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COMMENTARY / THE CLASSIC INSTRUCTOR

Entering the Traffic Pattern

What's safe, what isn't?

BY STEVE KROG

HOW DO YOU ENTER the traffic pattern? What considerations do you make to determine the entry? Very simple questions, but I get numerous differing answers when discussing among pilots.

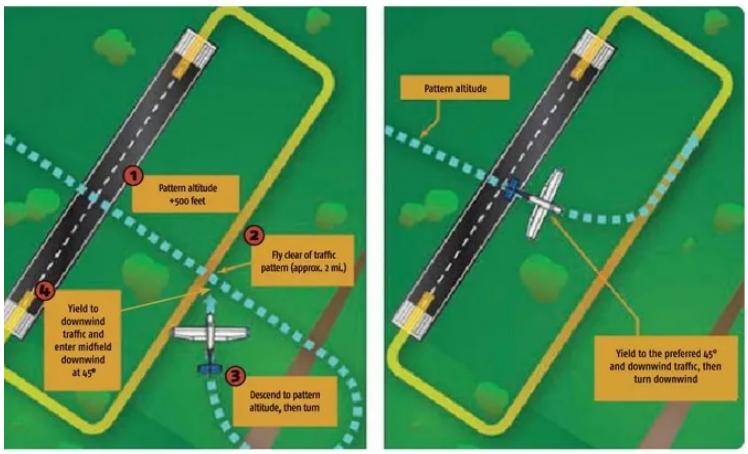
Entering the traffic pattern at a nontowered airport is a primary point where accidents/incidents occur. Yet, many of us pilots have become complacent and forget to exercise vigilance.

There are six recognized methods for entering a traffic pattern:

1. **Straight in:** usually employed for practicing instrument approaches.
2. **A 45-degree entry to downwind:** a longtime, traditional method.
3. **Midpoint crosswind to downwind:** somewhat common when approaching from the opposite side of the downwind leg.
4. **Military-style 180-degree overhead break to downwind:** frequently seen when a group of experienced individuals are practicing formation flight.
5. **Midpoint crosswind to teardrop entry:** a relative new FAA accepted entry.
6. **Upwind:** a safe entry when approaching the airport opposite the side of the downwind leg.

Figure 1

The FAA's revised pattern entries.



There is a time and place for most of these pattern entries, but for safety reasons, some of the entries may not be suitable for a given situation.

Entering the traffic pattern is a nonevent at a towered airport. Controllers are monitoring the traffic and maintaining separation visually and with the aid of radar. However, traffic pattern activity at nontowered airports can get quite interesting. It is a see and be seen, talk and listen environment requiring knowledge, professionalism, and courtesy to operate safely.

About four years ago the FAA issued a new advisory circular offering recommendations for how to enter a traffic pattern at a nontowered airport. I included these suggestions in an article I wrote in January 2018. After more study, personal observations, and discussions with local pilots who frequently fly, I question the midpoint teardrop pattern entry.

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WHAT IF?

Here's a scenario. You are approaching an airport from the south. The airport to which you are flying has a 09/27 runway. Surface wind is 070 degrees at 11 knots (favoring the use of Runway 09), the published traffic pattern altitude is 1,000 feet AGL, and the field elevation is 1,070 feet MSL. Three aircraft are already in the pattern and using the radio. One is just lifting off, a second is on downwind, and the third is turning base to final, and all are remaining in the pattern. You are flying a low-wing aircraft currently positioned 7 miles south of the field and at 1,800 feet AGL. What is your plan of action for the traffic pattern entry?

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Your first thought might be to enter the traffic pattern at midpoint while descending to pattern altitude, and then turn left onto the downwind leg. But where are the other aircraft in the traffic pattern? A vigilant, safety-conscious pilot will announce their position while still outside of the airport traffic area stating position, altitude, and intentions. The other aircraft have now been alerted and can watch for you as you try to establish visual contact with them.

This plan is perfectly legal, but is it safe? You are flying a low-wing aircraft and descending to pattern altitude. What could possibly be wrong with this?

Aircraft positioned at an altitude below you cannot be seen due to your wing obstruction, so descending into the pattern is a safety concern. If any of the other three aircraft in the pattern are high-wings, they cannot see above their wing and are unable to see your descent until both aircraft reach traffic pattern altitude. Valuable time is spent with no visual contact. Finally, unless you can clearly see and maintain visual contact with the three aircraft, and can establish safe spacing, this traffic pattern entry may not be the safest to use in this situation.

A second-choice traffic pattern entry — and one that I do not care for — is crossing the field at midpoint, extending your flight path beyond the normal downwind leg track by about one-half mile, then turning right for a teardrop 45-degree entry to the downwind leg. This is a legal pattern entry, but how safe is it given there are three aircraft in the traffic pattern?

If you approached above pattern altitude as the FAA recommends but slowly descended while crossing the field, you cannot see aircraft below you because of wing obstruction. Crossing just above pattern altitude prevents the high-wing aircraft from seeing you as well. The decision is made then to cross the field at traffic pattern altitude for best visibility for all. But now clear of the downwind leg, the shallow-to-medium 180-degree teardrop right turn is initiated to establish the 45-degree entry onto the downwind leg. The left wing is in the air blocking the view of anything to the left. You are now blind to other aircraft established in the pattern that may have just turned downwind due to the blind spot created by the raised wing. Any possible visual contact with aircraft beyond the left wing has been lost.

Another situation that can possibly occur with this entry might be if a larger aircraft like a Cessna 421 enters the traffic pattern at about the same time. Larger, heavier aircraft usually fly a wider pattern using 1,500 feet AGL for the pattern altitude. A teardrop entry can position you directly in the flight path of the 421. For these reasons, I do not like this entry.

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The best and safest method for entering the traffic pattern in this scenario is to enter it on the upwind leg at the approximate midpoint and at traffic pattern altitude. A simultaneous radio call stating your position and intention allows all other pattern traffic to look for you, establish visual contact, and eliminate a blind spot for you or the other pilots in the pattern.

Once established on the upwind leg, turning left onto the crosswind leg can be done approximately over the runway numbers. Again, pilot discretion is needed here. If a high-performance aircraft has just taken off and is remaining in the pattern, you may not want to cross over the runway end and enter the downwind leg in front of the aircraft. Use discretion and extend the upwind leg to allow for spacing and to avoid creating a situation where you can be overtaken by the faster aircraft.

Figure 2

Entering the pattern on the upwind leg allows a pilot time to visually identify the location of all other aircraft in the pattern.

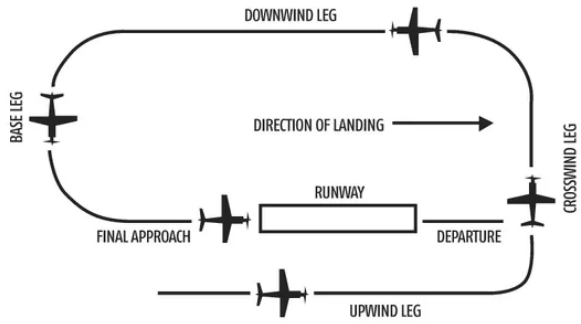
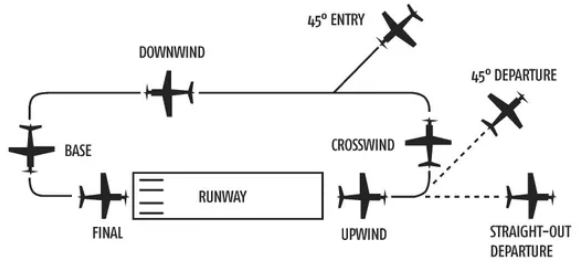


Figure 3

Entering on a 45-degree to downwind is a safe pattern entry provided one is not descending into the pattern and has visual contact with other aircraft.



By entering the traffic pattern on the upwind leg, a pilot has time to establish visual contact with traffic while having flexibility to alter the pattern and airspeed as needed to maintain safe separation.

If your arrival is on the downwind side of the desired runway, flying southward toward the airport and Runway 09, the pattern entry of choice is the traditional 45-degree to downwind leg entry. It is safe except when encountering either of two situations. First, if flying a low-wing aircraft and descending into the pattern, the pilot's visual scan is obstructed by the low wing should there be traffic just below. Good radio communication while entering at the published pattern altitude should eliminate this potential traffic conflict.

The second situation occurs when a pilot flies an extremely wide and long pattern. If you're practicing takeoffs and landings while flying a normal pattern, the needed head swiveling becomes a blur if an arriving transient aircraft calls midpoint downwind while you are also at the midpoint. There's traffic out there somewhere, but there isn't anything there when scanning the normal pattern track. That is, until you look to your right and locate the aircraft flying a 1-mile-wide downwind leg.

Is this legal? Certainly. But the transient pilot probably flies at a towered airport most of the time and is unaccustomed to flying normal, tight patterns at nontowered airports. Again, if good radio communications, detailed scanning, judgement, and safety are practiced, this situation will not be a problem.

The scenarios used in these examples show the weaknesses, or potential compromised safety points, of each. Something as simple as entering the traffic pattern can become quite complex. Often, little thought is used as a pilot will enter the traffic pattern as they have always done, without full consideration of all other variables at that given time.

There is a time and a place for using any of the six possible traffic pattern entries. Common sense, visual awareness, and safe practices will help you select the proper entry and prevent a possible situation that can lead to a serious incident in the pattern.

Keep your eyes out of the cockpit and look for traffic whenever in the traffic pattern. Then, finish each flight relaxed and with a smile of satisfaction. EAA

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