



RECORD OF CONVERSATION

Jim Silliman
Air Safety Investigator
Central Region

Date: 2/11/15

Person Contacted: Olen Berthold (Pilot) and Ian Grossman (Copilot)

NTSB Accident Number: CEN15IA079

Narrative:

The pilot reported that the airplane was about 900 feet above ground level in the crosswind turn after takeoff when the airplane “began to pitch steeply toward the ground.” The airplane lost about 200 to 300 feet in altitude. He pulled hard aft on the yoke to keep the nose level, and he confirmed that the autopilot was not engaged. He called for the pilot-certificated passenger to assist him in pulling aft on the yoke which required “extreme back pressure.” The pilot estimated that it took about 150 pounds of force to keep the airplane level. The pilot-certificated passenger made all the radio calls during the flight and declared an emergency while the pilot maneuvered the airplane to land on runway 12R, since it was the longest and widest runway available. During the flight, the pilot incrementally added nose-up elevator trim in an effort to relieve the nose-down pressure, but without effect. The manual elevator trim wheel indicated that the trim was in the full nose-up trim position. The pilot-certificated passenger checked the circuit breakers for any circuit breaker that could account for the problem, but there was none. He looked through the airplane’s rear window to see if there was any impact damage to the elevator and confirmed that there was no damage to the empennage. The pilot turned onto the base leg still unable to relieve the “extremely strong” nose-down tendency. Both pilots were concerned that they would not be able to flare the airplane during landing, and that the airplane would contact the runway with an abnormal nose down attitude. The pilot remembered that work had been done on the elevator trim system and thought that there might be some kind of control reversal problem. While on the base leg of the approach, the pilot decided to apply nose-down trim using the electric trim on the control yoke. The nose-down control forces lessened and he immediately realized that there was a control reversal. The pilot proceeded to make a normal approach and land at CPS without incident. The emergency response vehicles followed the airplane back to the hangar.

Both pilots were seniors at the Saint Louis University's Parks College of Aviation Science, in St. Louis, Missouri, pursuing aviation careers. The pilot held a commercial pilot certificate with single-engine land, multi-engine land, and airplane instrument ratings. He had about 400 hours of total flight time with 50 hours in make and model.

The pilot-certificated passenger held a commercial pilot certificate with single-engine land and airplane instrument rating. He had about 250 hours of total flight time with no hours in the make and model. He had a complex airplane endorsement.

The pilot-certificated passenger was on the post-maintenance check flight at the request of the pilot to assist with crewmember duties. The pilot-certificated passenger assisted the pilot by running the checklists using a challenge and response to the checklist items, making all the radio calls to the air traffic controllers, and helping check the airplane's systems when the emergency occurred. He also assisted the pilot by pulling back on the airplane's yoke, relieving some of the extreme nose-down pressure felt by the pilot. The pilot reported that it was his opinion that the principles of crew resource management (CRM) used during the flight contributed significantly to its successful outcome.