Watch for Traffic

Every pilot flying outside the clouds has a responsibility to see and avoid other airplanes. The challenge is that other aircraft are really hard to see in the air until they are so close that it's almost too late. It's also easier to see an aircraft that's crossing your path ahead of you, and consequently not a threat, than an aircraft that's heading straight for you.

Typically, a pilot increases the chances of spotting another aircraft by pausing his or her eyes to look carefully at each segment of the sky. Just sweeping your eyes across the sky doesn't allow the focus needed to spot a small airplane while it's still far away. The farther away an airplane is when spotted, the less aggressive the pilot must be to avoid a collision.

Certain places attract more airplanes, such as established routes, popular cruising altitudes, and, of course, airports. To keep all that traffic converging on an airport organized, aircraft follow established traffic patterns. (See "The Traffic Pattern" on page 35.)

You can concentrate your scan for traffic during takeoff and landing on the segments of this rectangular pattern.

Because the traffic pattern has a specific altitude, most of the aircraft will be at the same altitude you are. Since most mid-air collisions happen in the traffic pattern on good-weather days, it pays for everyone on board to pay attention to the skies when coming into the airport to land. As you develop an understanding of radio calls, you'll hear aircraft use these terms when they announce their positions, and you'll have a better idea where to look for them.

Of course, not all aircraft follow the standard traffic pattern (whether out of disregard, operational reasons, or for an emergency), so a pilot cannot limit the scan to just the normal traffic pattern.

While the traffic scan shouldn't totally disappear during cruise flight, it's most critical when you're arriving and departing from airports.

THE TRAFFIC SCAN

Divide the world outside the windshield or side windows into segments of 10 degrees along the horizon. Pause and focus your eyes within each segment to spot traffic. Any traffic that's a concern for you would be within a few degrees above or below the horizon.

Teach other passengers to scan (so long as it doesn't make them overly concerned about a mid-air collision). Kids enjoy this task, but ensure they have maturity to do so. Passengers may be able to see traffic in the pilot's blind spots as well.

THE TRAFFIC PATTERN
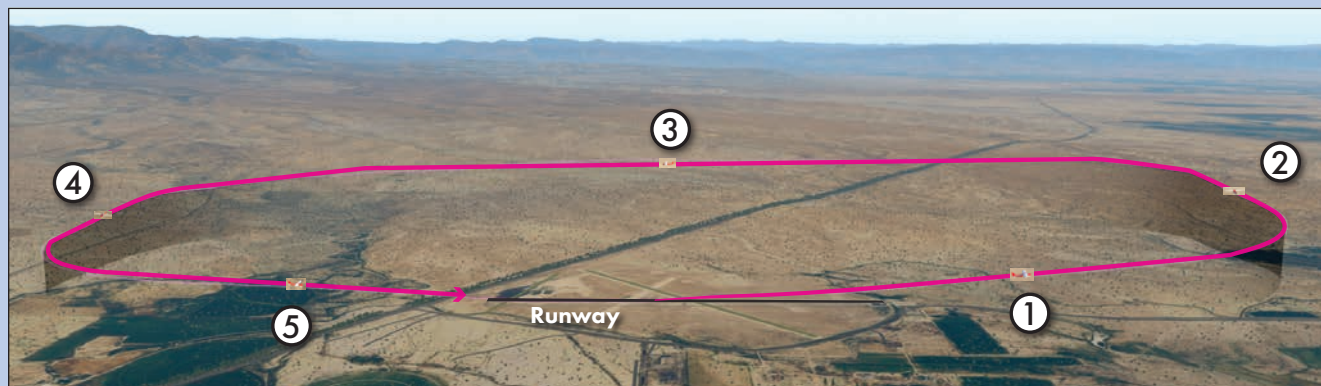
① On the **upwind** leg or departure leg, the airplane leaves the departure runway and climbs skyward, into the prevailing wind.

② The **crosswind** leg establishes a good distance from the runway and gives the airplane more room to climb to pattern altitude.

③ The **downwind** leg gives the pilot time to configure the airplane, to check the strength of the wind, and to begin bringing the airplane to approach speed. Airplanes often merge into this leg as they arrive at an airport.

④ The **base** leg allows the pilot to descend and slow down more, and get into position to turn into alignment with the runway. The pilot often corrects towards the runway to account for the wind—since you normally land an airplane into the wind.

⑤ On the **final** leg, sometimes called "final approach," pilots align the airplane with the runway, to land straight ahead. You may find it easier to make an emergency landing from a long final (page 62) instead of a pattern.
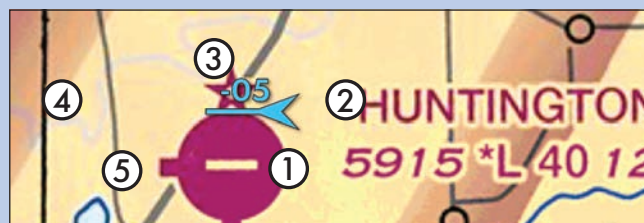
DIGITAL TRAFFIC DISPLAYS
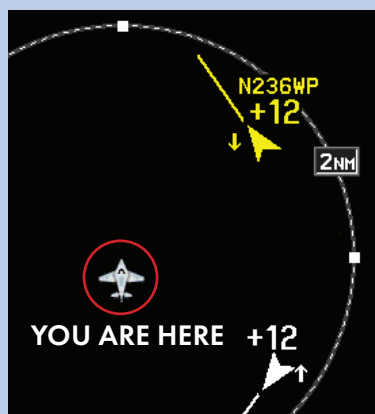
Traffic can appear on cockpit displays or tablets as well. The display may simply show the presence of another aircraft on a map view. Other times it could show the direction of that aircraft's flight with a line, the relative altitude to you (with a + or - and a number representing hundreds of feet above or below you), and an up or down arrow showing if the other aircraft is climbing or descending. A potential collision hazard usually appears in yellow. The yellow target (upper left) is 1200 feet above you, descending, and a potential threat.

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