot initially believed they had lost the engine because of the loss of power and degraded visibility.

After the collision, the pilots identified runway 12 as the most suitable runway for landing, declared an emergency, and maneuvered toward the runway. One pilot took control, verified that the flight controls remained effective, and assessed whether the airplane could reach the runway or whether an off-runway landing would be required. After determining that the runway was reachable, they landed on runway 12.

The pilots reported that they landed without flaps. After landing, they secured the airplane by shutting off the fuel, master switch, backup battery, and ELT.

The pilots stated that they had been making traffic calls during the maneuvering sequence, including calls for the upwind, crosswind, and downwind legs. They reported hearing only the other airplane's 45-degree entry call before the collision and did not recall hearing an earlier call from that airplane. They did not recall hearing a tail number or airport identifier from the other airplane, and only the 45-degree pattern-entry information registered at the time.