



# The Traffic Pattern

Pay attention to what happens every time

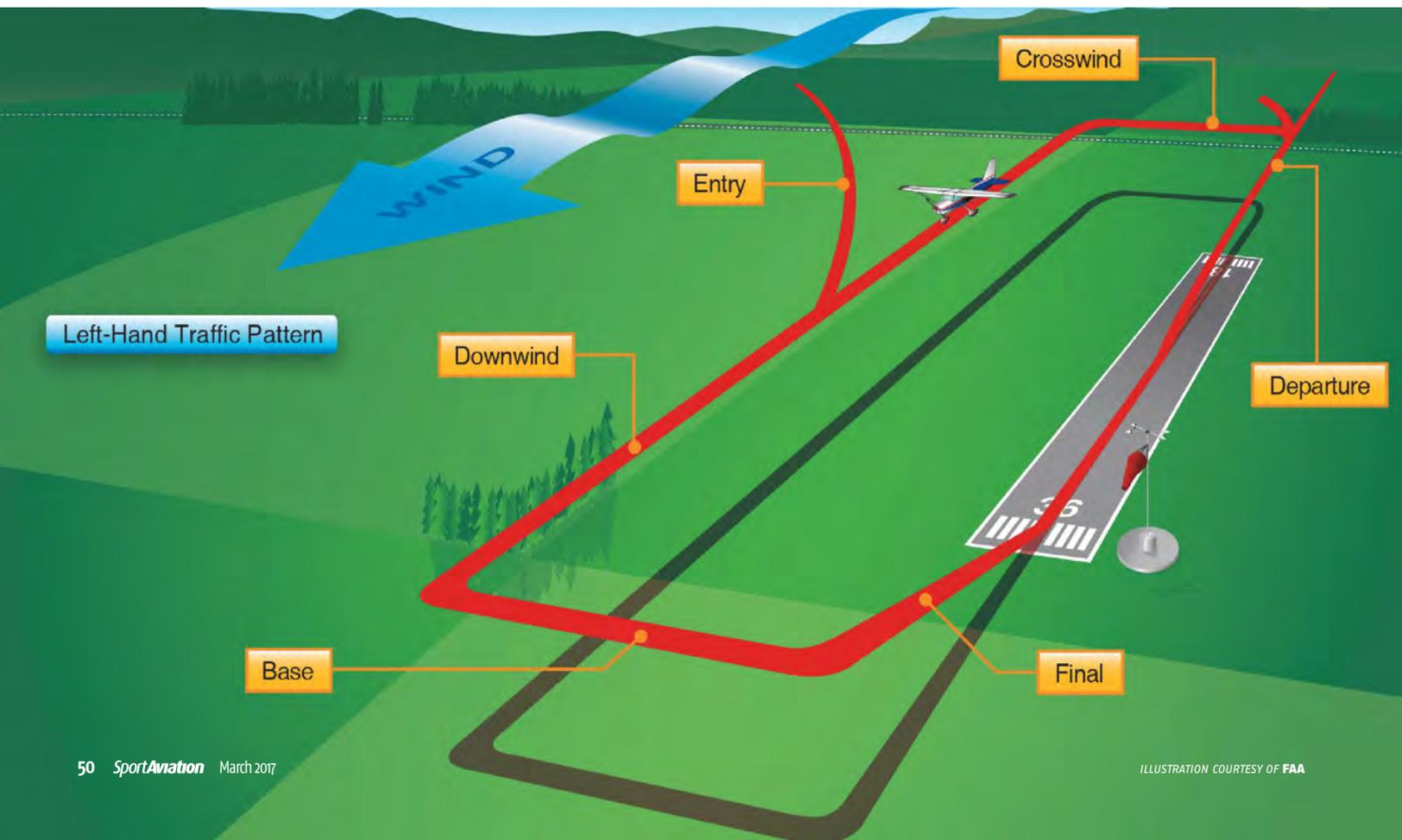
BY JEFF SKILES

**THERE ARE A NUMBER** of writers in this magazine who write about flying technique sharing from their wellspring of experience and knowledge. I can't say that I have Steve Krog's teaching skills or Robert N. Rossier's ability to analyze and explain flight maneuvers, but I do have a few thousand hours as a flight instructor in my log-book and have developed some observations regarding common pilot tendencies.

Flying an airplane puts one in a dynamic, fast-changing environment with countless variables that almost always must be assessed and addressed in short order. I think this is shown in no greater degree than in the traffic pattern, where I see the same tendencies

over and over in both students and myself. Understanding them can help us all compensate and be better pilots.

A good, safe landing is not an accident; it follows a carefully crafted pattern that is designed to place the airplane on the correct glide path, in the right configuration, and at the proper speed when crossing the numbers, thus minimizing the uncertainty of a novel, new flying experience every time we land.



**THE DOG TRACK APPROACH**

Many pilots I fly with prefer an arcing oval pattern reminiscent of a dog track. The crosswind and base leg are conspicuously missing, and the pilot is constantly working the throttle to adjust the glide path. The aircraft is alternately high or low. Often both within a disturbingly short period of time. The approach speed reflects a similar scarcity of discipline, and the landing generally displays the fruits of this lack of consistency.

**CONSISTENCY**

My day job is flying an airliner, and in airline flying we take great pains to make every approach and landing identical to the last. In fact, we try to make everything in between as similar as possible as well. There is a bright line between the right way and the wrong way, and consistency is prized.

A big part of consistency is recognizing those things in our environment that happen every time. Foot stomper here, *every time!* There's a lot happening in the traffic pattern that must be clearly understood so let's go once around for practice.

**WHERE'S THE WIND**

We're about to take the runway, and the before-takeoff checklist is complete. Let's pause here to refresh our memory about where exactly the wind is coming from. Its most likely some sort

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of crosswind. What does that mean for the position of our ailerons and for the strength of any weathervane tendency, which we must compensate for with extra rudder.

What's that mean for our drift after liftoff?

We add in the throttle and accelerate down the runway. Most aircraft have clockwise turning propellers, and the nose of the aircraft will veer to the left *every time*. Why not add in some right rudder — right now — to keep the airplane on the centerline rather than waiting until we get off to the left before compensating. Generally, *correcting* now takes half as much thought and effort as *reacting* later.

If you're in a tailwheel aircraft like my Cessna 185, when the tail wheel leaves the ground you will lose its stabilizing effect, and the nose of the aircraft will veer further left, *every time!* So, as the stick goes forward simultaneously give it some additional right rudder.

#### LET IT FLY

When you feel that lightness to the wings, let it fly. Some forget this and barrel down the runway at high speed risking a loss of control incident. This is particularly dangerous if you're weaving back and forth to regain the centerline because you haven't heeded the previous two paragraphs. An airplane was meant to fly; let it do so.

Once in the air, crab a few degrees into the wind to stay over the runway. The idea of a pattern is to maintain a rectangular ground track; planning for wind is part of that.

For instance, as you turn to crosswind think about what heading you are going to roll out on. If you took off on Runway 27 and are making a left pattern, a heading of 180 will only allow you to be blown downwind. The wind will likely be stronger at altitude too, so let's try 190 for starters. You can fine-tune later as you judge your ground track visually.

#### DOWNWIND LEG

As you level out on downwind at pattern altitude the aircraft will accelerate *every time*. Pull the throttle back to something reasonable. Don't accelerate to cruise when you will only have to decelerate 15 seconds later. My 185 is an early model and has a ridiculously low maximum flap speed of 110 mph. I leave 10 degrees of flap down after take-off and immediately throttle back to 17 inches of manifold pressure as I level out. This leaves

me cruising along on downwind at precisely the top of the white arc. Your airplane will have a different configuration, but it will be consistent.

If you're in a carbureted airplane, pull on the carb heat at midfield. This will give a few seconds to melt that ice out at high exhaust temperature before reducing power. I'm no mechanic by any means, but I was taught this practice, and it sounds logical to me. The more common technique I observe seems to be to apply the carb heat at or after power reduction.

## Planning for what happens *every time* allows us to free up brain power for what is different and unique in our environment.

#### HOLD YOUR PITCH ATTITUDE

When you're about to come opposite the numbers on downwind, begin pulling your power back to approach settings. You'll notice I said coming up on the numbers, not after the numbers are behind your wing. And here is where the most common failure to heed the *every time* rule happens.

As the student, your eyes usually are focused like a laser beam on the tachometer as you try and set a precise amount of power. As the instructor, my eyes are focused on the horizon watching the nose fall as the airplane seeks trim speed because it happens — what? *Every time!*

Is it important that you have precisely 1500 rpm instead of 1550? Not really. But it is important that you keep the airplane in level flight. Your eyes should be outside the airplane level while you slow and add flaps. Periodically glance at the tachometer to set engine power.

#### "SET IT — AND FORGET IT!"

And about that power, as Ron Popeil used to say while hawkling the Ronco Showtime Rotisserie Oven on late night TV, "Set it — and forget it"! No throttle jockeying! You may have to make an adjustment later, but ideally the power should stay at its present setting

until closing the throttle in the flare. As you come around the pattern, the flap settings and speeds will be unique to your aircraft so I'll let you figure that out on your own.

When the runway is 45 degrees behind your shoulder, and you're turning base, remember once again where the wind is coming and add in a crab to keep the ground track perpendicular to the runway.

#### THE PATTERN IS RECTANGULAR

Here's where the second most common pattern failing occurs. For some reason our brains tell us to turn and line up with the runway early, and we tend to make sort of a 45-degree entry to final. This tendency seems particularly common when the airplane is high on approach, which only shortens the distance to landing and compounds the problem.

Usually the failure to recognize what happens *every time* leaves us high and fast on approach. So, reduce power, slow, and/or slip, and let the airplane descend to a normal glide path, then return the power back to approach setting. What I just said is important. There aren't several different acceptable glide paths; there's only one. Slip or slow to descend to the proper glide path, or if you're low, add power and level out until returning to the proper glide path, then adjust power and continue the approach normally.

#### ON SPEED, ON GLIDE PATH

All of this will have the aircraft crossing the numbers in position to land. If it didn't work out so well this time around, and it doesn't always work out for me either, decide what you're going to do differently next time. Usually adjusting when you turn base leg will solve any descent profile problems.

Much of this can be thought through in your mind and cemented in your muscle memory before you ever even get to the airport. We all only have so much bandwidth, and for most of us it shrinks with every passing year. Planning for what happens *every time* allows us to free up brain power for what is different and unique in our environment. Flying a consistent pattern is an important step in making a good, safe, and consistent landing. *EAA*

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