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COMMENTARY / THE CLASSIC INSTRUCTOR

Traffic Patterns and Near Misses

Recommendations for operations at a nontowered airport

BY STEVE KROG

RECENTLY WHILE WORKING on takeoffs and landings with a student, we experienced a bit of a surprise. Had it not been for seeing the shadow of another airplane, our landing outcome could have been much more "eventful" than it actually was.

We were doing pattern work, completing about six takeoffs and landings, when the event occurred. Radio communication was being used, and my student had announced that we were at midpoint on the left downwind leg, landing on turf Runway 18. No additional radio calls were made nor were any heard. We were flying a Piper J-3 Cub. At a point approximately 45 degrees off the approach end of the runway, a descending turn onto the base leg was initiated. The altimeter indicated we were about 500 feet AGL, and no other traffic was observed. A left turn onto the final approach was made, power was gradually reduced, and the glide path was established. As we approached the runway end and seconds before leveling and flaring, we spotted the shadow of an aircraft overtaking us. At my direction the student added full power and began a climbing left turn away from the shadow. As we did so a low-wing aircraft passed nearly over the top of us, touching down about 200 feet beyond our aircraft.

Though my student was quite shaken by the experience, thankfully, there was no harm done. After completing another half-dozen takeoffs and landings we concluded the flight. Then it was time to analyze the situation on the ground and turn the experience into a positive learning situation.

In another instance, again doing pattern work with a student, we were flying at 1,000 feet AGL. As we approached the approximate midpoint and made our radio call, we both spotted a Cessna 310 at our altitude and rapidly approaching from our right. I took control and made an immediate hard descent. We both looked up as the 310 passed overhead, easily within 100 feet. The 310 pilot never saw us as he was descending to pattern altitude with the intention of crossing over the airport at midpoint and entering downwind for a landing on Runway 29, the runway we were also using. Was the 310 pilot following the recommended procedure?

At the Hartford (KHXF) airport we have two runways that intersect: Runway 11/29 is 3,000 feet of hard surface, and Runway 18/36 is 2,000 feet of turf. They intersect at the approximate midpoint of both. On light wind days we frequently have two active runways. On one occasion I was checking an individual out in his newly acquired Luscombe 8A. We were using turf Runway 36. Prior to the takeoff we completed a 360-degree turn on the ground looking for airborne traffic and spotted none. A quick radio announcement was made, and we began our takeoff roll. Just as we began our liftoff and approaching the intersection, a landing aircraft was rolling out on Runway 29. He used a lot of brake action and stopped before the intersection. We learned from several observing folks on the ground that the landing aircraft had made a long and quite low straight-in approach to land and hadn't made any radio calls that the observers could recollect.

Here at Hartford, especially on weekends, we have helicopter, fixed-wing powered aircraft, ultralight, and glider and glider-towing operations taking place, often from at least two separate runways. The airport traffic pattern can be an interesting, sometimes confusing, area of operation, but it's an excellent training environment because of the mix of aircraft.

I sat down with the student with whom I was flying in the first example, and we began looking for traffic pattern information. Various flight-training manuals, both print and electronic, were searched with little success. Each define the traffic pattern elements but offer little in informing a pilot how to approach an airport and at what altitude, determine surface wind and favorable runway, and then safely enter the traffic pattern.

We then turned to the *Federal Aviation Regulations/Aeronautical Information Manual* (*FAR/AIM*). Section 3, Airport Operations, devotes nine full pages to the airport traffic pattern. But it proved to be of little help as much of the information pertained to towered airports and airport illustrations defining each part of the traffic pattern.

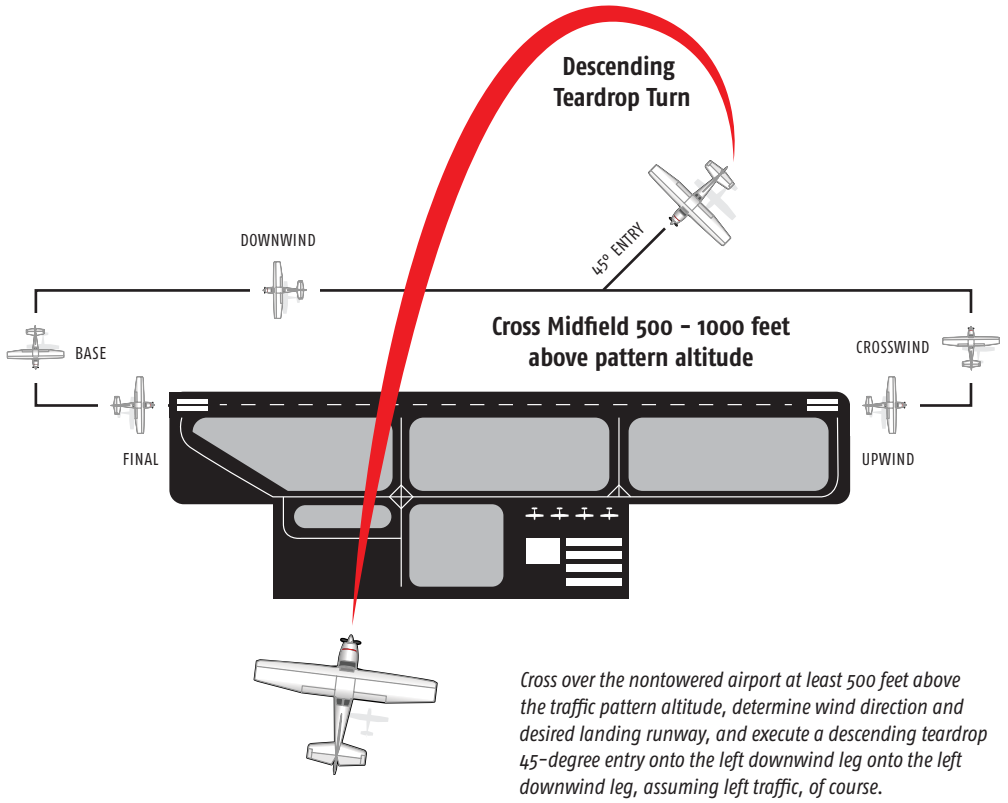
What altitude should be used when approaching a nontowered airport? How should one approach it? Over the top? Fly around the perimeter? At what point and at what altitude should the traffic pattern be entered? Is a straight-in approach legal? Safe?

Together, my student and I continued our search for answers and turned to the FAA website. This isn't the most user-friendly website, but with patience and a good deal of persistence, the needed information for which you are searching can be found. Manuals, training info, and several other menu items were searched to no avail. Then we turned to advisory circulars and found the answer: *Advisory Circular (AC) No. 90-66A, Recommended Standard Traffic Patterns and Practices for Aeronautical Operations at Airport Without Operating Control Towers.* I highly recommend that all general aviation pilots who fly primarily for pleasure at nontowered airports download and read the AC — you can find a link at *www.EAA.org/extras*. It may save you from experiencing a safety-compromised situation at some point.

The FAA has never issued any hard and fast regulations specific to airport traffic patterns. Rather, you'll find the phrase "it is recommended" frequently used when dealing with an airport traffic area and pattern.

Here are the key points as recommended by the FAA (AC 90-66A) when operating in a nontowered environment:

- The use of any traffic pattern procedure does not alter the responsibility of each pilot to see and avoid other aircraft.
- Prior to entering the traffic pattern at a nontowered airport, aircraft should avoid the traffic flow until established on the entry leg. Wind and landing direction indicators can be checked while at an altitude above the traffic pattern.
- When the proper traffic pattern direction has been determined, the pilot should then proceed to a point well clear of the pattern before descending to the pattern altitude.
- Arriving aircraft should be at the appropriate traffic pattern altitude before entering the pattern with entry made at a 45-degree angle [to a point] abeam the midpoint of the runway.
- The traffic pattern altitude should be maintained until the aircraft is at least abeam the approach end of the landing runway on the downwind leg.
- The base leg turn should begin when the aircraft is at a point approximately 45 degrees relative bearing from the runway threshold.
- Aircraft remaining in the traffic pattern should not begin a turn to the crosswind leg until beyond the departure end of the runway and within 300 feet below traffic pattern altitude.



Cross over the nontowered airport at least 500 feet above the traffic pattern altitude, determine wind direction and desired landing runway, and execute a descending teardrop 45-degree entry onto the left downwind leg onto the left downwind leg, assuming left traffic, of course.

When putting these recommendations to practice, I like to have my students approach an airport at least 500 feet above the published traffic pattern altitude and cross over the field at the approximate midfield point. The flight path may need to be altered slightly to better see the windsock or wind tetrahedron. Once the wind direction has been determined and the appropriate runway selected, proceed away from the traffic area so as to position yourself to enter the pattern on a 45-degree angle to the downwind leg midpoint. The descent to traffic pattern altitude should be done simultaneously.

Practicing the recommendations may seem like a waste of time, especially if no other traffic is observed or heard. Let common sense be your guide. Two or three extra minutes of flight may save you and others from a situation as described above. EAA

Steve Krog, EAA 173799, has been flying for more than four decades and giving tailwheel instruction for nearly as long. In 2006 he launched Cub Air Flight, a flight-training school using tailwheel aircraft for all primary training.

ILLUSTRATION BY **BRANDON JACOBS**