

Flying VFR on VATSIM

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Most pilots on VATSIM fly using Instrument Flight Rules (IFR) because that is how the real-world airlines fly. Many virtual pilots are unfamiliar with how to fly under Visual Flight Rules (VFR), even though real-world pilots learn VFR flying before they tackle the complexities of IFR.

To help pilots learn about VFR on VATSIM, we have prepared this brief explanation of how to fly VFR. All of these instructions are for use only on VATSIM -- there are some situations in the real world that are different than this.

General Rules for VFR

The key things a pilot flying VFR must remember are as follows:

1. The pilot is responsible for navigation at all times; there are no "vectors" from Air Traffic Control (ATC) telling you to turn, climb, line up with the runway, avoid that mountain, etc. It's all up to you.
2. The pilot is responsible for avoiding other airplanes. Even if ATC is helping you by pointing out traffic, in the end it is your job to prevent a mid-air collision. This is certainly harder on VATSIM (well, really it's a problem with the screen resolution of Flight Simulator compared to the real world).
3. Because of #1 and #2, the pilot must be able to see clearly several miles away at all times. In official words, you must remain in Visual Meteorological Conditions (VMC) when flying VFR. Without getting into the complexities of "exceptions," the VFR rules say that you must stay at least 500 feet below a cloud, more than 1000 feet above a cloud, and more than 2000 feet to the side of a cloud. In addition, the in-flight visibility must be 3 miles or more. How do you know, for instance, that you're more than 500 feet below that cloud? Sometimes you have to guess. Maybe you heard on the airport ATIS that the ceiling is 3600 feet -- so don't fly higher than 3100 feet when you're near that airport!
4. To fly VFR in the vicinity of an airport, the weather at that airport must be above the airport VFR minimums, which means a ceiling of at least 1000 feet, and a visibility of at least 3 miles. (If the ceiling is exactly 1000 feet, it is legal, but dangerous, to fly VFR because you'd have to stay 500 feet below the clouds, and that puts you only 500 feet above the ground!)
5. After you leave the vicinity of an airport, it is usually NOT required that you talk to ATC at all! (There are some exceptions -- see below). You don't have to ask permission to fly a certain direction, or altitude, or anything. You can just do it -- that's why many real-world pilots prefer VFR flying when the weather is nice -- much more freedom.

6. The altitude you choose should still follow the "hemispheric" rules, to help prevent collisions with traffic going the opposite direction. Whenever you are flying at 3000 feet AGL (above ground level) or higher, you should fly an odd thousand plus 500 feet (for example, 3500, 5500, 7500, etc.) when your magnetic course is between 0 and 179 degrees, and an even thousand plus 500 feet (for example, 4500, 6500, 8500, etc.) when your magnetic course is between 180 and 359 degrees)

Flight Plan and Route Clearance

Technically, a VFR pilot does not need to file a flight plan at all. In the real-world, a VFR flight plan is only used to help find a missing aircraft, and some pilots just choose not to file one. On VATSIM, it is helpful if you file a flight plan, even when flying VFR, but you don't need to provide all the information you usually do. If you just enter your departure and destination, and your aircraft type, and then put "VFR" in the remarks section (along with /v/ if you're voice capable) that should be sufficient for ATC. Please note that flying into *Canadian* airspace has three additional requirements when VFR:

1. A VFR flight plan is *required*.
2. You need a discreet squawk code.
3. You need to be in contact with ATC as you cross the border.

When flying IFR, after you log in to VATSIM and get ready to go, you will call ATC to get your IFR route clearance. No such thing when flying VFR. Unless you're at an airport within Class B or Class C airspace (see the next paragraph), you don't need any kind of clearance at all. After you check the local weather, just call Ground Control (or Tower if there is no Ground Control) and tell them you're ready to taxi to the active runway. Make sure your transponder is set for 1200 unless told something else by ATC.

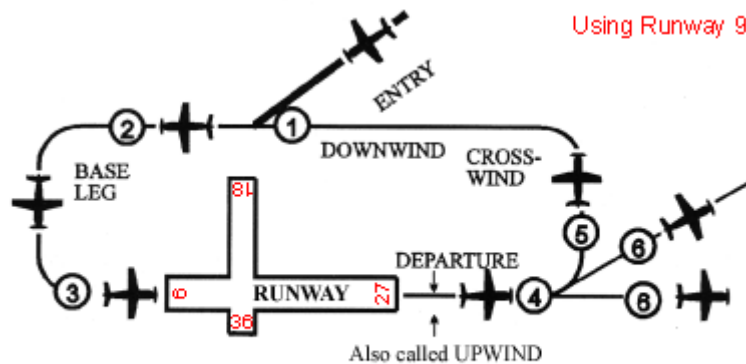
When departing from a Class B airport (like KSEA Seattle), or a Class C airport (like KPDX Portland and KGEG Spokane), you need to get clearance to leave the airport. Call up Clearance Delivery (SEA_DEL, for instance), or Ground Control if DEL is not available, and request a VFR departure clearance. They will tell you something like "You are cleared to operate in the Class B airspace; after departure fly heading 210, maintain 2500 feet or below until clear of the Class B airspace, squawk 1234." Repeat those instructions back to the controller, then call Ground Control to get taxi instructions. (So, how do you know when you've left the Class B airspace? Check out the sectional chart, like <www.skyvector.com> this sample of the Seattle Area.)

If the airport is uncontrolled (there is no Ground Controller or Tower Controller, and any Approach or Center controller tells you it is uncontrolled), then you just use the local Common Traffic Advisory Frequency (CTAF) as published on the charts (or UNICOM on 122.8 Mhz) and tell other pilots what you're doing.

Departing the Airport

When you're ready for takeoff, call the Tower and let them know. (If there is no Tower or Approach, then just tell other planes on UNICOM that you're departing on Runway XX.) Tell the Tower whether you are "staying in the pattern" (because you want to practice landings and takeoffs), or "departing to the north" (or whatever direction you're going). When it is safe, you'll be cleared for takeoff. Don't forget to turn on your transponder (squawk normal, not standby), but you should squawk 1200 unless told a specific squawk code by ATC.

Sometimes the runway where you're taking off is pointed roughly in the direction you eventually want to go, but that's rare. Usually you'll need to turn somewhere after takeoff. To prevent collision with other aircraft, we use the traffic pattern.



If the runway uses "standard traffic pattern," all turns are made to the left, as shown in this diagram. Using Runway 9, you would depart the airport straight-out only if you were going to the northeast, east, or southeast (#6). If you are headed south, then continue straight out for several miles before turning south. If you're going north, you can turn left on the "crosswind," (#5) then continue north away from the airport. If you're going northwest, west, or southwest, you should continue turning left onto the downwind leg (#2) while climbing, and then wait until you're several miles away from the airport before turning on course.

After the Tower clears you for takeoff and you acknowledge that clearance, you might not talk to Tower again. Keep listening on the frequency, in case the Tower wants to warn you about another aircraft in the vicinity, but once you're about 10 miles away, you can switch frequencies to any other that you want.

If you're going to stay at the airport to practice landings and takeoffs, you will fly the entire traffic pattern as shown: UPWIND (#4), CROSSWIND (#5), DOWNWIND (#2), BASE, and FINAL (#3).

(Some runways use a "right hand" traffic pattern, where everything is the same but all turns are made to the right.)

Arriving at the Airport

When you're about 10 miles from your destination airport, select the Tower controller at that airport (in the Squawkbox ATC directory) and call in with your position and your intentions (such as, "11 miles northwest, inbound for landing").

The Tower controller will give you some instructions, such as how to enter the traffic pattern and when to call him again. Something like "Enter left traffic for Runway 9, report midfield downwind," or "Make straight in to Runway 9, report 2 mile final."

If you're arriving from the north (in the example pattern above), you'll probably go straight to the Entry position at #1. If you're approaching from the south, you may be asked to fly north right over the airport at some altitude above the traffic pattern and then, when clear of the pattern on the north side, you should circle (to the right is safer), descend, and enter the traffic pattern at #1 in the diagram.

From the east, you'll probably just enter the pattern straight into the downwind leg. From the west, however, you'll probably be told to fly toward the north of the airport and then turn south to enter the pattern along with the other planes coming from the north. If it isn't busy at this airport, the Tower may tell you just to fly straight in to Runway 9 and land.

What altitude should you fly the traffic pattern? Depends on the airport elevation and the type of plane you're flying. If there is no other information, you should fly the downwind leg at 1000 feet above the elevation of the airport. You should also fly the downwind leg about 1/2 mile from the runway, and parallel to it.

Once you are on the downwind leg (or on about a two-mile final), the Tower will clear you to land. If they say, "Number 2 for landing," that means another plane will be landing first. You should start looking for the traffic you're supposed to follow, because if you cut in front of them, the virtual FAA will come after you!

Unless the Tower tells you differently, try to turn to the Base leg about 1/2 mile from the runway. You're responsible for choosing when to turn Base and Final, but remember that the Tower is expecting you to keep your pattern relatively close (1/2 mile) to the runway.

Flight Following

If you want to have ATC monitor your entire flight and warn you if they spot another airplane that could potentially cause a collision, you can ask for VFR Traffic Advisories, also known as VFR Flight Following.

When you contact the Clearance Delivery ATC (or Ground Controller or Tower), tell them you want "VFR Flight Following" to your destination. When you depart the airport, instead of just letting you go your way, the Tower will tell you to contact another controller (usually Approach or Center) for advisories. As mentioned earlier, ATC will NOT be providing any vectors or other services, just warnings about potential mid-air collisions. When you approach your destination airport, ATC will hand you off to that Tower. If there is no Tower controller, they will advise you to Squawk VFR (1200) and switch to the UNICOM or CTAF frequency to report your position and intentions to other pilots.

Class B and Class C Transitions

When landing at an airport within Class B or Class C airspace, or just passing through that airspace, you are required to contact the appropriate ATC (usually Approach Control). Call them up before you enter the Class B or C airspace, giving your current position (relative to a local obvious landmark or to a VOR or airport) and intentions (landing, transitioning to the north, whatever). You will be assigned a unique squawk code, and possibly some instructions for heading and altitude.

Do your best to follow the instructions, but if those instructions will ever interfere with the safety of the flight, including taking you too close to clouds or to an area with reduced visibility, you MUST inform ATC and suggest where you need to go to avoid the hazard.

For transitioning aircraft, ATC will usually suggest headings and altitudes to keep you away from other traffic. Sometimes, however, there is a charted route that you can expect to fly. A good example is the one crossing KSEA from East to West, and vice versa.

Let's assume you're 10 miles west of KSEA, flying at 2500 feet MSL to stay under the Class B airspace (which goes from 3000 to 10,000 feet in that area.) You want to go east to land at Crest (S36). Instead of flying south near Puyallup or north by Kirkland to get around the Class B, you want to go straight over KSEA. Contact SEA_TWR on 119.90 while you're still west of the field, tell them your position, and request the VFR transition to the East to Crest. SEA_TWR will have you squawk a unique transponder code, and then advise you to maintain a particular altitude. Finally, they will tell you to cross the field over the approach end of the runways. (For example, when traffic is landing and departing to the south on Runways 16L and 16R, you should cross the field at the north end.) This way, planes arriving at KSEA will land underneath you, and those departing will take off below you and move out of the way before they climb.

Alternatively, you could contact SEA_APP for the Class B transition, but usually they would need you to climb up to at least 4000 feet to stay in their area of control. It's your choice. If you want to transition the Class B anywhere EXCEPT across KSEA, then contact SEA_APP.