

Traffic Patterns and Non-Towered Ops

From pattern entries to best practices to self announce, there are few topics more contentious than pilot behavior in the traffic pattern—particularly at non-towered airports. What actions make the most sense for safety and helping everyone get along?

🕂 Talking and Listening 🖛

Ryan: At non-towered airports, the busier it is the more important communication is. At the same time, the busier it is the more aircraft there are making calls—and the more congested the frequency becomes.

Wally: It's more important to listen. Maintain situational awareness and learn where the other airplanes are. The AIM lists good guidelines about when to report. Most pilots report way more times than is recommended. All those extra reports just clog the frequency.

Dave: Don't assume that you're being heard when you transmit. There are myriad reasons why that might not have been heard.

Doug: Communication is a two-way street, and listening is just as important as talking. A lot of pilots fail to listen.

Dave: Be predictable. Be in the place where you would be expected to be, and be clear and concise on the coms, and you're doing your part.

Wally: We've all heard pilots make the mistake of reporting the opposite cardinal direction. Before you transmit, look at the bottom of your compass card. That shows where you are from the airport.

- When Your Mind Has Gone West -

I made that mistake [of reporting the opposite cardinal direction] once when I was heading directly west into the setting sun and I said I'm west.

And afterwards I just thought, "What a dunce. You've got your sunglasses on and your visor down, because of this brilliant setting sun and yet you misreport which way you're pointed."

We've all done it. "

-Dave

Doug: The function of radio calls is to help other pilots see you. So the best time to make them is when the plane is most visible: in turns.

- Naming Yourself -

Catherine: I'm a fan of saying the aircraft type, like "Cessna" or "Skyhawk." It gives a sense of what kind of speeds to expect. I give the tail number for folks with ADS-B-In. Sometimes seeing the tail number on my screen helps assemble a picture of where everybody is. Something like "white and red Piper" doesn't help me, because from a distance most airplanes look white.

Doug: When you're approaching the airport, per the AIM the first call is about 10 miles out. I hear people say 10 miles out without the cardinal direction, and that doesn't help. If they say the tail number, I can check the iPad for the ADS-B target to see where they are and what kind of closure rate to expect.

Wally: I typically give the full callsign on the first call and shorten it to the last three after. It's a little more concise.

Doug: There's a big difference between a Cub and a Malibu, or a Navajo, but they're all Pipers. In my Super Cruiser, I'll say "red and white taildragger." That tells other pilots what they're looking for.

Traffic Pattern Direction and Dimensions -

Catherine: If a left traffic pattern has been designated for the airport, fly that. 14 CFR 91.126 makes that mandatory. "PIC authority" isn't a reason to deviate from it, except in an emergency.

§ 91.126 Operating on or in the vicinity of an airport in Class G airspace.

(b) Direction of turns. When approaching to land at an airport without an operating control tower in Class G airspace -

(1) Each pilot of an airplane must make all turns of that airplane to the left unless the airport displays approved light signals or visual markings indicating that turns should be made to the right, in which case the pilot must make all turns to the right; and

(2) Each pilot of a helicopter or a powered parachute must avoid the flow of fixed-wing aircraft.

Airmanship 2.0

Wally: Traffic pattern width depends on the kind of airplane you're flying. Of course, when Dave shows up in his Citation he's going to fly a wider downwind than I will in my Champ. With common courtesy and a little understanding we can all make it work.

Catherine: Awareness is important because you have different airplanes operating at different distances from the airport. I've actually seen two planes wing to wing with each other, both on the downwind, but neither one knew the other was there.

Dave: The busier the airport, the wider the pattern seems to get. That just slows things down even more. I was trained that you want to be within gliding distance of the runway. That's not always realistic, but try to be in the same zip code.

Dave: You get such great visual cues if you're flying a tight, standard, repeatable pattern. It's better for students to learn. So I like to see, and I like to perform, reasonably tight patterns.

- Pattern Entries -

Catherine: A modified version of the opposite-side entry is to enter upwind and then turn crosswind when appropriate to sequence seamlessly with downwind traffic. There's nothing wrong with that technique, and I prefer it.

Dave: I'm also a fan of the midfield crosswind entry. Pilots doing it that way typically make four or five radio transmissions and spend about two minutes from entering the pattern until touchdown. When they do it the other way

<u>--- The Worst Pattern Entry ---</u>

"I see a large percentage of experienced pilots—who own their own airplane and fly a lot—will finish a flight review by crossing over the field at 500 feet above the pattern and then descend into the downwind ... It gives me something to debrief on in the flight review, but they're out there doing it every day and that's the most dangerous way you can do it in my view. "

(overfly and teardrop back to the 45), it's more transmissions and double the time. It seems to me that less exposure in the traffic pattern would reduce the likelihood of mid-air collisions.

Overflying the Airport 😁

Ryan: There's some value in overflying the airport, especially if it's unfamiliar. You can have a look, check for windsocks, and familiarize yourself with the layout.

Catherine: My home field has no weather reporting at all, so it would be typical for me to overfly the airport. Unfortunately, our windsock is right up against the trees, so I'm looking at the flag instead.

Doug: I'll typically join what I expect will be an upwind leg for one runway, but if I discover the windsock is opposite, it becomes a downwind for the other runway.

Doug: I don't like the AIMrecommended entry of an overhead 500 feet above pattern altitude, followed by a descending turn and an entry on the 45. Jet and turboprop traffic on downwind will be a conflict, since they're 500 feet above the normal pattern. And you don't have eyes in the back of your head to judge the turn back to merge with the pattern. I prefer entering midfield crosswind at pattern altitude, and turning directly onto the downwind.





Traffic Patterns and Non-Towered Ops

Yeah, But Where's the Actual Windsock? -

I rarely overfly a field just to look at it. But I remember doing that once on a nighttime arrival when I was concerned about fog. I also wasn't sure which direction the windsock would be pointing, and while looking for it I actually



saw the Goodyear blimp. It was tied up for the night and it was the biggest, best windsock you could ever imagine. " —Dave

Wally: I would do a straight-in if I'm not hearing a lot of noise on the CTAF. But just because I'm not hearing people doesn't mean there are no planes in the pattern, so I'd be watchful for that.

Catherine: If the pattern is not particularly crowded, I'll come straight in. There's nothing wrong with that and it minimizes maneuvering.

Doug: I'll do the same thing, but I get upset with pilots who insist on landing straight in when there are multiple aircraft in the pattern. If the pattern is busy, I'll fly out wide and come in on a 45.

Catherine: One reason you might fly a straight-in approach is if you're practicing instrument approaches. Be respectful and remember that whether you're on an instrument flight plan or just a practice approach, you actually do not have priority over somebody in the pattern.

- Self-Appointed Pattern Sheriffs -

Dave: Most pilots are courteous and understanding and will accommodate. But one thing that gets me is sort of self-appointed pattern sheriffs. They're gonna instill order out of this chaos. And often the instructors are the worst offenders because they're just yapping at everybody in the pattern.

Catherine: I try to be non-confrontational, because once you're confrontational no message gets through. Conversations should happen on the ground. There shouldn't be some feud in the air.

Ryan: If you're practicing in the pattern, you could look at

the inconvenience of other traffic instead as an opportunity to practice dealing with modified traffic patterns: extending downwinds, making short approaches, and so on.

Dave: Don't be directive of other pilots in the pattern. I just say what my action is going to be, not what I want you to do. "I'm extending my downwind" or "I'm making a 360."

Doug: Slowing down is an option to improve spacing in the pattern.

🗝 Local Rules and Noise Abatement 🖛

Doug: Pilots at my home airport are expected to climb to pattern altitude before turning crosswind. That's not in the Chart Supplement. It's a sign at the end of the runway.



Ryan: Sometimes local rules, like for noise abatement, can be found on the airport website. They're not regulatory or found in the Chart Supplement.

<u>--- People Live Around Here ---</u>

"At my local airport, there was a neighbor that came to a local pilots meeting. And he was just saying, "Hey, look, I live in this neighborhood right here. You know, you guys make a lot of noise. Would you mind doing what you can to avoid flying over my house with the engine roaring at full power?"

And I just thought, "Yes, I will."

I mean, we try to be courteous to each other as pilots and let's try to be courteous to people that live in the vicinity when we can. This guy's made an effort to come to this meeting. He's asking us nicely. Shouldn't we respond in kind?" —Dave

🗝 What Not to Say 🖛

Wally: I've tested pilots who make all kinds of reports. Their instructor told them to "just tell 'em everything." Or they say "I keep talking because I don't want anybody to run into me." Their intention is safety, but the result detracts from safety. They could be covering up other important calls, not only at this airport, but at several that share the same frequency. Make just the calls in the AIM—unless there's a reason to make another call.

Doug: One of my really big pet peeves is in the nontowered environment: "Any other traffic please advise." The AIM says very specifically this is never to be used. And typically when I hear that on the frequency, my first comment is, "I don't think the Cub will hear you, sir."

From AIM 4-1-9 (g) (1):

Pilots stating, *"Traffic in the area, please advise"* is not a recognized Self-Announce Position and/or Intention phrase and should not be used under any condition.

Catherine: I try to be charitable about "any traffic please advise" and think that perhaps the aircraft was IFR and had just been told to change frequency. But most of us have a couple radios. In that situation, I have my second radio tuned to CTAF so I can get a mental picture of who is in the pattern.

Wally: The other one I hear is "taking the runway." I say, "Oh no, I'm gonna need that in a minute. Please don't take that."

Catherine: In my neck of the woods, you can't spit without hitting an airport that's on 122.8. There's a drop zone in the area and the jump pilot makes announcements on that frequency that go on and on.

Ryan: From 15,000 feet, those calls block the frequency at many, many airports.

Catherine: Two other words that to me seem wasted are "last call." What do I do with that information?

<u>--- Departing the Pattern --</u>

Wally: Again, the AIM has guidance. You can depart straight out. If you're turning, it suggests climbing to 300 feet below pattern altitude and departing on a 45. There are a lot of other things you can do that aren't necessarily illegal, but they may not be the recommended procedure.

Doug: We can depart other ways, but be smart about it. There are times when, if it's efficient, I'll make a right turnout at an airport with left traffic. I announce my intention, and I'm careful to look that way before turning.





Airmanship 2.0



Nighttime Hazards

Flight at night, especially single-engine, brings special hazards. Where do pilots overestimate risks and where do they underestimate them? How can pilots mitigate those risks ... or is single-engine night flight simply not worth it?

🖛 Risk vs. Reward 🖛

Wally: I have lots of single-engine night experience as a younger pilot, but about 10 years ago I stopped flying at night. I'm confident I can handle an engine failure in daytime and get down safely, but the risk is significantly higher at night. Night can be beautiful, but I don't need to fly at night anymore and I've decided it's not worth the risk.

Catherine: I do fly at night, although I recognize there are more risks and try to mitigate them. I tend to fly high on cross-countries anyway, and even higher at night. I typically don't fly IFR at night, or over mountains.

Dave: I minimize my amount of single-engine night flying. It's easy to blunder into weather at night that you would've seen in the daytime.

Dave: I had been flying a Cirrus for the better part of a year. After that, I was flying over West Virginia at night in a different

🗠 No Longer Comfortable 😁

Perhaps my most beautiful, memorable flight was the New York VFR corridor in a January with a full moon ... The hair goes up on the back of my neck when I think about that flight. It was so gorgeous. But these days I'm just so uncomfortable at night.



<u>— At Night, it's Different —</u>

"As pilots, we've developed these superpowers to spot an emergency landing field and put the airplane right where we want it. But at night, most of those powers are meaningless."

—Dave

airplane, and it was intermittent IMC. I was just thinking, "Wow, I miss having that parachute. I didn't think about it much when it was there, but I miss it now that it's gone." It's almost like a second engine in that sort of situation.

Dave: You'd think the combination of night and IMC wouldn't be more dangerous. If you're IMC, what difference does it make that you can't see outside? But there is a difference and IMC is way harder at night.

Doug: I have over 16,000 hours of total time, but I think my total night time is less than 300 hours.

🗝 Departure 🖛

Catherine: If you're at an unfamiliar airport with terrain around, I'd encourage you to wait until the next morning. But day or night, IFR Obstacle Departure Procedures (ODPs) can give a way to depart with the most favorable terrain clearance. Any pilot who wants to use a departure procedure must fully understand exactly the recipe that goes into creating the procedure, the required climb gradient, and the climb capabilities of your aircraft.

Wally: My experience in doing instrument tests was that a lot of IFR pilots did not know what a departure procedure was. If you're a VFR pilot, have an instrument instructor explain this valuable tool to you.

Dave: Just the fact that a departure procedure exists hints that there's terrain around that you need to be aware of. Familiarize yourself with the terrain and come up with your own strategy, if necessary, for staying away from it.

Doug: The hazard may not even be terrain, but obstructions. In Nebraska, the reason for an ODP might be a 2000-foot high television antenna.



🗝 Enroute & Planning 🛏

Doug: VFR pilots are aware of the Maximum Elevation Figures (MEFs) on Sectional Charts. IFR Enroute Charts include other types of safe altitudes that provide a buffer above terrain, like Off-Route Obstruction Clearance Altitudes (OROCAs), Minimum Obstacle Clearance Altitudes (MOCAs), and Minimum Enroute Altitudes (MEAs).

Doug: The Profile View and Hazard Advisor on your EFB show all the terrain that's out there. Flying at night in terrain, if you don't have that information, you're wasting a valuable resource that could save your life.



<u>— Arrival & Approach —</u>

Doug: Vertical Speed Required (VSR) is a useful GPS tool for planning descents, but it does not account for terrain.

Doug: If you're instrument rated and there's an approach, it's kind of foolish not to fly it at night. Not that you necessarily have to file IFR, but fly the approach because it will protect you from obstructions. A non-instrument rated pilot shouldn't fly an instrument approach without understanding it.

Wally: Garmin navigators have a visual approach feature that can provide lateral guidance and a glideslope to most runways. It's helpful, but doesn't guarantee obstacle clearance.

Dave: The visual approach feature is valuable not just for the approach, but also for orientation of the runway when arriving at an airport, day or night.

Ryan: Some of the techniques involved in the visual approach feature aren't typically taught to VFR pilots, like tracking a glideslope or loading a procedure. There could be a risk using a tool like that without proper training first.

Doug: I'm not a fan of the visual approach for VFR pilots who don't understand what's required to fly an approach. It's basically giving you an IFR procedure, and without proper training it can end up killing you.

Catherine: Lateral guidance is where the visual approach feature really shines. My home airport is hard to find during the day. At night all bets are off, and setting up the lateral guidance really helps.

Dave: The visual approach is a VFR feature, not an IFR tool. The first boilerplate warning that comes up is that it doesn't guarantee obstacle clearance. Go ahead and get some instruction on how to use the tool properly, but realize that there's a really good tool out there.

🗝 "I Would've Been a Statistic" 🛥

"Flying into Needles airport, I could see the lights of the airport and Vertical Speed Required says it's time to start down. I started my descent and all of a sudden the lights of Needles went out.

Well, hmm, was this like New York City back in the '60s when all the power went off in the Northeast?

I quickly turned to the Terrain page on the 530—and it was red. Full power, pitch up, Vy ...

In the morning, I had west-facing windows and I looked out and I see why they call it Needles, CA—all the mountain peaks to the west of the airport were these needles. Had I not seen those lights go out, I would've been a statistic who flew a beautiful F33 Bonanza into a mountainside. " —Doug **Ryan:** Airports in the city are usually the dark spot at night. With pilot-controlled lights, you can cycle them on and off yourself and look for the change in lighting to help spot the runways.

Doug: Remember that pilot-controlled lights only stay on for 15 minutes. When I'm going into a non-towered airport where it's pilot-controlled lighting, I'm wearing that mic out constantly. Three clicks. Three clicks.

🗝 Turn Up the Lights 🖛

"Flying into Nashville International at night, I got closer and closer and couldn't see the airport. I decided I'd just confess. And they said, "Does this help?" And just all of a sudden, boom, they turned the airport lights way up. And I didn't realize that a place like Nashville International would have airport lights set so low in the evening." —Catherine

<u>--- Landing ---</u>

Dave: My RV-4 does not have a landing light. It's legal to land at night without it for a non-commercial operation, but I sure wish I had one.

Catherine: Years ago, I had a Cherokee with an incandescent landing light. I think they chose the place with the highest vibration to put the landing light and it routinely broke the filament. So I landed many times at night without it. As soon as the LED bulb became a thing, I made sure my aircraft had them since they're far more reliable.

Ryan: I've noticed that many student pilots who are struggling with night landings actually improve with the landing light off. They stop fixating on the spot that's lit up and broaden their vision out farther.

- Nighttime Pilot Qualifications -

Ryan: If there are obstacles out there that you can't see, you might not be able to see the horizon either. That's a whole other issue for a non-instrument rated pilot.

Dave: I flew for many years before getting an instrument rating, including in VFR airplanes with no gyros. A small percentage of that time was at night. It's totally legal, but maybe not wise. It's one of those things where you look back and cringe, because you just didn't know what you didn't know.

<u>— Get an Instrument Rating —</u>

I believe that every pilot out there should pursue an Instrument Rating. It is awfully easy to fly into a cloud at night. So I think that instrument skills are valuable.



Wally: In some countries, an instrument rating is required to fly at night.

Ryan: Other countries have night ratings. In the US, only three hours of night flight is required, which often is only two flights: a local flight and a cross country. Is that enough?

Wally: If they're planning a nighttime trip from the Midwest to California, three hours is certainly not enough. But if their idea is to go out in the evening and enjoy the city lights, it's probably adequate.

Dave: "Night" is such a broad term. If you're a "day" pilot, can you fly any day? The days are so different. Similarly, a clear night with calm winds and a full moon is so different than an overcast night with no moon and no lights on the ground.

Doug: To me, it's not so much a question of three hours, but what is done in those three hours. I used to make a point of showing my learners a wide variety of airports and lighting situations at night. We'd also practice with the landing light "failed."



Passengers and Copilots

A great first flight can spark a lifelong passion in another person. If handled poorly, it can scare off someone for good. What's the right way to conduct a first airplane ride or lesson? What's the best way to utilize an experienced right-seater?

- Safety Briefings for New Passengers -

Wally: We have an obligation to give a safety briefing, but I relate it to the airline. Most everyone has flown on an airliner nowadays. We have to talk about some of the same things the flight attendants do. I simply cover the items just like you would in an airliner, and I think they say, "Gee, that's kind of professional."

Dave: Let your passenger know that at certain phases, like right after takeoff and just before landing, you'll be busy. I warn them that I may turn off their intercom, and that I'm not trying to be rude. If there's something that really needs to be addressed, just tap me on the shoulder.

Catherine: We have to expect that passengers won't abide by sterile cockpit rules. And I don't fault them because that first flight in a small airplane can be absolutely amazing. On practical exams, I purposely violate sterile cockpit because I want to see how the candidate handles it. If they tell me to shut up, that's totally fine.

Doug: Don't forget to brief passengers on keeping hands and feet away from the controls. Passengers may think the rudder pedals are footrests.

Dave: We need to pay attention to the imbalance in the power dynamic. Suddenly we're in charge and our passengers are in this completely foreign and somewhat intimidating environment. I try not to become a little Napoleon, where I'm in charge and calling the shots like a dictator. It just can't be that way.

🗝 l'm So Frightened 🖛

"When I do Private Pilot checkrides, I ask the applicant to brief me as if I was a new passenger and ... my goodness. They talk about the seatbelt. You know, don't fall outta the airplane. And if we crash, I want you to open this door, and here's what I'm gonna do if we crash. They say crash four times by the time they've briefed me. I'm so frightened, I want to get outta the airplane." —Wally

🗝 Planning Someone's First Flight 🖛

Wally: I make someone's first flight as smooth and pleasant as I can. I've canceled many first flights in South Carolina because of afternoon thermals and heat that are likely to induce nausea. I'll cancel and reschedule for early morning or late afternoon.

Catherine: If somebody is interested in a lesson, they're already predisposed to thinking general aviation might be cool. But if the conditions aren't great, I'll postpone for another day.

Dave: I like to fly them over a place that's a point of interest to them. That really makes them feel like this flight is for them. They're getting a new perspective on a place that matters to them.

Wally: Our first-ride passengers do not want to see what a hot-shot pilot we are. The last thing they want is to experience weightlessness. They'll never come back.

Dave: Be careful with phrases like "Oh damn," or "Geez, why's it doing that?" If I don't really think about it, it slips out, but your passenger is paying great attention to everything you say and do. If you express surprise or frustration, you might put them over the edge.



🗝 l Don't Fly Very Often 🖛

I had a day where I was giving rides basically all day as a flight instructor. For most people, it was their first experience in a small airplane. And somebody asked me if I liked these days where I'd give rides all day. And I said, "Yeah, you know, as a flight instructor in the right seat, I don't actually get to fly very often. So this is fun."

And they're like, "Wait ... you don't fly very often?" " — Ryan

🗠 They Absolutely Loved It 🗠

"I woke up on this amazingly calm, beautiful day and texted friends about going for a quick flight before we all went for a planned hike. They absolutely loved it. It was just one of the best flights ever to share GA with some of my nonaviation friends. One of my friends told me that she was really glad that I sprang it on her that morning, because if I had asked her the day before, she would've been staring at the ceiling all night worried. She can't wait to fly again. " —Catherine



🗝 Airsickness 🖛

Doug: Don't belabor the point, but mention to passengers that there's a sick sack if they don't feel well. If you wait until they're already nauseous, they'll never get it open in time.

Dave: One thing I emphasize, especially on aerobatic flights, is that it's not a lack of moral turpitude. It's just physiology—this disorienting argument between what your eyes are seeing and what your inner ear is sensing. There's no arguing with this sort of condition. Bob Hoover, one of the greatest



1. NSMFA: Not so much fun anymore. Might have been talkative before, but quiet now. Take a break at this stage with either straight-and-level or a return to the airport.

2. SOUL: Sweat on upper lip. Reaching for the air vents to get more air inside.

3. RADS: Rapid and determined swallowing. Often accompanied by staring at feet.

pilots of all time, washed out of flight training because of airsickness.

Catherine: I teach aerobatics, so I routinely fly with folks that might have some issue with their stomach. Have the sick sack hidden but under your seat and easily grabbed. Also pre-blow air into the bag. If I detect that someone needs it, I can have the bag in front of their face in nanoseconds. That lowers my stress too. I have a cast-iron stomach in an airplane, but if I smell that I'm right there with you.

Doug: Think about what in the airplane might be triggering discomfort or nausea. It could be cabin heat.

<u>— Two Pilots in the Cockpit —</u>

Wally: The crew environment is cut-and-dry. There are procedures and everyone is trained in those procedures. In GA, there's a hazard in not deciding who is pilot in command. If I'm not PIC, I don't touch anything unless I tell the PIC what I'm doing. If I think the PIC forgot something, like the gear or flaps, I'll point it out but I don't touch it. I don't touch radios or GPS unless the PIC tells me to.

Doug: It's the responsibility of the PIC to let the passenger or other pilot know exactly what their duties are, prior to starting the flight.

Dave: When you're in the right seat, state information without added value judgment or implied criticism. It's fine to say "Airspeed is Vref plus 10." It's not okay to say "You're too fast."

😁 Non-Pilot Passengers 😁

Dave: Tell your passenger that you'll give them \$100 if they catch you below 100 feet with the gear in the wrong position. You'll pay more attention because you don't want to pay them. And if you have to pay them, it'll be the best \$100 you ever spent.



4. Upchuck.

🗝 Two Heads are (Usually) Better Than One 🖛

I was flying with a wonderful friend and colleague, Katie Pribyl and her Cessna 180, and we'd flown out from Maryland to Colorado, and along the way we helped each other out with some really questionable decisions.

The first one was going to this little airstrip high in the Rockies. She had been there once before and I hadn't.



We get to this fork in the river, and I was saying, "I think it's to the right." And she's like, "No, it's to the left." And so we make the left turn. I'm looking at the terrain page. It looks like rising terrain in this direction. I'm listening to the radio and I hear traffic at the airport where we're going, but it's getting fainter as we continue course to the left. And we ended up eventually realizing, hey, this is a canyon. This is rising terrain. Let's turn around.



And then I returned the favor. Next day, we left, we're refueling in Kansas. And I'm on top of this rickety ladder trying to refuel this Cessna 180, and the fuel pump was this automatic cutoff where it's kind of like a car gas station.

The fuel cuts off, and I was thinking that's a little less gas than I thought we would take. But we've been at high altitude, so maybe the fuel burn is less than it would normally be.

We're a couple hours into this trip, and we're watching the fuel gauge just bounce around and she says, "I just know that these fuel gauges don't start bouncing around this early in the flight, and I'm now wondering if we have enough fuel to get to our destination."

We landed and we topped it off this time, and it took way more gas than I thought that it should. So clearly I had shorted us when I had filled the tanks. " —Dave

