

Air-Child Virtual Airlines
ONLINE FLIGHT TUTORIAL

LOWS - EPWA

*(v 1.1.0. updated from v 1.0.2 to meet the
STAR changes at EPWA airport, introduced
from 17th December 2009)*

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1. Why online?

The answer is simple and short: you will never get that close to real flying otherwise. Forget about "simplified" FS default ATC commands and 20 minutes of flying around at 3000 ft before you see your ILS needle settle in. Nor should you expect going around because of AI traffic 3 miles ahead of you, about to touch down. And no more AI traffic at all – instead you meet real people inside their virtual (and sometimes not so virtual) cockpits. Some of them are experienced and relaxed, some of them are steaming with sweat during their first hours online. But all of them are there because of the passion they share – flying as real as they can.

And, last but not least, consider the fact that when you log into the network, your Flight Simulator is no longer a game – it is now something to be truly called a simulator. Once you have set your parking brakes and switched off the engines at the stand after your first online flight, you will feel the difference and will never go back to offline flying again. Take my word.



2. What do you fear?

- ? **"I might make mistakes"** - Yes, you will! And it happens to all pilots, even the most experienced. If you do, you will realise and correct your mistake or you will be advised by ATC what to do. Nothing to be ashamed of – we are all learning all the time. A good advice, though, is to use an aircraft type you are familiar and comfortable with.
- ? **"I might cause problems to other pilots"** – Question: what kind of problems? To block the taxiway with your aircraft because your software fails? This has happened to many. Just disconnect from the network, sort things out, log in at the gate and start all over. Alright, you may say, what if I crash my plane into another aircraft? Most important is to have the crash detection option disabled in your FS settings. As simple as that. And watch out for other pilots on your way back from the pub ☺.
- ? **"I might not understand what controllers say"** – ATC will make sure that you will. Have a pen and paper ready. Write down the ATC commands and then read them back. It won't hurt, but it will help. I never fly without a pen and paper. If you are still scared of voice communication, use text, but ... that's not very real, is it? If ATC is talking too fast, or mumbling, tell them to speak slowly and clearly. We recommend using a USB headset. It acts as a separate sound device, so you can have ATC voice on the headset and FS sounds on the speakers.
- ? **"There are so many special terms when I read about ATC phraseology"** – Stop reading, start flying. Get your VATSIM ID (if you haven't already) by registering at www.vatsim.net, install and configure required software (see further down), log in as "observing" and listen. You can also log in at busy airports and monitor available frequencies. But don't stay too long – controllers are waiting for you ☺. You will never learn all the expressions from the book. You just need to learn the few essential ones – the rest will come over time, as you will listen to other pilots and ATC.
- ? **"All these rules, SID's, STAR's, IAF's are so complicated, with all these aircraft around"** Do not start your online career flying from Heathrow to Frankfurt. Choose a ~300 mile flight between two small, quiet airports. Study the charts before you fly. They seem complicated at first, but I will give a few examples on how to easily make use of them, later in this guide.
- ? **"I am never going to make it"** – Crap! If you know basic flying techniques and can comply with basic commands from ATC, the controllers will always help you. Don't forget to enter the "NEWBIE" label (or "OBSERVING", if you do) in your flight plan's *remarks* field. This will tell the controllers that they have to be understanding, speak clearly and give you some credits. I removed my "NEWBIE" label after about 100 hours of flying online. Sometimes, I think I've done it too early ☺.

3. Prerequisites

Which skills do I need to fly on-line?

Here comes the tricky bit. If you have been flying offline for long, you probably know how to handle your aircraft. Nevertheless, go through the checklist below – this is a must.

You should be able to ...

- ◆ taxi the aircraft along taxiways, as instructed by controllers. (Apron/Ground charts may be necessary, as not all airport sceneries have their taxiways clearly marked).
- ◆ take off and climb, maintaining constant rate of climb without using the autopilot, using flaps as appropriate.
- ◆ use the FMS/FMC (default FS9 aircraft do not have this feature). Flight management computers, aligned with IRS and GPS, made human navigators redundant and will most of the time do most of the work for you ☺
- ◆ operate all knobs and switches of your autopilot.
- ◆ climb/descend to a flight level or altitude, as instructed by ATC.
- ◆ increase or reduce speed, as instructed by ATC.
- ◆ perform an ILS approach and land safely.
- ◆ perform a visual approach and land safely (highly recommended).

Not much, is it? But if you cannot do any of the above, well, practice a bit offline and continue to read this guide.



What do I need to know?

Again, look at the list below:

- ◆ The difference between IFR and VFR flights.
- ◆ How to read METARS (at least the current wind direction and speed, visibility).
- ◆ The RVSM separation rules.
- ◆ The difference between FL (flight level) and Altitude.
- ◆ The definitions of SID, STAR, IAF.
- ◆ Basic knowledge on navigational aids and how to make your aircraft fly in relation to them (VOR, NDB, Fixes and Intersections will mark waypoints along your flight plan)
- ◆ Differences between VOR/DME, NDB or ILS approaches (though, probably, you will use ILS approaches most of the times)
- ◆ How to incorporate your flight plan into your FMS/FMC (the default FS GPS is only a toy)
- ◆ How to set up Squawkbox or FSInn software to be able to communicate on the network and how to send a flight plan to the network. In this tutorial we will concentrate on Squawkbox.

Which software do I need to have?

The following basic set of software is required to fly online:

- ◆ Squawkbox or FSInn to communicate with the network. Downloads:
 - <http://squawkbox.ca> (Downloads / QuickStart / Manual)
 - <http://air-child.com/files/public/fsinn1.3.zip> (includes FsCopilot & Manual)
- ◆ FSUIPC – a required interface - <http://www.schiratti.com/dowson.html>
- ◆ A current or not so old AIRAC database for your aircraft's FMC.
- ◆ A Flight Simulator, or you will fly nowhere.

Optional software which may make your flying more enjoyable:

- ◆ Weather software (enhancing FS weather and providing real weather data), such as, for example, ActiveSky
- ◆ vroute – an excellent tool for flight route and fuel planning, flight plan exporting and a lot more – available in freeware and payware versions.
- ◆ A network flight situation display tool, such as ServInfo or Dolomynum (which I personally prefer for its stability and speed). It shows where your aircraft and others currently are, which ATC positions are manned, traffic density and so on. Very useful for preflight planning. All of these tools are freeware.
- ◆ Teamspeak client – if you want to talk to other ACH pilots while you are flying. We use it for group flights, and it's especially useful for training flights, to issue help instructions or ask questions. Easy to use.
- ◆ Airport add-on sceneries – available on the internet. Some cost money, some are free. But they all are better and much more realistic than the default Microsoft airports.
- ◆ Reporting software – if you are an ACH pilot you obviously have one. Topic locked.

This guide assumes that you have read the materials published in the Air-Child *documents* section and know how to set up some of the software. You probably fulfil the requirements stated above. If so, continue reading. If not, get your list completed and come back.



4. Let's get busy

Note: this guide assumes that you have the necessary knowledge, skills and software for your first online flight, as this will cover the tutorial flight with respect to air traffic control and flying procedures only. This is not a flying school. You need to know what you are doing with your aircraft at this stage.

Collecting information about the flight

During your first, tutorial flight, you will cover the route from **LOWS** to **EPWA**. Distance: 470 miles, about 1:20 hrs of flight. ATC will be online.

Route: **LIMRA LIMRA UL725 LEDRI UM985 JAN UM141 DBV UM985 JED UM866 LOGDA**

Should this route become invalid, due to changes in the current AIRAC, a new route will be proposed before the flight.

We need the charts, so check the VACC Austria website, find and download them. Then we look for charts for EPWA at VACC Poland. Or invest some money and use the Navigraph *nDAC* tool - fast and easy. The choice is yours.

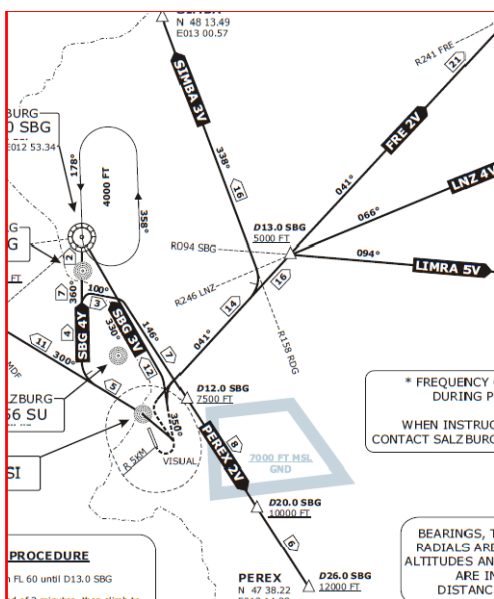
We'll do the same for sceneries – you will find links to sceneries at Austrian and Polish VACC websites, too.

Now we have the maps. Good. Let's check the weather (there are many tools to do so, including the one on the ACH website). We will assume that the weather is good enough to take off from RWY 16. To make sure, we can use one of the online status tools, such as Dolomynum. ATC is present, lets click on ATIS at LOWS – here we are: "Departures Rwy 16".

Let's look at the apron chart. Any gate is good to park the aircraft. Now we check for a possible taxi route to the holding point of RWY 16 and find taxiways **L** and **B**.

Now we need to do some "computer" paperwork: planning the fuel and payload, book a charter flight on the ACH website. Once done, we can start the FS and place our aircraft at the gate. Let's have a quick look around – where we are, how we are positioned in relation to the taxiway – we need to know this for later pushback.

Sitting comfy in the cockpit? All right, time to dial the flight plan into the FMC (or load it, if possible). Don't know how to do that? Go back to section 3 of this guide.



Once the FMC route is complete, we are going to insert the Departure. Time to take a look at the SID chart. Oops... there's going to be a sharp left turn (Hdg 350°) after takeoff - and there are mountains around! Be prepared. Now, which of the SID's should be inserted? Well, read the chart – the one that corresponds with the first waypoint of the flight plan is LIMRA 5V, if we are departing from runway 16. Select it and check your navigational display to make sure SID and route waypoints are displayed continuously.

It's finally time to finish setting up the FMC (or FMGC, if you fly an Airbus). Weights, fuel, CL, TA – all the PERF INF stuff. Again, I assume you know what to do. The cruise level? Since we will be flying eastwards, over 400 miles to go, an odd flight level between FL330 and FL370 will be the right choice. Shall we plan the arrival? Well, you can do it now or later, at cruise altitude, where you will have enough time for it. I'll get back to that, later.

5. Getting connected to the network



Setup completed? Fine, so we are ready to start our adventure. Getting nervous? Good. A little adrenaline won't do any harm. Let's activate the Squawkbox and log into the network. Make sure you have sent the flight plan to VATSIM using the pre-file option on the ACH website. If you didn't, you can do it now, using Squawkbox. Pen and paper ready? A drink by your side? You might need it ...

Make sure your transponder is in "Standby" mode, find the frequency of LOWS_DEL (Delivery) in your Squawkbox window. What if there is no Delivery? – well in such a case look for the next "higher" ATC position available (which would be TWR). If tower is not there, then switch to APP. If even Approach is absent, turn your frequency to CTR (Center Controller). If no ATC is available at all – stop flying, start crying... Of course not! Switch your frequency to UNICOM: 122.80, and set your "squawk" (transponder) to 2200. I will explain later how to use the UNICOM frequency and what it is good for (if you don't know it already ☺).

ATC POSITIONS:

- **DEL** (Delivery) - they will give you the flight clearance and hand you off to GND (Ground).
- **GND** (Ground) - will let you start your engines, pushback, give you taxi instructions and taxi clearance and hand you over to TWR (Tower) – if DEL is not manned, GND will also give you the flight clearance.
- **TWR** – (Tower) - they will allow you to enter the runway and take off / land – they will also do the DEL and GND job if those are absent. TWR will hand you off to APP on departure, or GND on arrival.
- **APP** – (Approach) - will give you instructions for initial climb or for descent and arrival. They will also clear you for final approach (e.g. ILS, VOR/DME). If no lower ATC positions are available, APP will handle their tasks, too. They will send you to CTR on climb, or to Director or TWR on arrival.
- **APP_F** (Director) - will give you final instructions and clearance for your approach. On VATSIM you can expect this position to be manned at very busy airports, usually during events. They will hand you off to TWR on arrival.
- **CTR** – (Center) – controls most of the flight at cruise altitude. You will most often start your descent under control of CTR. If no lower ATC are available, CTR will take over their responsibilities. If available, they will hand you off to APP on arrival.

* As you may have noticed, there is a nice system of taking over by higher ATC positions if lower are absent. But this refers to VATSIM only. Never in real aviation.

Now we need to check the ATIS (*Automatic Terminal Information Service*) that provides information about weather and active runways at the airport. Do it by right-clicking the LOWS_ATIS in the frequency list of your Squawbox. Read the information and note the information designator (if ATIS changes, the designator will be the next letter in the alphabet).

An ATIS example:

[LOWS Airport Information - Winds 180 at 6 knots - Temperature 12, Dewpoint 8 - Visibility 6000m - Runway 16 in use. You have received information D]

Information D (Delta) is the designator. If weather changes, ATIS will change too, and the next ATIS update will end with "You have received information E (Echo)".

For our training flight we assume that all ATC positions in Austria are manned.

Let's go through our online checklist again:

- Aircraft set and ready (fuel loaded, FMC programmed, APU running, engines off, trimmed for take-off)
- Squawbox active, properly configured, voice checked
- Flight plan filed (sent to the network)
- COM1 radio set to LOWS_DEL – 121.75
- Transponder in 'Standby' mode
- ATIS checked, designator noted down
- Pen and paper ready

- **Checklist complete**

6. Receiving flight clearance

Spend a while listening on the frequency to other pilots receiving their flight clearance. Don't speak immediately after switching frequencies, as you might interrupt an ongoing communication. OK, it is your turn – now or never!

[Salzburg Delivery, good evening, ACH9090 (say: Airchild niner zero niner zero) at stand W5 (Whiskey five) with information D (Delta), requesting IFR clearance to Warsaw via LIMRA 5V (Viktor) departure]

HINT:

You don't have to include the LIMRA 5V departure route in your clearance request. But if you do, the ATC will know that you are well prepared for the flight. If you don't, ATC will give you the SID in the clearance anyway. If you happen to choose a wrong SID, ATC will give you the correct one. And, in case your filed route does not comply with the current AIRAC cycle, they may adjust your flight plan as well.

HINT:

Write down your clearance request before you say it – it will make things so much easier!

[ACH9090, STANDBY FOR CLEARANCE]

– this means ATC is busy and will get back to you after a while. Just shut up and wait.

Or:

[ACH9090, YOU ARE CLEARED TO DESTINATION WARSAW AS FILED VIA LIMRA5V DEPARTURE, DEPARTURE RUNWAY 16 (ONE SIX), INITIALLY CLIMB AND MAINTAIN FLIGHT LEVEL 60 (SIX ZERO), SQUAWK 4760 (FOUR SEVEN SIX ZERO), INFORMATION DELTA IS CORRECT]

Now you have to repeat (read back) what you just heard. If you noted down what ATC said, it shouldn't be a problem. I write it down this way: *cld EPWA, LIMRA5V, rwy16, FL60, 4760*

You can also use the [Online-ATC Preparation Form](#) on the ACH website for your notes.

Now read it back:

[Cleared to destination WARSAW as filed, via LIMRA5V, departure rwy 16, squawk 4760, ACH9090]

If all is correct, ATC will confirm (otherwise correct):

[ACH9090, READBACK IS CORRECT. FOR STARTUP AND PUSHBACK CONTACT TOWER ON 118.10 (ONE ONE EIGHT DECIMAL ONE ZERO). HAVE A NICE FLIGHT]

Confirm your frequency change:

[Switching to tower on 118.10, bye]

You have just received your first clearance! Congratulations. This is, however, not yet a permission to taxi or take off. **Set your transponder to 4760 now.**

You were told to contact Tower, why not Ground? Simply because there is no Ground station at LOWS.



7. Taxi

Now change your active frequency to LOWS_TWR and say:

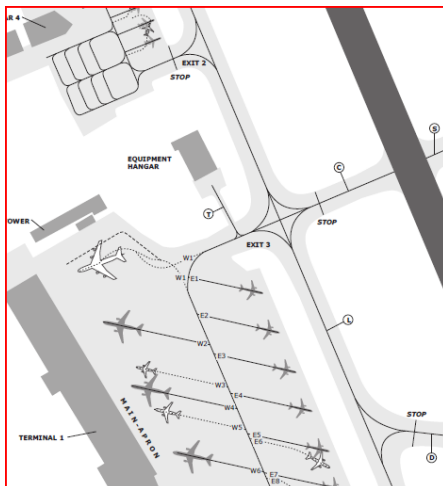
[Salzburg Tower, good evening, ACH9090 requesting startup and pushback]

If your aircraft position does not require pushback, simply don't request it.

[ACH9090, STARTUP AND PUSHBACK APPROVED, FACING NORTH-WEST. REPORT READY TO TAXI]

[Start and push approved, facing north-west, ACH9090]

Now you are allowed to switch on your engines and push back. You may not taxi yet! In some cases you may get a clearance for startup only. Then, if your engines are running, you need to request pushback.



All right, you are now aligned with the apron taxiway, facing north-west, pushback complete. When ready to roll (but do not take too long, other pilots may want to have fun as well) ask Tower for taxi clearance:

[ACH9090, requesting taxi]

[ACH9090, TAXI TO HOLDING POINT RUNWAY 16 VIA EXIT 3 AND L (LIMA)]

or, if there are other aircraft already taxiing along the same taxiway, you will hear:

[ACH9090, BEHIND TRAFFIC BOEING 737 COMPANY, TAXI TO HOLDING POINT RWY 16]

Remember to read back ATC instructions (there are very few situations where you need not repeat what you've heard) and to always append your callsign on readbacks.

[(behind traffic) taxi to holding point rwy 16, via Exit 3 and L, ACH9090]

- now you can move your widebody. Do not overspeed – 30 knots max. Watch out for other traffic.

[ACH9090, HOLD SHORT OF TAXIWAY L]

– this means stop and wait before you enter the taxiway L. Read back the instruction and wait.

[ACH9090, CONTINUE TAXI]

[Continue taxi, ACH9090]

– you can now safely continue taxiing.

[ACH9090, HOLD POSITION]

- if you hear this, read back the instruction and stop right where you are. Wait until you are cleared to continue. Remember, ATC have a much better view of the situation on the ground than you do.

8. Take-off

You are now approaching the holding point of rwy 16. If nothing else happens, stop your aircraft there. Do not enter the runway – you are not cleared for that yet. Wait a short while and, if nothing happens, remind Tower about yourself (but most of the times, if there is not much traffic, Tower will call you first):

[Holding short of rwy 16, ACH9090]

[ACH9090, HOLD SHORT DUE TO LANDING TRAFFIC]

- this means an aircraft will be landing before you are cleared for take-off. Read back the instruction and have a smoke ☺

[ACH9090, DO YOU HAVE TRAFFIC IN SIGHT?]

– put out your cigarette and have a good look.

[Traffic in sight, ACH9090]

– say this only if you are absolutely sure to spot the plane. If not, say:

[Negative, ACH9090]

and wait for further instructions.

Assuming that you don't need better glasses, you will hear now:

[ACH9090, (BEHIND LANDING TRAFFIC) LINE UP RWY 16 (AND WAIT)]

– this instruction only allows you to enter the runway and align your aircraft with the runway centerline.

You are not cleared for take-off yet! Read back the instruction and roll on to the runway.

Remember: It is entirely ATC's decision when to send you up to the sky.

[ACH9090, WIND IS 180 AT 7 KNOTS, RUNWAY 16, YOU ARE CLEARED FOR TAKE-OFF]

– no matter at which stage you hear this, this means you can now beam yourself up from the runway.

[Runway16, cleared for take-off, ACH9090]

– you do not need to read back the winds, but the rest is a must.

Now you're going to scare the birds. **Set the transponder mode to "CHARLIE" now.** (With some add-on aircraft you just need to turn your transponder switch to TA/RA; otherwise click on Mode C in Squawkboxes oversized transponder gauge.)

Take-off... finally! Once airborne and gear is up, tell ATC about it:

[ACH9090, airborne]

9. Climb

Now you will be sent to the next ATC position – LOWS_APP (Approach).

(At some airports you may be instructed by Tower, in your take-off clearance, to contact Approach after departure directly).

[ACH9090, CONTACT SALZBURG RADAR/DEPARTURE/APPROACH* ON 123.92, BYE, BYE]

* sometimes the name *Radar* or *Departure* is used instead of *Approach*. But it all refers to the same ATC station – LOWS_APP.

[Going to Salzburg Radar on 123.92, thank you for ATC, bye]

- watch your PFD or Altimeter. You are crossing 2000 feet. Report this on the first contact with Approach:

[Salzburg Radar, good evening, ACH9090 with you after departure, crossing 2000 feet]

[ACH9090, IDENTIFIED]

– this means Approach control knows where you are, who you are, and what to do with you. From now on you are under their control. This is one of the very few examples, where you DO NOT read back.

You may now expect one the following commands:

[ACH9090, CLIMB AND MAINTAIN]

– this means you should stay on your planned departure route, but you are cleared for a higher level; or

[ACH9090, TURN RIGHT HEADING, CLIMB AND MAINTAIN ...]

– you received vectors; or

[ACH9090, TURN LEFT HEADING, CONTINUE AS FILED]

– after performing the turn you should return to your flight plan; or

[ACH9090, CLIMB AND MAINTAIN, FROM PRESENT POSITION DIRECT LIMRA]

– you are lucky, now you don't need to fly the entire SID. You are cleared to fly directly to LIMRA, the last waypoint of your SID and the first waypoint of the flight plan you have filed.

Remember to always read back the instructions.

Approaching the last departure waypoint (LIMRA) or the flight level given to you by Approach means that you're about to leave their airspace. Now get ready to contact Vienna Radar (LOVV_CTR) on 134.35, but wait until Approach sends you there.

[ACH9090, YOU ARE LEAVING MY AIRSPACE, CONTACT WIEN RADAR ON 134.35. GOOD BYE]

I suppose by now you already know what to reply. If not, a quick reminder:

[Switching to Wien Radar on 134.35, so long and thanks for the service]

10. Cruise

Time to go cruising. Let's contact LOVV_CTR. As they may be busy watching TV or other aircraft, you have to give them a hint where you are. I usually report my current FL and distance to the next waypoint:

[Wien Radar, good evening, ACH9090 with you at FL190, inbound LIMRA, 5 miles]

[ACH9090, WIEN RADAR, IDENTIFIED]

or

[ACH9090, WIEN RADAR, RADAR CONTACT]

– both mean that now you are under control of LOVV_CTR. Don't read that back.

Then again, you will hear:

[ACH9090, CLIMB TO FL370]

– you have received clearance to climb to the cruise flight level you had filed with your flight plan. Read that back, start climb and wait what happens.

If nothing really happens, this means the ATC is happy with you flying your planned route, and unless something unexpected occurs, they will only contact you on leaving their airspace or if your TOD (top of descent) point is within their area of control.

If the controller likes you (and we all like each other at VATSIM) and there is no conflicting traffic, the ATC may give you a shortcut, and that's what they usually do. This may be the last waypoint in your flight plan within their airspace, or a closer one - that's up to them.

[ACH9090, FLY DIRECT <WPT>]

[Direct <WPT>, ACH9090]

– that's what you say and do. Should you get confused about your FMC (how did that DIR button work again?) or something else is going upside down, don't read back before you are able to comply to ATC instructions. Remember the golden rule: Aviate, Navigate, Communicate. In that order.



Now you can relax a bit. You are there, 11 km above the ground and the sky is yours! Stretch your arms and legs, replace your t-shirt with a dry one and wipe all the sweat off your face. So far you're doing well. If you need to leave your cockpit for a pee or a cigarette, it's the best time to do it now. But ask your controller first:

[Wien Radar, ACH9090, requesting to leave the cockpit for 5 minutes]

[ACH9090, ROGER (=UNDERSTOOD AND ACCEPTED). REPORT BACK]

[Wien Radar, ACH9090 is back in the cockpit]

[ACH9090, ROGER, THANK YOU]

After crossing Austrian airspace, you will fly across Slovakia. If LZBB_CTR is on-line, LOVV_CTR will send you there at the right moment, and the whole procedure described in this section will have to be repeated. If not, continue reading.

11. Flying on UNICOM frequency

You are about to leave controlled (LOVV_CTR) airspace. Let us assume that, unfortunately, there is no CTR over Slovakia right now. This happens very often at VATSIM.

[ACH9090, YOU ARE LEAVING MY AIRSPACE. NO FURTHER ATC AVAILABLE. SWITCH TO UNICOM ON 122.80, RADAR SERVICE TERMINATED, FREQUENCY CHANGE APPROVED. HAVE A NICE FLIGHT, BYE, BYE.]

[Switching to UNICOM on 122.80, thank you for the service, ACH9090]

What now? No control = full freedom? You wish! You must now set your primary frequency to 122.80, called UNICOM. At this frequency you cannot use voice, only text is possible. The purpose of UNICOM is to inform other pilots about your intentions. This way you can avoid conflicts, especially while taxiing and during the approach, take-off and climb phases. Always start your message with the airport name to indicate where the danger comes from, for example:

[LOWW tfc, start and push at stand 57] (tfc stands for traffic)

or

[LOWW tfc, taxiing to h/p rwy 11 via Exit 9 and M]

or

[LOWW tfc, entering ILS approach rwy 34, 12 miles from touchdown]

If you get no response and no other pilot messages starting with *[LOWW tfc, ...]* you can safely proceed. If other pilots are around and your traffic may conflict with theirs, they will respond, informing you about their intentions. Example dialogue:

[LOWW tfc, approaching holding point RWY 11]

– this message suggests you are getting ready to take off from runway 11 at Vienna Airport. Shortly after comes a response from another pilot:

[LOWW tfc, established on ILS rwy 11, 5 miles]

- 5 miles is the minimum separation for take-offs and landings – you will not make it. Stop at the runway holding point and wait for the aircraft to land. When the other pilot texts:

[LOWW tfc, rwy 11 vacated]

- move on.

That's how it is supposed to work. Does it always? Well, that's another kettle of fish. Not all the pilots are as disciplined and stick to rules like you do. ☺

At cruise altitude there is little probability of collision if RVSM rules are obeyed, so UNICOM frequency is not so often used to text messages but it should still be monitored. You may see other aircraft dangerously close on your TCAS, so you may use it to signal your speed, altitude and position.

Can you vector yourself while you are on UNICOM and there's no ATC? Would be fun, but not really. You can't give yourself a shortcut – there might be other planes around and you will end up on a collision course. If you could, there would be no need for airways, SID's, STAR's, RNAV and other procedures.

Therefore, if you are approaching an airport for example, you must perform the approach procedures as published on charts (STAR's, ILS, VOR/DME or NDB approaches), complying with the routing, speeds and altitudes. These charts are very close to what is published for real aviation – again, we get as close to reality as possible.

Not long ago in the city where I live, the Approach station at the airport used to close at 10.00 pm. Only Tower was available. I could see aircraft performing holdings to descend and racetracks before they established on localizer. All in compliance with the charts and the procedures published in them.

When flying online, performing full arrival procedures as published on charts can be very challenging but also gives so much satisfaction. Try LOWI and you'll know what I mean ☺.

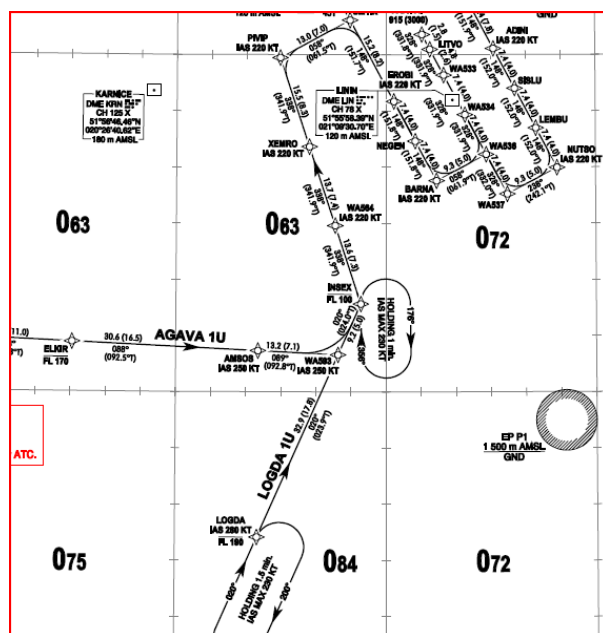
Anyway, instructions on how to fly by charts are not really a topic of this tutorial, so I'll leave it for now and go back to our flight.

Remember: UNICOM is not for private messages or free chat – use the private chat feature instead – or use our Teamspeak server for voice chat.

12. Planning for descent and arrival

As you are cruising carelessly across uncontrolled airspace (or controlled, but the CTR is “done with you” for now) and you have a few free minutes, you can start to plan your arrival.

First, you need to find out which runway is in use for landings at EPWA. The EPWA_ATIS may not yet be visible in your Squawkbox. You can make some calculations based on the weather in Warsaw, but why bother if ATC is waiting there? If there is no ATC, then you have to refer to airport information (charts again) and weather, and determine the best runway to land yourself (there are a lot of training documents about that on the Internet). Anyway, for our tutorial flight EPWA ATIS is available. Just use the Dolomynum (or similar) traffic reporting software and you will soon find out.



Let us assume that runway 33 is in use in Warsaw. Good. Check the charts – there's an ILS approach available – even better.

Now program your FMC for arrival – first the runway and then the STAR, the arrival route. Check the charts – our last waypoint in the flight plan is LOGDA, so this will also mark the name of the STAR. Let's see – there's the LOGDA 1U on the chart. The corresponding STAR in your FMC will be LOGDA1U.33. Program your FMC/CDU/FMS accordingly. Now check your flight computer for speeds and altitudes of waypoints against the chart route and correct, if necessary.

Note that the STAR published for EPWA is a RNAV (Area Navigation) approach, which, generally speaking, combines 'traditional' navigation points, such as VOR, with virtual fixes

available through GPS. Easy to recognize – the routes often follow a parallel pattern and are abundant with waypoints. Aircraft not equipped with RNAV capability will not be able to follow the assigned routes. This type of approach is designed for busy airports to reduce separations between aircraft in an orderly queue. But I would not worry too much, VATSIM controllers will rarely require you to follow the full arrival, most probably you will receive vectors to final approach anyway.

Traditional (non-RNAV) STARS are based on standard navigation aids, such as NDBs or VORs. They are marked with straight lines (sometimes arcs) and all the information which allow pilots (headings, distances, radials, speeds) to follow them based on their 'traditional' navigation devices, and no GPS necessary.

Such STARs are also programmable by FMC/CDU. All you need to do is to have a look at the chart, find the STAR name which corresponds with the last fix on your flight plan and the runway to land. The last fix of the STAR will be the IAF (Initial Approach Fix), from where you will transit to the final approach to the runway (ILS, VOR, NDB or visual). Insert the STAR, RWY and Transition (if available) in your flight computer arrival page. Check legs for continuity, correct speeds, altitudes (compare your chart). Done.

At many airports you will find traditional STARs, at some only RNAV Arrival Routes, and at some both will be there. If there's no ATC, it is up to you which arrival you choose, as long as you comply with it ☺.

Now look at the chart again – we need to arrive at FL190 at LOGDA, with the speed of 280 knots. Plan your descent to meet these values. You are the pilot ...

HINT:

As a rule of thumb, you can use the following calculation methods:

For the TOD / distance from waypoint:

- check the altitude you need to lose. Cruising at FL370 and down to FL190 will be **18000** ft to descend
 - divide this by thousand and multiply by 3

=> **18 * 3 = 54** - start your descent at **54 nm** from ARDAG on a 3° descent angle

For the descent rate:

- divide your Ground Speed by 2 and multiply by ten. If your GS is **380** kts:

=> **(380/2) * 10 = -1900 ft/m VS** for the above example (assuming a 3° angle)



By now you should be able to define the moment when you need to start your descent from our 'tutorial' cruising altitude (FL370). My advice is not to fully rely on the EHSI/ND display and the descent marker computed by FMC. I always plan to start descending a few miles before – it's always better to have an altitude margin – if you end up too high on approach, you will give ATC an extra job and ACH VA will charge you for excess fuel!

13. Out of UNICOM to controlled airspace

Now you are approaching the Polish airspace. EPPW_CTR is online. The entry point to Polish FIR is the JAB waypoint (how do I know? well ... there are ways to find out). Approximately 20 miles ahead of JAB you can switch to the EPWW_CTR frequency and contact the WARSAW RADAR (or, if you fell asleep, the controller will wake you up by sending a text message to contact him):

[Warsaw Radar, good evening, ACH9090 with you at FL370, inbound JAB (Juliet, Alpha, Bravo), 20 miles]

[ACH9090, WARSAW RADAR, IDENTIFIED ...]

then again, if nothing else happens, just carry on as filed. If you're lucky, you may get cleared for a shortcut:

[... PROCEED DIRECT ARDAG]

[Direct ARDAG, ACH9090]

14. Descent

So far so good. What about the descent? It is the pilot's responsibility to ask for descent, however, CTR may also instruct you to descend, but they do not have to!

OK, you are ready to descend. Ask EPWW_CTR for clearance:

[ACH9090, requesting descent]

The controller will give you the initial flight level for your descent.

[ACH9090, DESCEND (INITIALLY) TO FL170]

or

[ACH9090, DESCEND TO FL190 TO BE LEVEL AT LOGDA]

– in this case adjust your descent rate to cross LOGDA at FL190.

You may also receive the SID clearance then:

[ACH9090, YOU ARE CLEARED FOR LOGDA 1U (UNIFORM) ARRIVAL]

– this means you should follow the arrival route unless you receive vectors from ATC.

Remember to read back the instructions.

Check the EPWA_ATIS. It should be visible by now. Note the information designation.

15. Approach

You are approaching LOGDA – this is the initial point for the STAR (arrival). You will soon be handed over to EPWA_APP:

[ACH9090, CONTACT WARSAW APPROACH ON 128.80, HAVE A SAFE LANDING, BYE]

[Going to Warsaw Approach on 128.80, thanks for control, bye]

When you contact Approach, tell them your current flight level, position, and ATIS information designator (if ATIS is available):

[Warsaw Approach, good evening, ACH9090 passing ARDAG at flight level 170, with information F(Foxtrot)]

or

[Warsaw Approach, good evening, ACH9090 at FL190, descending to FL170, inbound ARDAG, information F]

[ACH9090, GOOD EVENING, RADAR CONTACT, CONTINUE DESCENT TO ..., (EXPECT ILS APPROACH RUNWAY 33)]

– that's the most probable response from Approach. Read back the instructions.

Did you remember to slow down to 250 at D28 LIN? I knew you forgot! ☺

STARS (and SIDS) are intended to provide routes for aircraft on arrivals and departures, so ATC do not have to give vectors to every pilot every thirty seconds. But if the traffic is low, you can expect early vectoring anyway:

[ACH9090, TURN LEFT HEADING 010, DESCEND 3000 FT, QNH1018]

[Left heading 010, descend 3000ft, ACH9090]

– no need to readback QNH

If the traffic is high, Approach will put you in a queue among other aircraft and may ask you to reduce or increase your speed for separation:

[ACH9090, REDUCE SPEED TO 180 KNOTS INDICATED]

[Reducing speed to 180 knots, ACH9090]

Monitor your position on your navigational display (ND). Be aware of where you are in relation to the runway. When your aircraft is about 5 miles from the runway axis, and you are at about 3000 ft expect to hear:

[ACH9090, (TURN LEFT HEADING 010), CLEARED FOR ILS APPROACH RUNWAY 33, REPORT ESTABLISHED]

[(Left heading 010,) cleared for ILS approach runway 33, ACH9090]

16. Landing

You are now on the correct heading to intercept the ILS. As soon as your ILS needle settles in and you are on the runway heading, report:

[ACH9090 established on localizer runway 33]

Now expect to be sent over to Tower:

[ACH9090, CONTACT TOWER ON 118.30, HAVE A SAFE LANDING, BYE]

[Contact Tower on 118.30, thank you for ATC, good night]

Change your frequency to Tower and contact them:

[Warsaw Tower, good evening, ACH9090 established on localizer (or ILS) runway 33]

If, for some reason (e.g. other aircraft is on the runway), Tower cannot allow you to land yet, you will hear:

[ACH9090, GOOD EVENING, CONTINUE APPROACH]

[Continue approach, ACH9090]

When you are number one for landing and the runway is free, you will finally hear what you have been waiting for for a long, long time:

[ACH9090, WINDS IS 340 DEGREES AT 4 KNOTS, RUNWAY 33 YOU ARE CLEARED TO LAND]

[Cleared to land, runway 33, ACH9090]

– no need to read back the weather.

Now forget all ATC and concentrate on landing. If you have studied EPWA charts before, you may have noticed that this airport has intersecting runways. Therefore it is advisable, after landing, to exit the runway after passing the intersection with runway 33, not before – this way you won't have to cross runway 29 while taxiing to your gate.

Hurray! You've landed. When you exit the runway, report:

[ACH9090, runway 33 vacated (via ...*)]

*if you know the label of the exit you used, notify the ATC. If not, they should see you anyway.

I'd like to see you now, all wet with sweat, but proud and happy!

[ACH9090, WELCOME TO WARSAW]

– if the Ground station is present, you will now be sent to the frequency of EPWA_GND. If not:

[ACH909, TAXI TO STAND 13 VIA O AND M]

[Taxi to stand 13 via O and M]

SWITCH YOUR TRANSPONDER TO "STANDBY" MODE NOW.



Taxiing at a foreign, unknown airport at night (and sometimes even at day) may be difficult in our simulation environment, even with the ground/apron charts at hand. If you believe you are getting lost, you may say:

[ACH9090, we are unfamiliar with the airport, requesting progressive taxi]

– you are asking ATC to guide you leg by leg. If not too busy with other aircraft they will guide you:

[ACH9090, CONTINUE ON PRESENT TAXIWAY, THEN TURN FIRST LEFT]

– read back and follow instructions.

Here we are. Finally at your gate. Hey ... what a great feeling!

When you set your parking brakes, report:

[ACH9090 on blocks (at stand 13)]

[ACH9090, FLIGHT PLAN CLOSED AT 30, THANK YOU FOR FLYING TO WARSAW, HAVE A GOOD NIGHT]

– this is probably the last transmission from ATC for this flight.

[Thank you very much for ATC service and good night, ACH9090]

In real aviation you have landed the moment you open the aircraft doors. Go ahead, or let your virtual cabin crew do some work, for a change ...

CONGRATULATIONS, WE HAVE A NEW AIR-CHILD ONLINE PILOT ON THE VIRTUAL SKY!

17. Other important issues to remember:

- ☞ *All letters and numbers are read back one by one: 122.30 – one two two decimal three zero; taxiway LW – Lima Whisky; runway 33 – runway three three.*
- ☞ *Always read back ATC instructions! – well, almost always...*
- ☞ *Comply with ATC instructions, don't ignore them – it is better to say "say again" rather than pretend you are not there – ATC are here for us and we are there for ATC – everyone wants to have fun and satisfaction.*
- ☞ *If you are unable to follow an ATC instruction – say something like this: [ACH9090, unable, due to (... i.e. strong tailwind)] and ATC will give you alternative instructions.*
- ☞ *Always set your transponder (squawk) mode to 'Standby' on ground, and 'C' (Charlie) when airborne.*
- ☞ *Never pretend you understood ATC instructions if you didn't. Just say [Say again, ACH9090] and you will have the message (instruction) repeated.*
- ☞ *Write down the ATC instructions, it becomes a lot easier to read back and comply, and you will be learning faster.*

18. Other common ATC phraseology:

- ☞ **[ACH9090, REPORT YOUR HEADING]**
 - ATC wants to know your current course
- ☞ **[ACH9090, REPORT YOUR RATE OF DESCENT]**
 - ATC wants to know how fast you are descending
- ☞ **[ACH9090, REPORT YOUR SPEED]**
 - ATC wants to know your current speed (IAS)
- ☞ **[ACH9090, CONFIRM YOUR HEADING/ALTITUDE, ETC.]**
 - ATC is not sure if you are following their instructions. Please give them your current heading/altitude etc, so they can repeat initial instructions and allow you to correct possible mistakes. Happens to everyone.
- ☞ **[ACH9090, NEGATIVE]**
 - two possibilities:
 - (1) you asked for something, for example higher speed, and ATC refuses, or
 - (2) you have made a mistake in your readback. In this case ATC will repeat the instruction and wait until you read it back correctly. Happens all the time, in virtual as well as real aviation.



19. Final remarks

Dear Air-Child pilot, this guide is a most concise set of instructions, even though it has several pages. It is intended to help you with your first online flight. Obviously it does not cover all the extensive knowledge of all aspects and phraseology related to flying under live ATC. All the little details, what-if's and so-what's are to be found in numerous VATSIM tutorial sections. What you have been presented is just a most probable scenario for this very flight. But you will soon realise that a good part of it is useful for other flights. Fly online - nowhere will you learn better and faster.

VATSIM is a living community, where real human interaction takes place, where sometimes not everything goes by the book. There are good moments and bad moments. And everyone makes mistakes, controllers and pilots. Of both, there are better and worse. But we all have fun.

Last but not least, be warned: once you made your first landing online, you will never want to go back to offline flying. Just make the first move, we will help you with the rest.

Rafal Bardel
Air-Child VA, Director for Online Activity

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