

My student and I departed VFR from KCOU to KMBY. We had approximately 17 gal of fuel on board as indicated by our gauges, prior to taking off I visually checked each tank to verify there was fuel. I did not have a fuel dip stick. The estimated flight time was 18 minutes and would require 8 gallons of fuel. We departed on RWY 20 at approximately 7:00 pm and climbed to 3500 and continued VFR with no flight following. Ten minutes prior to landing, I was at 4000 MSL, flying on the right main tank which indicated 7 gallons at takeoff. When we were just under 10 miles from KMBY I began to experience engine roughness, so I immediately switched to the right tip tank which was indicating 5 gallons of fuel. This resolved the problem, and the engine ran smoothly again. We continued on to KMBY AT 4000 MSL until I was approximately 4 miles from the airfield. When I finally picked up the field, I saw four white on the PAPIs so I began my descent at approximately 800 fpm to intercept the glide slope. Shortly after we intercepted, the engine started to run rough again and I could tell it wasn't making much power. I immediately switched to the left tip tank which was also indicating 5 gallons, but this time it didn't power back up as before. With the engine still idling, I tried to restore power by cycling through the remaining three tanks from left to right, but was unsuccessful. I was now below glide slope with flaps at 40 degrees and trading altitude for airspeed. At this point I recognized I was not going to be able to make the airfield and decided to execute and emergency landing. The engine stopped running (no rotation) at approximately 100 ft AGL.