

# VACCSCA FLIGHT 1 – Oslo – Arlanda – Scandinavian 498

## You need the following documents



Charts for Oslo Gardermoen (ENGM): <http://www.vaccsca.org/uploads/ENGM.pdf> Upper airways map  
Sweden: [http://aip.lfv.se/3AIP-ENR/ENR6/ES\\_ENR\\_6\\_1-1\\_en.pdf](http://aip.lfv.se/3AIP-ENR/ENR6/ES_ENR_6_1-1_en.pdf)  
Arlanda charts: [http://aip.lfv.se/4AIP-AD/AD2/S/ES\\_AD\\_2\\_ESSA\\_en.pdf](http://aip.lfv.se/4AIP-AD/AD2/S/ES_AD_2_ESSA_en.pdf) (Be aware some 120 pages!)

Today's flight takes us from Oslo Gardermoen to Stockholm Arlanda. We are flying a flight with the company Scandinavian and our flight number is 498.



If you would like to use an other callsign than "Scandinavian 498", you are more than welcome.  
In the text SAS is the same as Scandinavian spoken. So SAS498 is pronounced as "Scandinavian 498"

Before continuing start up FlightSim and Squawkbox along with other programs that you need and get them working together. But don't connect just yet. We have a bit of pre flight planning to do.

## Today's route

Before we log on to vatsim we need to plan the flight. The route from Oslo to Arlanda looks like this:

**SUTOL UP607 ELTOK**

Other pre-flight issues like fuel planning you have to take care of yourself. This tutorial only covers how to get online and fly between Oslo and Stockholm.



In your flight plan don't write your dep/dest or sid/star under routing. DEP/DEST can be seen other places in your flight plan. And SID/STAR will be provided by the ATC.



Before connecting make sure you are parked at a stand or gate and NOT on a runway or a taxiway in the middle of it all. This is one of the basic rules of vatsim

In this tutorial we will be parked at **gate 44 at Gardermoen**. Now we almost are ready to connect to vatsim. Make sure your aircraft is parked at a gate or a stand, and then connect.

## Connected and pre flight planning

File Flight Plan

Flight Type: IFR      Callsign: SAS498      Aircraft Type: MD80/1

Departure Airport: ENGM (ICAO code)       Heavy

Arrival Airport: ESSA (ICAO code)      Aircraft Capabilities: Simple RNAV, Transponder with mode C

Alternate Airport: ESSB (ICAO code)      Route: SUTOL UP607 ELTOK

Departure Time: 1355 (UTC, 24 hour)      Comments: RMK/NEWBIE - VACCSCA FLIGHT1

Enroute Flight Time: 1 hours 10 minutes

Fuel Available: 3 hours 45 minutes

Cruising Airspeed: 475 (Knots true airspeed)

Cruising Altitude: FL310 (Feet ASL or Flight Level)

Voice Capabilities:  Voice Send and Receive  
 Voice Receive Only  
 Text Only

For Simulated Use Only

Load... Save...  
Send Flight Plan Cancel Help

Fill out your flight plan like the one above. Pay attention to Dep., Dest., Routing, FL and Remarks

Under remarks you can write remarks to ATC. If you are new to vatsim it might be a good idea to write "Newbie" in your remarks. We've all been new to this world at some point. And no one on the network are "looking down" upon new pilots - It's the other way around. When you tell people you are new, they often are

more than willing to help you learn and understand. To tell the ATC that we are flying this tutorial please also write **"Vaccsca Flight 1"** in your remarks. Then ATC can help you even better as he then knows about the journey you are about to embark.

Okay. The ATC will now receive your flight plan and check it for errors. Meanwhile we still have some work to do. We need to check the weather. You can get the weather from both Oslo and Arlanda trough SquawkBox.

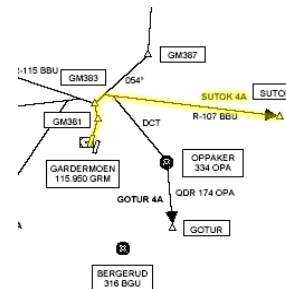
When I wrote this tutorial the weather for Gardermoen and Arlanda was:

**ENGM 201450Z 01011KT 9999 SCT040 BKN065 01/M05 Q1011 NOSIG**

**ESSA 201450Z 06006KT 9999 FEW014 BKN040 01/M01 Q1011 NOSIG**

So in Oslo the wind is from the north at 11 kt. In Stockholm from the east at 6 kt.

The winds in Oslo indicate that runway 01L will be in use for departure. Looking at our maps from Oslo, we can see that the departure route from runway 01L to the SUTOK is the SUTOK4A (Sutok four alpha departure). So now we know what to expect.



Let's also take a look at ground map. We are parked at stand 44 and know that runway 01L will be used for departure. So just by looking on the map, I'm sure you can guess which taxi-instructions you'll be given later on. This is also pre-flight planning! When you prepare, things don't come as a surprise.

**i** Always keep paper and a pencil next to you so you can write down all instructions. If things get hectic this will help you remember, and you can avoid having to ask again.  
 And when you speak - speak a little slower than normal, but at normal volume - this is not a contest on who can say the most in the shortest time.  
 At [www.hilmerby.com](http://www.hilmerby.com) you can find examples on real radiocommunications.

**Clearance, Start up & push back**

Okay. The passengers are boarding and in a few minutes we'll be ready to start our journey. Let tune in Gardermoen Ground.

**i** Do you remember how the ATC hierarchy works? Contact the "lowest" ATC in this order DEL-GND-TWR-APP-CTR. Read more on the Vaccsca page. In the rest of this paper, I assume all positions are manned from Ground and up.

**After tuning "Oslo Ground" what is the first thing you do? Nothing!**

You just sit back and listen for a minute or so. Why? First of all, there might be others on the frequency, and only one can speak at a time, so you'll have to wait until communication have stopped. Remember that messages must be read back, so you do not transmit until the read back of the former message has been completed. Further more listen to what is being said. Might prepare you better for when you call. Use this minute to read the ATC's ATIS.

**i** The ATIS is the ATC's chance to provide you as a pilot with important information or information often requested by pilots. So please take a minute and read through the few lines of text.



**i** Often the ATIS is assigned to a letter. In this case "P", which tells us that this is "version P". If the information in the ATIS change (could be due to weather) the ATIS will be assigned a new letter, the next is the alphabet. So after P the next ATIS would be Q. Then R, S, T and so forth. After Z it starts with A again.  
 When contacting the controller tell him which information you have read. Like any other letters over the radio you use the phonetic alphabet, so "Info P" is pronounced "Information PAPA".  
 If a new version is available the controller might tell you something like "Information QUEBEC" in now current. Then you need to reload the ATIS and read again. If Info. P still is valid the ATC will tell you "information PAPA is correct"

Okay. The frequency is silent now, and **we are ready to call the ATC**. What to say... Well in short always at initial contact tell who you are where you are, and what you want. Furthermore remember from the ATIS what the ATC also wanted.

<p>Ground, SAS498, stand 44 with information Lima, request IFR clearance to Arlanda.</p>	<p>Your first call. Where you tell who you are, where you are, and what you want. Along with the Info.</p>
<p>SAS498, Information Lima is correct. You are cleared to Arlanda as filed on SUTOK 4A departure. Squawk 4204.</p>	<p>ATC confirms that "Info L" is the newest. Furthermore he gives you your clearance. You knew that you would be filed to Arlanda. Sutok 4A we also saw that one coming. Only "news" is the Squawk code</p>
<p>Cleared to Arlanda as filed. Sutok 4A and squawk 4204. SAS498</p>	<p>You need to read back the clearance. Tune your squawk.</p>

SAS498, read back correct. Start up and push back approved. QHN 1011. Call for taxi	ATC confirms that your readback was correct. Furthermore ATC approves you start up and pushback.
Start up – push back. QHN 1011. Will call taxi. SAS498	You start you engines and call GND when you are ready to taxi.

Take a look at this clearance. Because we did our homework, the only thing that we couldn't tell before hand was the squawk code. If you have a closer look at the SID, the initial climb is 7000ft. So punch in 07000 on the autopilot. If the SID didn't have an altitude restriction or the airport doesn't have a SID (like many small airports), an initial climb will be included in your clearance.

 The "Start up" isn't start-up of your engines. The Start up indicates that your flight plan has been opened, and you flight has started. In real life you would coordinate start up of engines with the ground crew. So you can start your engines whenever you want.
 Each flight is assigned a different squawk code that the pilot has to dial in to the transponder. Squawk-codes vary from flight to flight. In this case we were asked to squawk 4204, but this could be any other number. The squawk-code has nothing to do with flightnumbers.

If you didn't program your FMS or FsNavigator before now is the time to do it.

Start up your engines and push the aircraft back from the gate. You are now holding on Taxiway Golf (Twy G) – engines running and ready to taxi to the active runway.

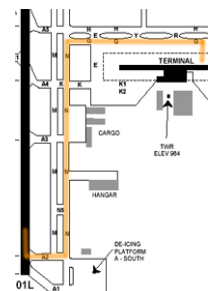
### Taxing

So it's time again to call the ground ATC.

Ground, SAS498, pushed from stand 44. Ready to taxi.	Help ATC by telling him where you are.
SAS498, taxi to and hold short - runway 01L using taxiway G-N.	Ground tells you where to taxi and which way he wants you to use.
Taxi 01L via G-N. SAS498	You need to read back the clearance.

Looking at our ground map, this taxi clearance didn't come as a surprise did it? G-N is more or less the only way to get to rwy 01L. No surprises here. But of cause you wrote it down for later reference.

Apply power and start rolling towards the runway. Taxi at a moderate speed (max 15-20 kt) and keep an eye out for other traffic - some might even pop up right in front of you, when new pilots are logging in. And at all time keep a good distance to aircrafts ahead of you. One thing that messes things up - we use different scenery! Some use default scenery, freeware addons, payware addons. And the positions are not always the same. So let's be careful out there!



At some point Ground hands you over to Tower. It's towers job to manage the runways.

SAS498, contact Gardermoen Tower on 118.30. God tur.	
Tower on 118.30. Thanks for service. SAS498	Acknowledge the hand off

Okay you now change your frequency to Tower. There are different ways of doing this. Again when you tune a new ATC, listen before transmitting, and don't forget to read the ATIS.

Tower SAS498, on taxiway N for RWY 01L	
SAS498, continue taxi via N and A2 – line up and hold runway 01L. Report ready for departure.	Tower gave you permission to taxi onto runway and stop there. But you are NOT cleared for take off!
(or)	
SAS498, continue taxi via N and A2. Hold short 01L Report ready for departure.	Perhaps there is an aircraft in front of you, so you need to stop before rwy 01L on twy A2.
Hold short 01L via N and A2. Will report ready. SAS498	Acknowledge the taxi clearance and that you will call when you are ready.

So you are rolling along on November. In this example you have a SAS MD-90 going to Trondheim in front of you on the way to the runway. That's why you have to hold short of the runway as the SAS aircraft will be departing in front of you.

**Remember under no circumstances do you cross the stopline into runway 01L, before you are approved to do so by ATC!**



The term "ready for departure" is when your and your aircraft is ready for take-off. You might not yet be at the runway. But if you are ready (flaps set, final check list, V-speeds and so on) then report ready for departure. ATC might give you take off clearance without you have to stop and hold short. Saves you time.  
Again don't use the term "ready for take-off" as it might be confused with "cleared for take-off". Use "ready for departure".

Approaching the runway and ready for departure? Call tower and report ready for departure:

Tower, SAS498 ready for departure 01L.	
SAS498, behind departing company MD-90 line up and hold 01L	There is an aircraft in front of you. So you can't take off yet. But you can taxi on to runway 01L, and stop there.
Behind company MD90 Line up and hold 01L.	So you taxi on to 01L and wait.
SAS1358, winds 010 at 11 kt – runway 01L –cleared for take off – Report airborne.	The MD-90 in front of is not cleared for take off.
Winds 010 at 11. Cleared for take off SAS 1358	The MD-90 starts his take off roll. Wait just a bit before lining up on 01L.
SAS1358 airborne passing 1200feet.	The MD-90 reports he's airborne.
SAS1358, Radar contact 1200 ft. Contact Approach on 120.45. Ha en god tur!	As the aircraft leaves the airport he's handed over to Approach
120.45 SAS 1358	
SAS498, winds 010 at 11 kt – runway 01L – you are cleared for take off – Report airborne.	Now it's your turn!

When the MD-90 has started rolling down the runway you can taxi on to it, line up on the center line and set your parking brakes (You don't want to line up before the MD-90 has departed. Such a jetblast can make you spill your coffee in the cockpit).

From the time you were cleared to enter the runway, you OWN it! Did you forget something? (Tower might approve line up before you are ready for departure) Take your time to get your final preparations done. Remember, when airborne you can't (just like in real life) pause your aircraft, while you look things up in the manual – you are NOT alone anymore!!!

### Take-off and climb

Tower asked you to report when you were airborne. So when you have time after take off contact Tower.

Tower, SAS498 airborne	Don't call before you have some spare time. Get a positive rate of climb gears up and so on. Then call.
SAS498. Radar contact 1400ft. Contact Oslo Approach on 120.45. Hej.	Tower tells you that he have you on his radar screen at 1300ft. And hands you over to next controller
Approach on 120.45. God dag. SAS498	Acknowledge the hand off

Okay. You are airborne now. Remember that the SID had an initial climb at 7000ft. So for now you are not allowed any higher. Continue on the SID and call approach on 120.45. As always listen to the freq before calling.

Approach, SAS498 on Sutok 4A departure. 1500 ft climbing 7000ft.	Again tell the ATC who you are and where you are going.
SAS498, identified. Continue climb FL190 – free speed.	You can now continue up to FL190 on the Sutok 4A departure and you are allowed to speed up above 250 kt below FL100. Seems like the MD80 is out of the way.
(or)	
SAS498, identified. Continue climb FL120.	You can continue up to FL120. But seems like the MD-90 is blocking the climb in front of you.
Climb FL120, SAS498	



The SID and STAR are used to provide standard routes and separation for when more aircrafts are in the area. But if there isn't anyone else around, then ATC might as well turn you on a more direct route and/or give you free speed. But remember you are the pilot! If you want to fly the SID tell ATC. On the other hand you might also ask ATC if you can go direct if he doesn't do it.

Remember that transition altitude is 7000', so on passing 7000' you set your altimeter to 1013 hPa (29.92). When online remember to set the altimeter at Transition Altitude/Level, as you might not be on the correct altitude if you forget.

In all this hectic phase of the flight do not forget to fly the plane and to follow the SID unless instructed otherwise. Don't regard use of autopilot as "cheating"! It is there for a purpose - use it - real world pilots do it - so should you!

SAS498 traffic no longer a factor. Climb FL190.	The MD-90 is out of the way and you can continue up to FL190
Climb FL190, SAS498	

Approach cannot clear you higher than his area of responsibility which in Oslo is FL190. So as you get nearer to FL190, he comes on again:

SAS498. Contact Oslo Control on 125.05 for higher.	Approach tells you, that you now have to contact Control, and he will give you a higher FL.
Oslo Control on 125.05. Hej hej. SAS498	Acknowledge the hand off
Tune Oslo Control (ENOS_V_CTR) on 125.05.	
Oslo Control SAS498, FL165 for FL190 Sutok 4A departure	
SAS498 identified. Continue climb FL310	Control uses identified to tell you, that he has spotted you on his scope.
FL310 SAS498	

So you are now cleared to your cruise level, the stressful part is over for now, now you just let the autopilot work - and have an ear out for call for you. The intersection SUTOK ends the SID, but also indicates the border to Sweden. So before you reach SUTOK Oslo will hand you over to Stockholm.

SAS498. Contact Stockholm on 118.400.	
Stockholm on 118.4. SAS498. Vi ses.	
Tune Stockholm Control on 114.80	
Stockholm, SAS498 with you FL250 climbing FL310	
SAS498 identified. Continue as filed	Stockholm tells you to follow the route in your flight plan.
As filed. SAS498	

### Cruise and inbound

Hopefully the next half hours time will be uneventful as long as you fly through Sweden. Time to grab a cup of coffee. At one point Stockholm might call you with some information about Arlanda.

SAS498. Latest weather Arlanda: Winds 060 at 6 knots. Few clouds 1400 Broken 4000. Temperature 4 Dewpoint minus 1. QNH 1011. Expect ELTOK 3M Arrival for runway 01R.	The weather is a service to you. Also the ATC tells you what to expect later on. But you are not cleared inbound Arlanda yet.
Winds 060 at 6 and QNH 1015. Expecting ELTOK 3M for 01R SAS498.	You always have to readback winds and pressure (QNH). Also tell the ATC that you have understood what to expect.

At this point you might as well start planning your approach. Get the ELTOK3M Arrival punched in to the computer (FMS/FsNavigator). Or look at the charts and fly accordingly.

As we cruise along we get nearer our top of descend (The point where we should start our descent). ATC might call you beforehand with descend orders, otherwise you can call ATC and request descend.

SAS498 Cleared inbound Arlanda on ELTOK 3M Arrival. When ready descend FL 110.	The ATC gives you a clearance on the STAR and descend. Own discretion means "when it suits you / when ready". So you don't have to start your descend now if later is better for you
Cleared inbound on the ELTOK3M arrival descend FL110 will report leaving SAS498	
Stockholm SAS498 leaving FL310 for FL110	When you start your descend you call Stockholm and tell that you are leaving

SAS498	FL360 This "only your call sign" is an acknowledge of your transmission.
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You are now cleared inbound Arlanda on the ELTOK3M arrival. Take a look at the chart for the ELTOK arrival so you are prepared. When should you be at FL150? Well, he didn't tell you so you use your usual descend rate (approx. 2000'/min). He'll come back to you, if he wants something else. The ELTOK 3M STAR has an altitude restriction: At or below FL 130 at ELTOK. So make sure to start your descend in time. Looking at the chart you could ask "What happens after BALVI? The STAR stops there!" After BALVI the ATC will give you vectors, and line you up for the runway (Green in the map above). If no ATC is online you have to find your way to the runway by you self.

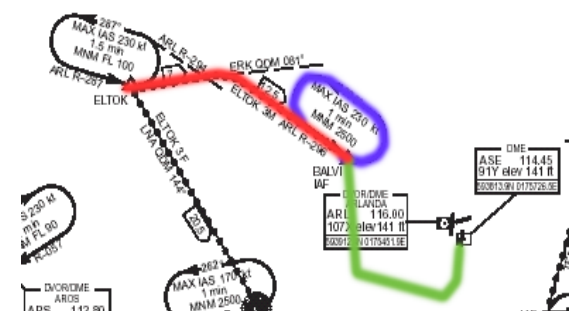
### Approach and landing

Shortly after Control hands you over to Approach.

SAS498. Contact Stockholm Control on 118.5.	
Stockholm Control on 118.5. Hej då, SAS498.	
Hej då	

**i** This might cause some confusion. But at Stockholm both the Center (CTR) and approach (APP) position is called "Stockholm Control". However they use different frequencies so have a ear out for which frequency to tune. On VATSIM the suffix for the controller position makes it easier to separate the two as the center is called ESOS\_V\_CTR and the approach is ESSA\_V\_APP. So if in doubt look for the suffix' or ask the controller. However sometimes it's also referred to at "Approach" so it's no problem using the word "Approach"!

Tune Stockholm Control (ESSA\_V\_APP) on 120.45. Don't forget to read the ATIS as it contains information about which runways in use. Might also contain an "information" (such as Info Juliet) that indicates the weather. Remember to state information in your initial call. If a new ATIS is out (The new one would be Info. Kilo) then the controller will tell you that Information Kilo is current. Then you know your weather information for Arlanda is outdated.



Stockholm Control, SAS498 with you FL150 for FL110 inbound on the ELTOK 3M arrival. We have information Juliet.	Again tell him where you are, where you are going and the information received (if you have received any)
SAS498 identified. Information Juliet is correct. Descend to FL70 at BALVI. Expect vectors runway 01R.	
FL70 at BALVI, SAS498	You need to read back the clearances

Before BALVI you'll receive further descend and vectors

SAS498 after BALVI turn right heading 175. Descend to 4000 ft QNH 1011.	When ATC tells you the QNH it means that you are passing the Transition Level, and must adjust your altimeter to local pressure. After BALVI change you autopilot to headingmode on heading 175.
After BALVI heading 175 and down to 4000 ft on QNH 1011 SAS498	Remember to read back the pressure as well.

Continue on heading 175 until ATC tells you something else. There might be traffic in front of you.

SAS498 turn left hdg 100 descend to 2500 ft.	
Left 100 and 2500ft – SAS498	

Okay. You are getting close to the airport. If you haven't already done so, slow down now to around 200 kt on the last part of your approach. Are you ready for the final approach? Tuned the NAV on the ILS? Have the ground map at hand? Flaps on their way out? When you get near the ILS try to keep your speed around 180 kt. That's a good rule of thumb.

Here we go – final approach to Arlanda. We have an Air Portugal from Lisbon (and Copenhagen) in front of us.

SAS498 turn left 040 cleared ILS approach RWY 01R. Report established.	Turn to hdg 040 and you should be lined up for the ILS approach.
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Left 040, cleared ILS 01R. Report established.	
Approach, SAS498 established ILS Runway 01R	This tells ATC that you are lined up for landing.
SAS498 contact Tower on 118.30	Approach's job is to line you up for landing. But Tower has responsibilities over the runways.
Arlanda Tower on 18.3. Hej SAS498.	

Is it ok to land now? NO, you are cleared on the ILS, but if you reach the missed approach point (MAPt), you have to execute a missed approach. Where is the MAPt? It is at your decision height (DH) – Arlanda RWY 01R it's 171 ft above the ground. Now tune Tower and tell him, that you are established on the ILS 01R

Tower, SAS498 on the ILS 01R 8 miles out	
SAS498 identified. Continue approach – number 2	You are not cleared to land. But continue down on the ILS.
Continuing, number 2, SAS498	

Now what was that? Number 2? Well with the Air Portugal (TAP502) in front of us we can't be cleared for landing yet. So you just continue riding down on the ILS, getting ready for landing. Let's see what happens later now:


TAP502 you are cleared to land runway 01R winds 060 at 6. Report vacated	Tower gives the aircraft in front of you landing clearance
Copy winds and cleared to land 01R TAP502	And so the Air Portugal pilot lands.
TAP502 vacated runway 01R via WE	When the aircraft has vacated the runway the pilot tells the tower so, and the next in line (you) can get landing clearance.
TAP502 – Continue taxi on W. Contact Ground on 121.925	Tower hands the aircraft over to Ground for further taxi
Ground 121.92, TAP532, bye	

So where are you in all this? Hopefully not yet at you Missed Approach point. If so you should by now have reported "go around" to Tower. Well you are still on the approach and now towers calls

SAS498 you are cleared to land runway 01R winds 060 at 6. Report vacated	You are now cleared to land
We are cleared to land 01R. Winds 060 at 6. SAS498	You need to read back the clearances and the winds.


After you have landed you need to get off the runway as fast as possible. Have your ground chart at hand.

Tower SAS498 vacated RWY 01R via WF	Report when you have vacated
SAS498 – Landing time on the hour – Continue taxi on W Contact Ground on 121.92	The landing time are sometimes told be ATC
Ground 121.92 SAS498 hej	
Ground SAS498 on W taxi to gate	New ATC. Tell him where you are and want to go.
SAS498 taxi to stand 4	
Stand 4. SAS498	

 Taxi clearances at Arlanda doesn't include which taxiways to use. This is issued on a chart, so when you get taxi clearance to a gate or runway, you look at the chart and see which way you have to go.
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Have a look at the ground map and as in all other airports doing taxi, have a lookout for other aircrafts. Where did that Air Portugal go? Okay you are parked now at stand 4. Tell ATC.

Ground SAS498 parked at stand 4	Here you are telling ATC that you have arrived
SAS498 Welcome to Arlanda. Hope you enjoyed the flight. Flight plan closed. Good evening.	
And a good evening to you thanks for ATC.	

 Some pilots say "request shutdown" but like "Start up" this refers to closing/shutting down the flight plan. Even though many pilots tend to think it has to do with the engines.
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**That's it!** You've done your first online flight - and you were lucky - you got ATC all the way! :-)

It can't be underlined enough, that having FUN, is the MOST important thing with all this. So do it your way - and maybe you've got some good tips for us to learn. Being part of the Virtual Skies is a great way to get new friends from all around the world.

**The End**

This tutorial have been written by Torben Andersen and Peter Noerkjaer. Thanks to Torben for his help!