Attention

Tower: “Enter right downwind 27 report midfield.”

Objective

To understand the basics of standard traffic patterns that can be applied at most any airport.

Schedule

Ground instruction – 30 minutes
Air instruction – continuous

Reference Material

Airplane Flying Handbook FAA-H-8083-3B

What

Every flight begins and ends at an airport or other suitable landing field; therefore, it is essential that pilots learn the traffic rules, traffic procedures, and traffic pattern layouts that may be in use at various airports.

To assure that air traffic flows into and out of an airport in an orderly manner, an airport traffic pattern is established based on the local conditions, to include the direction and altitude of the pattern and the procedures for entering and leaving the pattern.

A pilot is not expected to have extensive knowledge of all traffic patterns at all airports, but if the pilot is familiar with the basic rectangular pattern, it is easy to make proper approaches and departures from most airports, regardless of whether or not they have control towers.

Why

Compliance with the basic rectangular traffic pattern reduces the possibility of conflicts at airports without an operating control tower. It is imperative that a pilot form the habit of exercising constant vigilance in the vicinity of airports even when the air traffic appears to be light. Midair collisions usually occur on clear days with unlimited visibility. Never assume you have found all of the air traffic and stop scanning. The use of any traffic pattern, service, or procedure does not diminish the pilot’s responsibility to see and avoid other aircraft during flight.

Material

<u>Which Way do We Takeoff and Land</u>

For the rest of this lesson ‘runway’ will be not only the piece or large pavement used but the direction you are using. For each piece of pavement there are actually two runways.

On any runway you will see giant runway numbers at both ends. The number indicate which way you takeoff and land. Cobb County International Airport (KRYY) has runways 9 and 27. You can use 9 to takeoff/land to the east and 27 to takeoff/land to the west. When they tower has controllers they will tell you which runway to use. When the tower is closed or if you are at an airport without a tower, you determine which runway.

When it is up to you how do you determine? Takeoff and land into the wind unless there is a good reason to use the opposite direction. If there is already someone in the pattern and it is a relatively calm day you will likely have to use the same direction as them.

At a non towered airport with many runways you might also factor where you parked closest to. If you are at the Rome airport (KRMG) when the winds are light from 130 you could use runway 7 or 19 if you don't need to consider length of runway.

How to determine which way the winds are coming from? Listen to the current weather or fly over the windsock. The windsock 'points' to the runway to use.

<u>The Standard Pattern</u>

Figure 1 shows a standard rectangular traffic pattern. The traffic pattern altitude is usually 1,000 feet above the elevation of the airport surface. The use of a common altitude at a given airport is the key factor in minimizing the risk of collisions at airports without operating control towers.

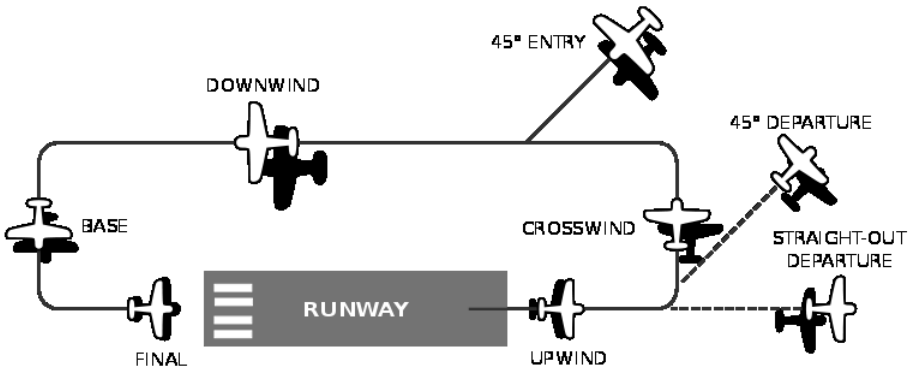


Figure 1

When approaching an airport for landing, the traffic pattern is normally entered at a 45° angle to the downwind leg, headed toward a point abeam the midpoint of the runway to be used for landing. When arriving, the pilot should be aware of the proper traffic pattern altitude before entering the pattern and remain clear of the traffic flow until established on the entry leg. Entries into traffic patterns while descending create specific collision hazards and should always be avoided.

The downwind leg is a course flown parallel to the landing runway, but in a direction opposite to the intended landing direction. This leg is flown approximately 1⁄2 to 1 mile out from the landing runway and at the specified traffic pattern altitude. When flying on the downwind leg, the pilot should complete all before landing checks and extend the landing gear if the airplane is equipped with retractable landing gear. Pattern altitude is maintained until at least abeam the

approach end of the landing runway. At this point, the pilot should reduce power and begin a descent. The pilot should continue the downwind leg past a point abeam the approach end of the runway to a point approximately 45° from the approach end of the runway, and make a medium bank turn onto the base leg. Pilots should consider tailwinds and not descend too much on the downwind, so as to have a very low base leg altitude.

The base leg is the transitional part of the traffic pattern between the downwind leg and the final approach leg. Depending on the wind condition, the pilot should establish the base leg at a sufficient distance from the approach end of the landing runway to permit a gradual descent to the intended touchdown point. The ground track of the airplane while on the base leg is perpendicular to the extended centerline of the landing runway, although the longitudinal axis of the airplane may not be aligned with the ground track when it is necessary to turn into the wind to counteract drift. While on the base leg, the pilot must ensure, before turning onto the final approach, that there is no danger of colliding with another aircraft that is already established on the final approach. Pilots must not attempt an overly steep turn to final, especially uncoordinated! If in doubt, go around.

The final approach leg is a descending flightpath starting from the completion of the base-to-final turn and extending to the point of touchdown. This is probably the most important leg of the entire pattern, because of the sound judgment and precision required to accurately control the airspeed and descent angle while approaching the intended touchdown point. 14 CFR part 91, states that aircraft, while on final approach to land or while landing, have the right-of-way over other aircraft in flight or operating on the surface. When two or more aircraft are approaching an airport for the purpose of landing, the aircraft at the lower altitude has the right-of way. Pilots should not take advantage of this rule to cut in front of another aircraft that is on final approach to land or to overtake that aircraft.

Airports with Towers

At airports with operating control towers, the tower operator can instruct pilots to enter the traffic pattern at any point or to make a straight-in approach without flying the usual rectangular pattern. Many other deviations are possible if the tower operator and the pilot work together in an effort to keep traffic moving smoothly. Jets or heavy airplanes will frequently fly wider and/or higher patterns than lighter airplanes, and in many cases, will make a straight-in approach for landing.

Airports without Towers

Non towered airports traffic patterns are always entered at pattern altitude. How you enter the pattern depends upon the direction of arrival. The preferred method for entering from the downwind leg side of the pattern is to approach the pattern on a course 45° to the downwind leg and join the pattern at midfield.

There are several ways to enter the pattern if you are coming from the upwind legs side of the airport. One method of entry from the opposite side of the pattern is to announce your intentions and cross over midfield at least 500 feet above pattern altitude (normally 1,500 feet AGL.) However, if large or turbine aircraft operate at your airport, it is best to remain 2,000 feet AGL so

you're not in conflict with their traffic pattern. When well clear of the pattern—approximately 2 miles—scan carefully for traffic, descend to pattern altitude, then turn right to enter at 45° to the downwind leg at midfield. [Figure 7-4A] An alternate method is to enter on a midfield crosswind at pattern altitude, carefully scan for traffic, announce your intentions and then turned down downwind. [Figure 7-4B] This technique should not be used if the pattern is busy.

Always remember to give way to aircraft on the preferred 45° entry and to aircraft already established on downwind. In either case, it is vital to announce your intentions, and remember to scan outside. Before joining the downwind leg, adjust your course or speed to blend into the traffic. Adjust power on the downwind leg, or sooner, to fit into the flow of traffic. Avoid flying too fast or too slow. Speeds recommended by the airplane manufacturer should be used. They will generally fall between 70 to 80 knots for fixed-gear singles, and 80 to 90 knots for high-performance retractable.

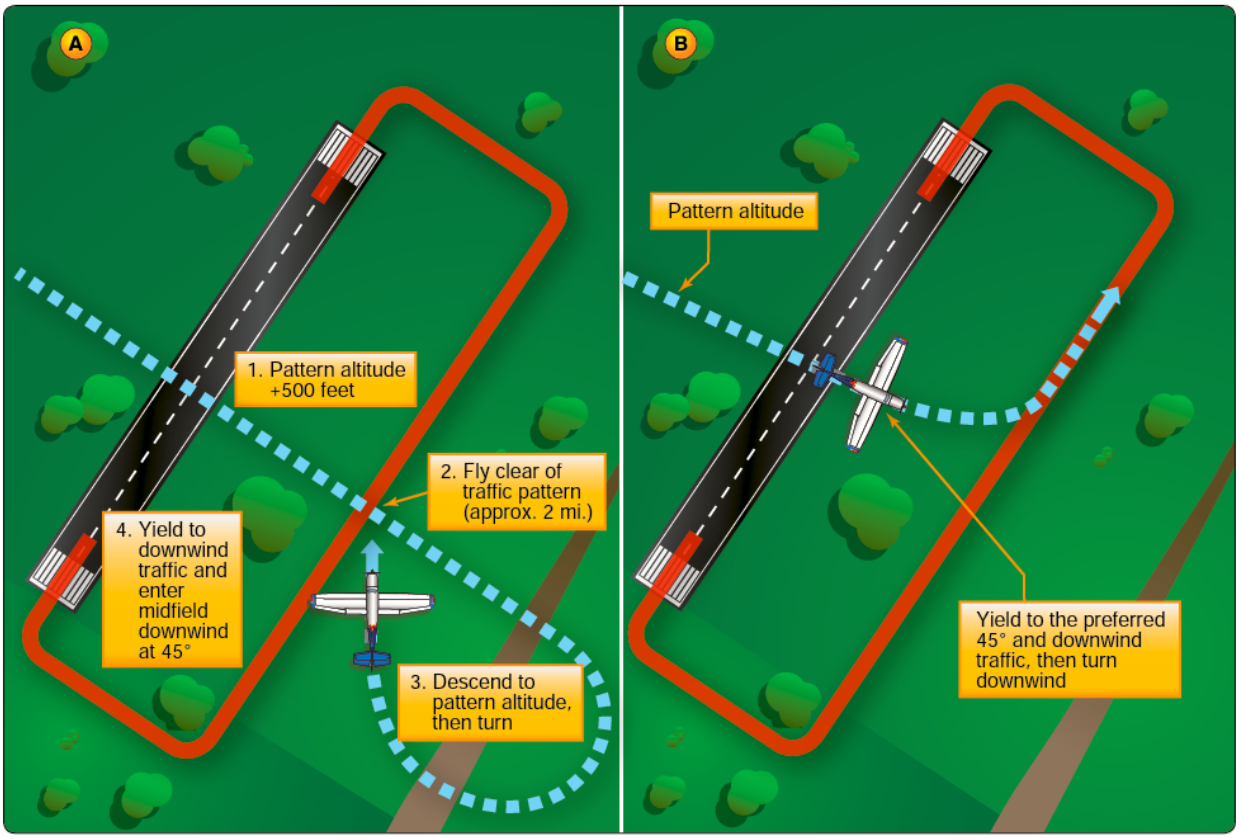
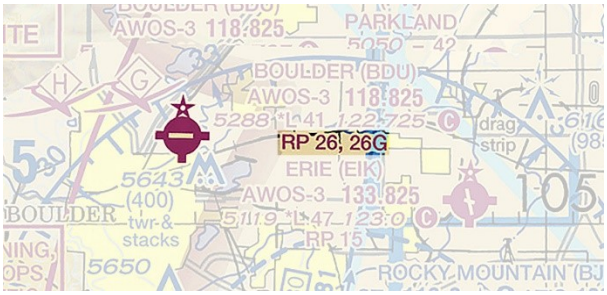


Figure 7-4. *Preferred entry from upwind leg side of airport (A). Alternate midfield entry from upwind leg side of airport (B).*

Right or Left Traffic?

Standard traffic pattern turns are always to the left, unless the airport specifies it otherwise.

How would you know if an airport or runway has right-turn patterns? It will be marked on the VFR sectional, the Chart Supplement, Foreflight as well as other apps, and if the airport has it, the traffic pattern indicator located around the windsock.



Can't I Just Fly Straight In?

Towered Airport: Yes if you are flying into a towered airport and they allow you to.

Non Towered Airport: Yes if you are cleared by ATC on an instrument approach in IMC. Yes if you are practicing an instrument approach. If you do make sure to make radio calls every couple of miles. If you do not hear anyone do not assume there is nobody else around, planes are allowed to fly without using the radios at most non towered airports. Also consider people using ultralights that have no radios and are hard to see.

Watch Out for Human Strikes

Pay special attention to airports with jumpers.