

**A**s Squawkbox 3 hits the virtual shelves for distribution across the world, many pilots, including yourself, are bound to jump online at the busiest airport only to realize they don't have a clue what they're doing. But you really want to fly, you just don't know how. Where do you start? What route do you use? Who is LAX\_V\_DEL!?

*All of this is typically necessary information whenever you're flying online, because unlike offline flying, controllers don't like it very much if you press pause and mess up their traffic flows. I almost must tell you that even though they're 'simulated,' the scopes do sometimes get a little frustrating, just like they do in real life. There is a reason that controllers in real towers have a nice comfortable room with a sofa and pillows. Things do get heated, but it is best to take everything smoothly. If you find yourself in a difficult situation with a controller, your best bet is to log off and go somewhere else, or ask someone else for help. Everyone is human, and yes, controllers do sometimes make mistakes.*

*Follow my basic steps, and no one will know it's your first flight.*

## **I need a ROUTE, and not just another few VORs.**

The first thing to do BEFORE you start up your flight simulator is to get a route. What do I mean? Open up your web browser and go to Los Angeles Air Route Traffic Control Center's (ARTCC for short) website ([www.laartcc.org](http://www.laartcc.org)) In the bottom left corner, under For Pilots you will see, **Preferred Routes** ( [www.simroutes.com](http://www.simroutes.com) ). This link is your friend, book mark it, put it under your pillow, take it to the movies with you, YOU WILL NEED THIS LINK. This flight planner is the easiest one I know of and has most of the routes that you will need. It's constantly growing as well, so if you can't find a route one day, check back a few weeks later and it will probably be there.

For our flight today, we're planning to fly from San Diego Lindbergh Field to Las Vegas McCarran Airport. In the departure box, type in our departure airport ICAO code: KSAN, and in the arrivals box type in KLAS as our arrival airport. It should look something like this:

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3/8/2005: It is official! Atlanta (ZTL) joins the flightplanner project!  
 3/6/2005: Atlanta (KZTL) ARTCC is considering taking part in this project.  
 2/20/2005: DAFIF AIRAC 0502 is now active.  
 12:00:04 AM: Houston ARTCC (KZHU) joins the flightplanner  
 12:00:04 AM: Honolulu (PHZH) joins the project.

VATUSA Flightplanner 4.1	
Departing:	<input type="text"/>
Arriving:	<input type="text"/>
Route Type:	All Routes <input type="button" value="v"/>
Operations:	<input checked="" type="radio"/> All <input type="radio"/> Normal <input type="radio"/> Alternate
Options:	<input type="checkbox"/> RNAV <input type="checkbox"/> Noise Abatement
Distance:	Longer Than <input type="text" value="0"/> NM
<input type="button" value="Find Plans"/>	

Flightplanner Statistics			
Flightplans in Database:	8846	Searches Performed:	102026
Site Visits:	86225	Flightplans Filed Online:	4718
Project Live Since:	01/01/2005	Participating ARTCC/FIRs	20
Current Airac:	DAFIF AIRAC 0503 (MAR17/APR13/05)		
New ARTCC/FIR Member:	Houston (KZHU) on 3/28/2005		
Most Recent Route Added:	KIAH BPT4.BTR J590 GCV LGC1 KATL		
Top 20 Routes Selected			
Route	#		
KLAX VTU4 RZS J501 BSR BSR2 KSFO	996		
KSFO PORTE3 AVE SADDE6 KLAX	369		
KLAX LAXX5 DAG CLARR2 KLAS	268		
KDEN ROCKH HBU J128 PGS MITTS2 KLAX	252		
CYYC J508 B00TH B00TH5 CVVR	222		

Now that you've done that, click Find Plans! Hopefully the fate leprechauns like you, and you'll find your route (in this case if you don't, you did something wrong).

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VATUSA Flightplanner 4.1	
Departing:	<input type="text" value="KSAN"/>
Arriving:	<input type="text" value="KLAS"/>
Route Type:	All Routes <input type="button" value="v"/>
Operations:	<input checked="" type="radio"/> All <input type="radio"/> Normal <input type="radio"/> Alternate
Options:	<input type="checkbox"/> RNAV <input type="checkbox"/> Noise Abatement
Distance:	Longer Than <input type="text" value="0"/> NM
<input type="button" value="Find Plans"/>	

Origin	Route	Destination	NM	Type	Comments
KSAN	MZB V514 BLD	KLAS	225	LO	Types P&O route.
KSAN	BRDR5 JLI V514 TNP CLARR2	KLAS	225	LO/ALT	Type M route
KSAN	PEBLE3 SXC LAX J9 DAG CLARR2	KLAS	225	HI	Jet route. KSAN East Ops file [...]

You can see there are multiple routes listed, since for my flight, we're going Jet (J) then we're going to use the bottom route. **PEBLE3.SXC.LAX.J9.DAG.CLARR2**. Don't know how to read a chart? Well, We'll address this in another section. You may also notice it says "Types" well, types P&O are both props, type P is piston faster than 190 knots, type Q is the slowest- being less than 190 knots, and type M are turboprops greater than 190kts. We're type J for, oh, you guessed it. Jet.

I'd highly suggest if you print out the next page, as it has all the information for your route that you'd ever need. You can click on each link and it will take you to the appropriate chart, as well.

If you can't find your route, maybe you can file a route and a controller can amend it, but this should never be used in place of finding your own route. You might also want to see if you can find an airport \*near\* the one you're trying to go to. This will give you at least the first half of the clearance correct.

Also, you may want to look at the chart and see what the narrative says. For example on the Ventura 4 departure, it states:

**TAKE-OFF RUNWAYS 6L/R, 7L/R: Climb via heading 070° for vector to VTU VOR/DME.**

**Thence. . . .**

**TAKE-OFF RUNWAYS 24L/R, 25L/R: Climb via heading 250° for vector to VTU VOR/DME.**

**Thence. . . .**

**. . . .via (assigned transition) or (assigned route). All aircraft expect further clearance to filed flight level three minutes after departure.**

Notice how it says for runways 24 L/R and 25L/R "Climb via heading 250 FOR VECTOR"? This means as a pilot, you will fly heading 250, until Departure gives you a vector to go to the VTU VOR. Do not take off and fly direct to VTU; this isn't how it works.

Now, let's look at another. This one is the LOOP4, which pilots also commonly mess up.

**TAKE-OFF RUNWAYS 24L/R: Climb via heading 250° to cross SMO R-160 at or below 3000, then via radar vectors to LAX VORTAC. Expect left turn direct LAX VORTAC. Thence....**

**TAKE-OFF RUNWAYS 25L/R: Climb via heading 250° to cross SMO R-160 at or below 3000, then turn left heading 235° for vector to LAX VORTAC. Expect left turn direct LAX VORTAC. Thence....**

**.... via (assigned transition) or (assigned route). All aircraft expect further clearance to filed flight level three minutes after departure.**

Okay, first we must choose which runway we're on. If I was departing off 24L, I would fly heading 250 and expect a vector to the LAX VOR. Not so hard.

Now, for 25L, We would takeoff, fly heading 250, until we cross the SMO 160 Radial. This means if you tune your VOR Nav 1 radio to SMO's frequency (110.8) and put the course knob at 160, once you see the needles cross, then continue to drop off, you can turn LEFT, not right to heading 235, then Departure will give you a left turn direct to the LAX VOR. Simple enough, isn't it?

## **Our entire Route.**

Given that you've probably never flown a chart before, I should probably walk you through it. First we grab our charts. We'll need the PEBLE3 and the CLARR2.

ATIS 134.8  
 CLNC DEL  
 125.9  
 GND CON  
 123.9  
 LINDBERGH TOWER  
 118.3 338.225  
 SOCIAL DEP CON  
 WEST 119.6 363.1

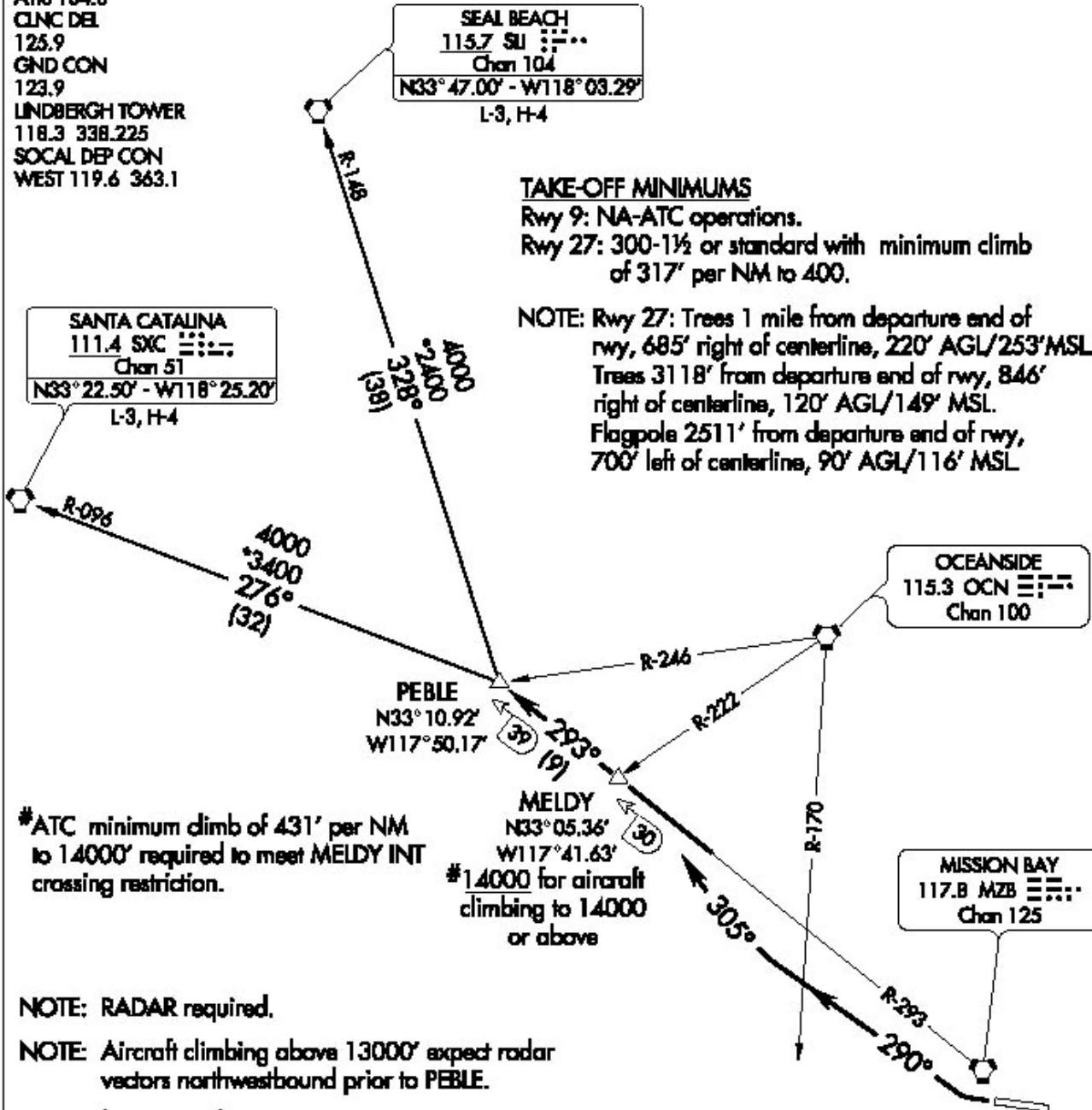
SEAL BEACH  
 115.7 SU  
 Chan 104  
 N33° 47.00' - W118° 03.29'  
 L-3, H-4

SANTA CATALINA  
 111.4 SXC  
 Chan 51  
 N33° 22.50' - W118° 25.20'  
 L-3, H-4

**TAKE-OFF MINIMUMS**

Rwy 9: NA-ATC operations.  
 Rwy 27: 300-1½ or standard with minimum climb  
 of 317' per NM to 400.

NOTE: Rwy 27: Trees 1 mile from departure end of  
 rwy, 685' right of centerline, 220' AGL/253' MSL  
 Trees 3118' from departure end of rwy, 846'  
 right of centerline, 120' AGL/149' MSL.  
 Flagpole 2511' from departure end of rwy,  
 700' left of centerline, 90' AGL/116' MSL



\*ATC minimum climb of 431' per NM  
 to 14000' required to meet MELDY INT  
 crossing restriction.

\*14000 for aircraft  
 climbing to 14000  
 or above

NOTE: RADAR required.

NOTE: Aircraft climbing above 13000' expect radar  
 vectors northwestbound prior to PEBLE.

**DEPARTURE ROUTE DESCRIPTION**

**TAKE-OFF RUNWAY 27:** Climbing right turn via heading 290° until crossing OCN VORTAC R-170, then turn right via heading 305° to intercept and proceed via via MZB VORTAC R-293 to PEBLE INT. Aircraft climbing to 14000' or above, cross MELDY INT at or above 14000'. Then via (transition) or (assigned altitude). Maintain assigned altitude.

**SANTA CATALINA TRANSITION (PEBLE3.SXC):** From over PEBLE INT via SXC R-096 to SXC VORTAC.

**SEAL BEACH TRANSITION (PEBLE3.SU):** From over PEBLE INT via SU R-148 to SU VORTAC.

*Departure instruction by Paul Meyer.*

We'll assume we are flying a plane with the FS2004 default Boeing 737-400 panel, or something very similar which has at least all the same gauges, if not more.

This is what the chart for the PEBLE 3 looks like, somewhat intimidating, isn't it? First of all, it lists all the frequencies for San Diego. These frequencies are not always the same, especially on VATSIM. Then we see the take off minimums. For runway 27, which we will be using for take off, minimums are 300 foot actual ground level ceiling, and 1 and a half statute mile visibility. It also says we need to climb at least 317 feet within 1 mile of the airport, and keep that rate until we reach 400 feet.

Obstacle information for runway 27 regarding trees, flagpoles, etc that is included is self explanatory. The take off minimums mentioned previously were designed to make sure the airplane would clear any dangerous obstacles after take off.

#ATC minimum climb of 431' per NM to 14000' required to meet MELDY INT crossing restriction. If we match this up with the other pound sign (#) on the chart, we see this only applies to aircraft climbing to or above 14,000 feet. Most aircraft that fly above 14,000 feet are usually easily capable of maintaining this climb rate. All the pilot would have to do is plan a climb rate in which the airplane could reach 14,000 or above between San Diego Intl. and the MELDY intersection. Since we are in a Boeing 737 type aircraft or similar we won't have to go into detail.

Other Notices on the chart:

NOTE: RADAR required.

NOTE: Aircraft climbing above 13000' expect radar vectors northwest bound prior to PEBLE.

NOTE: Chart not to scale.

These last three, beginning with Radar required means we need ATC to fly this departure. Aircraft climbing above 13,000 feet expect radar vectors northwest prior to PEBLE intersection means if our cruise altitude is above 13,000 feet (ie FL310) we can expect, but may or may not, get radar vectors to our departure transition before we reach PEBLE intersection. That cuts a little time of our flight, and the less time, the better. The notice about Chart Not to Scale means exactly what it says.

Let's read the "Departure Route Description." TAKE-OFF RUNWAY 27: Climbing right turn via heading 290° until crossing OCN VORTAC R-170, then turn right via heading 305° to intercept and proceed via MZB VORTAC R-293 to PEBLE INT. Aircraft climbing to 14000' or above, Maintain assigned altitude. Cross MELDY INT at or above 14000'. Then via (transition) or (assigned altitude).

So what does that mean? We'll this is our in-depth departure briefing.

Before we even begin taxiing out we will set the NAV1 Radio to Mission Bay MZB on frequency 117.80. This frequency is displayed on the chart, like all frequencies for nav aids on the departure route. Then set the Nav Hold Selector (course selector) to 293°. This is because we will need to track the Mission Bay MZB Radial 293° (R-293) eventually. Having it set now allows us to have a ready cockpit, which will reduce our workload once in the air.

Now set the NAV2 Radio to Oceanside OCN on frequency 115.3. This will display on the right side of the Radio Magnetic Indicator (RMI) gauge. Watching the NAV2 needle on the Radio Magnetic Indicator (RMI) gauge will allow us to see when we pass the Oceanside OCN Radial 170° (R-170).

This will be important part of knowing when we reach certain fixes (waypoints) on our departure. Make sure the switch on the bottom right side of the Radio Magnetic Indicator (RMI) is set in the VOR and down position. You know it is set properly when the letters VOR are displayed at bottom right side of the RMI. If the RMI shows the letters on the bottom right ADF, you need to click the switch to set it properly. Your Radios and Nav Hold Selector are set for take off.

As mentioned before, we will be using runway 27 for take off. So looking at the graphics on the chart and the "Departure Route Description" we know that as soon as practicable we will be making a climbing RIGHT turn to a heading of 290°. Practicable means at a safe altitude, with the gear up – usually passing through 400 feet AGL (above ground level) is the point at which we'd turn to the assigned heading.

It's easiest to explain the rest of the Departure Route on the fly. We'll continue after take off, however it is best to read through this section once to have an idea of what is coming next. Things happen quickly when you are moving along at 200-300kts.

We've taken off, and successfully airborne climbing on a heading of 290°. ATC will normally give us a clearance to a higher altitude soon after he says we are in radar contact. We cannot exceed the initial altitude until we are cleared higher. Even though we may not be cleared higher soon, we must continue flying the departure procedure.

Our first heading change occurs when the RMI NAV2 needle shows we are at the Oceanside OCN 170° radial (R-170.) As we reach this point, we will promptly turn right to a heading of 305° as published on the chart.

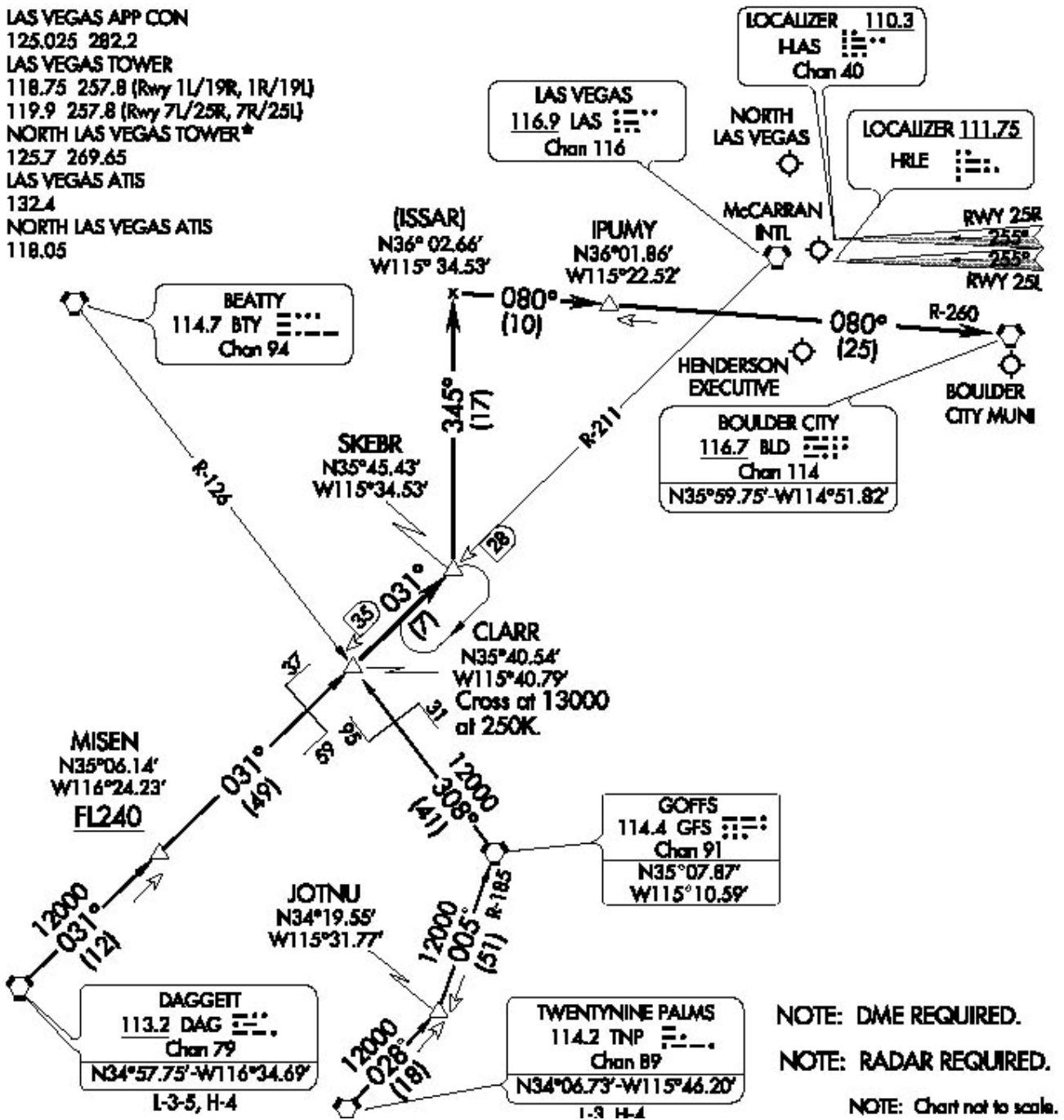
On our Horizontal Situation Indicator (HSI) you will notice the magenta navigation needle is centering on the Mission Bay MZB 293° radial (R-293) As the magenta navigation needle centers, turn left heading 293° and track the Mission Bay MZB Radial 293° (R-293.) We will track the Mission Bay MZB Radial 293° (R-293) all the way to the PEBLE intersection unless instructed otherwise by ATC.

Regarding the MELDY intersection. We will know when we reach it once the Radio Magnetic Indicator (RMI) NAV2 needle is on the Oceanside OCN Radial 222° (R-222) and the DME (distance measuring equipment) indicator on the top right side of the RMI displayed 30 nautical miles. This fix is on the chart for the sole purpose of being an altitude restriction reference point. As it says on the chart, and we discussed previously, if you are climbing to 14,000 feet or above for your cruise altitude, you must cross MELDY intersection at or above 14,000 feet. If you will be flying below 14,000 feet this altitude and minimum climb performance requirement do not apply.

In order to know when we reach PEBLE, we shall observe the following on the RMI. The Radio Magnetic Indicator NAV2 needle shall be on the Oceanside OCN Radial 246° (R-246) and the DME indicator on the top right of the RMI shall indicate 39 nautical miles. Upon reaching PEBLE we proceed to our transition waypoint, which is Santa Catalina (SXC). We will tune the NAV1 radio to frequency 111.40 (the frequency for Santa Catalina SXC.) After tuning the frequency, on the top left corner of HSI the letters SXC should come up to ID the Santa Catalina SXC VORTAC just below the NAV1 Frequency. We shall then adjust the Nav Hold Selector to center the magenta needle on the HSI inbound to SXC.

Upon reaching Santa Catalina SXC you have completed flying the PEBLE 3 Departure, and ATC should have give you instructions to "resume own navigation after Santa Catalina" slightly prior to crossing over Santa Catalina SXC. We'll then fly direct to LAX VOR, then to DAG VOR, and join the CLARR2 arrival from DAG. Let's look at the CLARR2.

LAS VEGAS APP CON  
 125.025 282.2  
 LAS VEGAS TOWER  
 118.75 257.8 (Rwy 1L/19R, 1R/19L)  
 119.9 257.8 (Rwy 7L/25R, 7R/25L)  
 NORTH LAS VEGAS TOWER\*  
 125.7 269.65  
 LAS VEGAS ATIS  
 132.4  
 NORTH LAS VEGAS ATIS  
 118.05



After DAG, you can fly heading 031 all the way until you're 28 out from McCarran. Usually at this point, Approach will vector you the rest of the way until final. That's it. Of course if you have FSNV, it will be much easier, but that is no fun!

## The Second Dilemma: Callsigns

The second thing that stands out to me is what callsign the pilot uses when flying on VATSIM. There are two different types of callsigns that you use.

First is your TEXT callsign: this is the callsign that you file when you sign on. It is also the one by which you will most likely be called whenever you're communicating with a control by TEXT only. Typically these ICAO codes, as they are called, are only three letters long, and are different for every Airline or Organization. Alaska Airlines uses ASA for its ICAO code, followed immediately by the flight number: for example, "ASA8372". There are no spaces, underscores or any other symbol that

you could imagine between the numbers and letters. **NEVER** use the entire airline name as the text name, like **ALASKA282**. All the females wherever you go will laugh at you, and so will I, but now, you know better.

The other is your VOICE (Radio) callsign, this is the actual name or Airline callsign that you will say out loud. Fairly simple, you'll want to refer to the chart listed below. Of course, if you're not an airline, and you want to fly, that's all fine and dandy too, your voice callsign will be the MAKE of your aircraft and the last three digits in your registration number. If I was flying as a Beech Bonanza, I'd be "Beech 28F", or as a Boeing 737 (Non-Airline Affiliated) "Boeing 27A". Please do not call yourself by your text callsign if you're an airline, because I hate hearing "DAL272", instead of "Delta 272".

Both of these callsigns will be used when you talk to an Air traffic controller. Below is a list of some VOICE and TEXT callsigns used by airlines on and around VATSIM (as well as real life, believe it or not).

## Did you know?

**Three letter Airline Designator** - The International Civil Aviation Organization (ICAO) switched to three letter designators on 25th October 1987 due to the depletion of the ICAO two letter designator system. The ICAO designators are used primarily for air traffic control communications and the aeronautical fixed telecommunications network (AFTN). Three letter designators are being assigned in cooperation with ICAO, the United States Federal Aviation Administration (FAA) and Transport Canada. when IATA converts to three letter designators, the same designators assigned by ICAO will be assigned by IATA.

ASA	Alaska
DAL	Delta
UAL	United
AAL	American
SWA	Southwest
AMT	Amtran
GMA	Green Mountain
PWA	Pacific West
NWA	Northwest
	To name a few...

Letter	Word
A	Alfa
B	Bravo
C	Charlie
D	Delta
E	Echo
F	Foxtrot
G	Golf
H	Hotel
I	India
J	Juliet
K	Kilo
L	Lima
M	Mike
N	November
O	Oscar
P	Papa
Q	Quebec
R	Romeo
S	Sierra
T	Tango
U	Uniform
V	Victor
W	Whiskey
X	X-ray
Y	Yankee
Z	Zulu

The complete list can be found at:

<http://www.airlinecodes.co.uk/> or <http://www.faa.gov/ATpubs/CNT/3-3.htm>

It is not uncommon to see people from all around the world at US airports. Some of these callsigns are things like “VH-CAR” or if you’re flying from the United States “N2872F”. These typically designate you’re general aviation or you’re not affiliated with an airline. Please pick something that you like, and is easy to say. Your TEXT callsign will be just your registration number, while your Voice callsign, as mentioned above, could be either your registration number as read with a phonetic alphabet, or your make and last three digits of your callsign.

Choose wisely.

## Radio Etiquette

Everyone needs to talk on the radio at one time or another. If you're on text, then you have a text channel to deal with. But if you're on text, there are a few things you should know. It takes a lot longer to type something than it does to say it verbally. So please, give the controller a minute to respond and don't expect things right away. If it's important or if you think the controller forgot about you, try it again.

When you first tune a voice frequency, do not transmit right away. Doing so might interrupt a conversation of important instructions between ATC and another pilot, so always wait to ensure no one is talking before you begin to transmit. While using voice, you should keep your transmissions short and sweet. Say what you need to say, then get off and wait for a reply. It might not come instantly. A controller may be dealing with another issue. All controllers will always put a higher priority on airborne planes versus planes on the ground, simply because the airborne planes are moving and when they need info, they need it right then. Grounded planes aren't moving anywhere.

There are a few exceptions where you do not need to give a readback. If a controller says "No readback necessary" or "No response needed", then don't do it. I often say "Upon receipt of your IFR clearance, read back only your squawk code unless you have a question." It'll make your life and his so much easier if you follow these instructions.

Also, as far as time and consistency, it is good to read back whatever he tells you right after he said it, I usually give the pilot 5 seconds to respond; if he doesn't, I'm going onto another pilot.

**Don't respond** after a controller is trying to contact another pilot, because the pilot will be trying to give a readback.

If you hear a call for two aircraft at once, the first aircraft should reply last. For example: "United 223, winds 250 at 10, runway 25R, cleared for takeoff BREAK American 228, contact Social Departure on 124.5 we'll see ya." Now, the last aircraft responds first. "Departure for American 228, so long." Then the first pilot can respond. "Copy winds, cleared for takeoff, United 223." This type of message makes it so that the pilot doesn't get stepped on, and is most useful when there is something that needs to be done immediately for the second plane, while the first is not so imminent.

Follow the controller's directions and wait your turn, and you too will master the ways of the radio.

## **Time to Board.**

If you've never set up Squawkbox, you might want to do that now. It has a few things to setup, and it's rather straight forward. For the purpose of consistency and ease, close both FS9 and SB3 before you follow the upcoming steps.

**If you have any general SB3 questions, please refer to the manual.**

Open up Flight Simulator 9 – I don't care WHERE you go, as long as you are set on a parking area or a GATE. If your airport does not have one, you might want to go there now before you load Squawkbox. For our flight today, we're going to use San Diego Lindbergh field, and you can select any parking area you want, as long as it is not the runway.

Load up your favorite plane, and click fly now. Position yourself so that you're happy (**NOT ON A RUNWAY**), and then click on Squawkbox, and connect to the VATSIM servers.

You should see a screen like this.

**Connect** ✕

Connection

Server:

Network: VATSIM  
Name: USA-SE  
Details: South East USA - sponsored by ISLC.net  
Address: 216.49.160.26

User ID:

Password:   Remember Password

Pilot Information

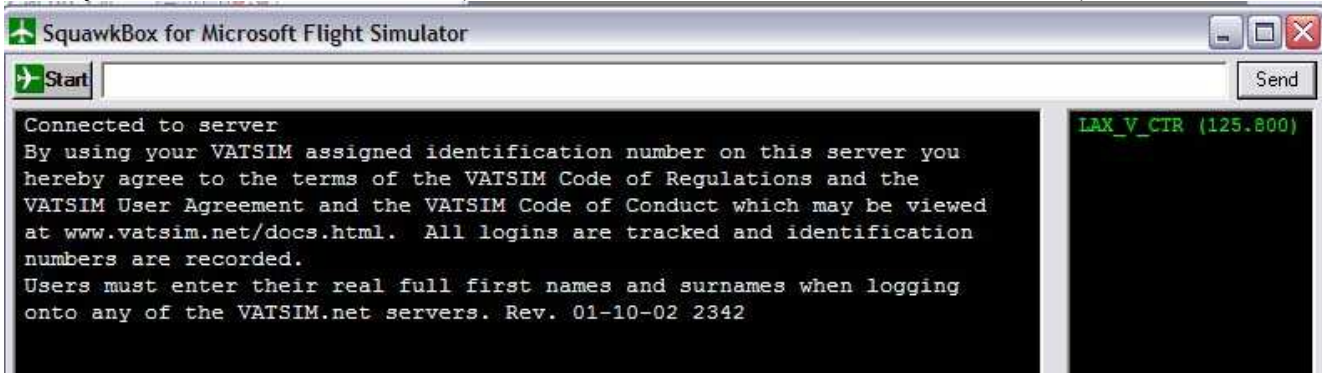
Callsign:  Home Airport:

Name:

Aircraft:

Type: BOEING 737-700 (B737)  
Airline: Alaska Airlines  
Livery: Alasaka Airlines New Colors

Next, you'll notice a controller list (or lack there of if there are no controllers online).



Notice how it has 125.800 next to the controller's Callsign? You'll want to contact him on that frequency. The new SB3 uses the information you input with your Radio Stack, so now open your radio stack and tune him in.

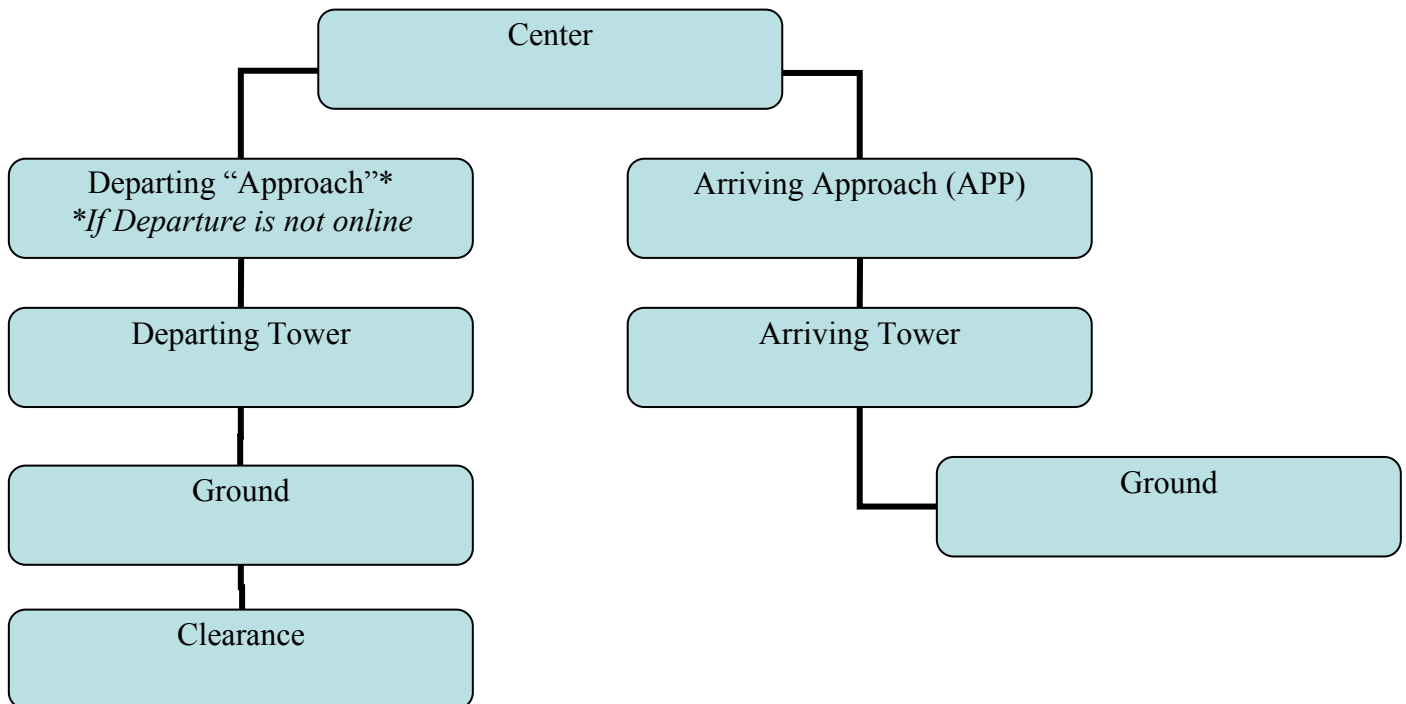
The thing with VATSIM is controllers are not always online. Sometimes all positions are online, and sometimes none. Typically, if no positions are online, tune over to UNICOM on 122.80 and advise them of your intentions. There are no controllers on 122.80, only other pilots.

So, what you do is contact the first control if they're available; if not, you contact the next up. The flow is typically:

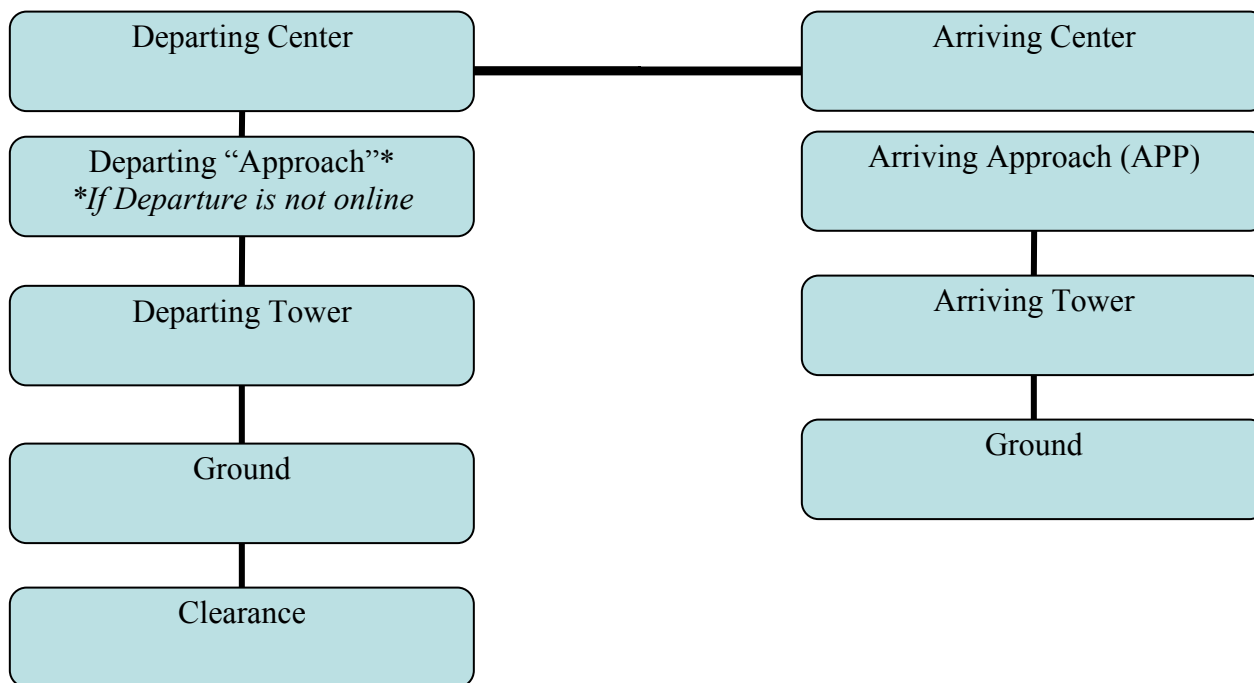
Clearance > Ground > Tower > Departure > Center > Approach > Tower > Ground

Tower typically controls Ground and Clearance as well, if those individual positions are not on. Let's look at it like a flow chart.

Assuming this is all the same ARTCC that we're in (Same Center):



If you are going through different centers:



You climb up the ladder if the person at the bottom isn't on, and the next will take over. This is generally the rule you will need to use.

## Sitting on the TARMAC

So we loaded up at San Diego for our flight today, and we're headed to Las Vegas! So what do we do? First we go into our flight planner which I talked about earlier and find a flightplan for our route (KSAN-KLAS). Because we're a J type aircraft (JET!) we choose [PEBLE3 SXC LAX J9 DAG CLARR2](#) Which will get us where we need to go.

So we file our flight plan.

Flight Type: IFR      Callsign:      Aircraft Type: /Q

Departure Airport: KSAN (ICAO code)       Heavy

Arrival Airport: KLAS (ICAO code)      Aircraft Capabilities: Advanced RNAV with RNP and RVSM

Alternate Airport:      (ICAO code)      Route: PEBLE3 SXC LAX J9 DAG CLARR2

Departure Time: 2100Z (UTC, 24 hour)

Enroute Flight Time: 2 hours      minutes

Fuel Available: 5 hours      minutes

Cruising Airspeed: 305 (Knots true airspeed)

Cruising Altitude: 31000 (Feet ASL or Flight Level)

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

Comments: ALASKA/PMDG737/ZLA\_TF/V/

For Simulated Use Only

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

A few things you should know:

We're IFR, of course, this is a given. VFR is \*normally\* only used for short flights, and never usually jetliners. Although it does happen sometimes, it's VERY RARE. Marc Sykes wrote a fantastic article about VFR and IFR here: [http://www.laartcc.org/article\\_page/11](http://www.laartcc.org/article_page/11). Our departure airport is KSAN, which was the departure we entered in the flight planner. Arrival is the same as the flight planner. I really don't care for alternate airports, but you can file one if you like; usually it is an airport near your destination that could accommodate your aircraft if for some reason you couldn't land at your destination. I don't care about Departure, Enroute, Fuel or Airspeed, this is more of just a real life deal for search and rescue. I just put random things in it, to be honest.

Cruising Altitude: recently the United States went to RVSM. This means that basically all EVEN altitudes above and including FL180 are Westbound, and all ODD are Eastbound. With the exception of things above FL410 (41,000) feet, which is the last Eastbound altitude until it flips to FL430 West, FL450 East, and on and on until you can't fly that high. Quick note about FL410 versus 41,000. Flight Level, as it is called is basically an abbreviation for any altitude over 18,000 feet. Therefore, instead of 19,000 you can say FL190.

Since I'll be flying my PMDG a bit, it is equipped with Advanced RNAV with RNP and RVSM. The route is the EXACT route that I got from the flight planner, do not include "PEBLE3 Departure" or anything else, controllers understand this quite well.

Comments are just for fun, and you may want to include what your Radio Name is, any affiliations you have, and the plane your using.

You'll be able to send your flightplan after you've filled out all the information.

This is when you call up San Diego Clearance Delivery.

## **Clearance gets you from one place to another.**

The clearance delivery controller's sole job is to get my entire route approved so that I won't have any problems along the way. Some controllers are faster than others. I try to keep the flight planner open while I control so that I can get clearances faster, but don't be upset if you have to wait a little for him to find something for you, especially if your route is wrong.

What you want to do when you call clearance is just say your callsign, and advise him where you're headed, you might want to mention that you're "ready to copy," which means you're ready to write down all the information he tells you. Also, if you don't have any questions, you can normally just read back the squawk code, and that will speed things up, but this is more advanced and you might not want to at first.

**RED** will represent me, and **BLUE** will represent the controller.

**Lindbergh Delivery, Alaska 100 ready to copy IFR clearance to Las Vegas.**

Now I wait, you should only ask once, as he might try to gather things really fast to spit it back to you. If he doesn't answer within a minute or so, try again. Fortunately this time, he answers rather quickly.

**Alaska 100, Lindbergh Delivery, good evening. Cleared to Las Vegas McCarran airport via Pebble Three departure, Santa Catalina Transition, direct Los Angeles, Jay Niner, Daggett, Clarr Two arrival. Maintain five thousand, expect flight level three one zero five minutes after departure. Departure frequency one two four point five. Squawk one zero zero one.**

Now THAT is a lot of information. But let's look at what he gave us. He said we're "Cleared to Las Vegas...Clarr Two arrival." Which basically describes our entire route to us. "Maintain Five Thousand" means after takeoff, climb up to five thousand feet until advised further by the departure controller. "Expect flight level 310 in 5 minutes" just gives us a time that we're going to be at cruise. "Departure frequency 124.5" means that SOCAL departure (for our flight) or a departure controller who will handle us after takeoff is on the frequency 124.50, it might be a good idea to plug this into COMM2, so that you can easily flip it over when you're airborne. "Squawk 1001" means to set your transponder to 1001, this is the way controllers can identify your plane.

In addition, he gave us the FULL route because we are going to another airport in the same ARTCC. If we were going to another ARTCC such as San Francisco, we would hear "Cleared to San Francisco via the Peble3 Departure, SXC Transition, then as filed."

**Cleared to Las Vegas as filed, maintain five thousand, expect FL310 in 5 minutes, departure 124.5, squawk 1001 for Alaska 100.**

Now we just read it back to him to make sure that we're all correct.

**Alaska 100, readback correct, expect runway two seven for departure. Contact ground on one two three point niner when ready for taxi.**

Okay, now he affirmed that our read back is good to go, we can be ready to receive taxi clearance to runway 27, and whenever we're ready to taxi we can contact ground on 123.9. Some airports over in Europe request that you ask for pushback; we don't do this since its really impossible for us to look out our window and tell if you're pushed back or not. All airports in the United States, to my knowledge, just request that you advise when ready for taxi. If they want you to call for pushback, they'll tell you.

123.9 when ready for Alaska 100, thanks.

Once again, just reading it back to him, he'll correct you if you're wrong.

After we set up all our radios and equipment and push back from the gate, we can call up ground.

Ground, Alaska 100 ready for taxi to runway 27.

**Alaska 100, Lindbergh Ground, good evening. Taxi to runway TWO SEVEN via BRAVO, altimeter two niner niner five.**

As per grounds instructions, we taxi to runway 27, on the bravo taxiway, if you have questions on how to get there, ask, fairly simple.

Set your altimeter to 29.95 if you want, you don't have to, this just gives you the altimeter.

Taxi to runway 27 via BRAVO, altimeter 29.95 for Alaska 100.

Read back, like always.

**Alaska 100, monitor tower 118.3 have a good flight.**

Flip your radio to 118.30, and get ready to ROCK! (I've always wanted to say that.)

Going to 118.3, Alaska 100, see ya.

Beginning to get the pattern?

Most of the time, you don't have to call the tower, but if they don't call you, you should call them. In this case, he contacted me.

**Alaska 100, Lindbergh Tower, good evening. Winds 270 at 8, runway 27, cleared for takeoff.**

Copy winds, cleared for takeoff runway 27, Alaska 100.

Reading back what he gave us... throttles to the stops boys.

Upon being airborne, he'll call us and tell us to contact departure (sometimes it takes longer than that).

**Alaska 100, contact Social Departure 124.5, so long.**

Departure for Alaska 100, good night.

Remember this frequency from earlier? I do, check the clearance if you have any doubt.

Social Departure, Alaska 100 climbing through 1,400 for 5,000.

It's necessary to say your altitude, but the cleared altitude is optional. Departure will LOVE you if you do this. He'll give you new instructions now.

You always need to say the altitude you're at so that the Controller has an idea of where you're going to pop up on his screen.

**Alaska 100, Social Departure, good evening, radar contact. Climb and maintain 13,000.**

Climbing to thirteen thousand, Alaska 100.

He acknowledges you, which is good, and then tells you to continue your climb to 13,000. Sounds good to me.

Sometimes on the way there, he'll point out aircraft that we might come a bit close to, this is rather helpful if you like to keep your eyes down on the panel, like me, instead of up in the windows.

**Alaska 100, traffic 11 o'clock 6 miles, southbound, a Cessna Skyhawk, level 5,000, report in sight.**

Alaska 100 has the traffic in sight.

**Alaska 100, maintain visual separation from that traffic.**

Visual separation for Alaska 100.

We're just saying we'll keep clear of it, and we acknowledge that we see it. Traffic advisories are the way the controller says "I see both of you and I'll keep you from hitting each other." However, they're really only necessary when two planes are within 1,000 feet vertically and 3 miles laterally. Most ARTCCs on VATSIM will give out Traffic Advisories, just like real life, so you too know that there is a plane there. However, some may give them out more often, so you as a pilot do not freak out.

**Alaska 100, traffic no longer a factor, contact Los Angeles Center on 125.8, see you later.**

Over to center for Alaska 100, so long.

We're clear of the traffic and over to center.

Los Angeles Center, Alaska 100 climbing through 8,000 for 13,000.

Once again, tell the controller who you are, where you're at, and what you're doing.

**Alaska 100, Los Angeles Center, good evening, climb and maintain FL310.**

Climbing FL310, Alaska 100.

Continuing our climb up to FL310, our cruising altitude for this flight. Passing FL180 we should see the standard altimeter of 29.92.

Soon the controller will give us information for our approach, sort of what clearance did for our departure.

**Alaska 100, cross CLARR intersection at and maintain 13,000, McCarran altimeter 29.78.**

CLARR at and maintain 13,000, altimeter 29.78 for Alaska 100.

That's easy enough, and we also get the local altimeter, which we should dial in when we descend below FL180.

**Alaska 100, contact Las Vegas Approach on 127.15, good night.**

Vegas on 127.15 for Alaska 100, thanks for the help.

It's important that you meet that crossing restriction, or someone might be upset with you later on. Time to head to Approach.

Las Vegas Approach, Alaska 100 descending through 16,000 for 13,000 at CLARR.

**Alaska 100, Las Vegas Approach, good evening. McCarran reporting winds 250 at 12, altimeter 29.78, depart CLARR heading 050, descend and maintain 8,000, vectors ILS runway 25L approach.**

Approach is trying to set us up on the approach now, just follow his instructions and all will be good. You also might want to make a note that crossing CLARR, you will want to depart on that heading. By the book, the approach controller must, on initial contact or as soon as possible thereafter, inform the pilot of the surface wind, ceiling/visibility if below VFR/circling minima, altimeter, and approach to expect.

**It's important that you depart CLARR on heading 050; DO NOT turn 050 now. Wait until you cross CLARR. If you have any questions, ask approach now, don't wait for later.**

Copy the weather, depart CLARR heading 050, down to 8,000, expecting ILS 25L, Alaska 100.

**Alaska 100, descend and maintain 6,500.**

Descending 6,500, Alaska 100.

**Alaska 100, descend and maintain 4,800.**

Descending 4,800 for Alaska 100.

**Alaska 100, turn left heading 330.**

Did he say left or right? Make sure you note LEFT if he gives you LEFT and RIGHT if he gives you RIGHT. This is a big mistake that many pilots make. Have questions? Ask.

Left 330 for Alaska 100.

The above are all instructions for him to line us up on the approach. Mess up here and you'll have to deal with finding your way back to the airport with a very pissed off approach controller. But no pressure as long as you listen.

**Alaska 100, 5 miles from SHAND, turn left heading 280, maintain 4,800 until established on the localizer, cleared ILS runway 25L approach.**

Heading 280, 4,800 until established, cleared the ILS 25L, Alaska 100.

This is the equivalent to "go ahead for the ILS approach on runway 25L" it also includes a bunch of info which you'll want to know. Of course, you're the pilot so you should know what an ILS localizer

is. If you don't know, ask. More specifically, it authorizes the pilot to intercept the localizer, maintain 4,800 until established on the glideslope, and then descend on the glideslope. It is VERY important that you descend on the glideslope. The approach controller most likely did a very good job to put you on the ILS below the glideslope, so the dot will come down in a few more miles, then you can start descending on it. If you start descending before the glideslope dot comes down, you may end up with some terrain problems. You should also know that if you descend before the glideslope comes down, you're not following your clearance as approach told you to.

You'll want to always navigate and aviate first (Fly the plane!) before you call back Approach. Because if you call back approach slowly, or on text and it takes you a while to turn, that Heading of 280 is now out the window and he has to give you a new heading. I'd suggest typing "RGR" or Roger for clearances that are exceptionally long. This would help keep the pilot flying the airplane instead of taking the long while to type it all out. It is still strongly recommended though, if you're on voice, to read it back, as often people mishear things.

He'll see you turning, then you can respond. Now we're on the ILS, and we're basically set to land.

**Alaska 100, contact Las Vegas Tower on 119.9, good night.**

Tower on 119.9, see ya, Alaska 100.

Tower, Alaska 100 on final, runway 25L.

It's nice to emphasize the runway for tower, since he might have multiple runways open for approaches, he might not know where to look or where to clear you. Give the runway, or the flight attendants will take away your coffee.

**Alaska 100, Las Vegas Tower, good evening, winds 250 at 12, runway 25L, cleared to land.**

Copy the winds, cleared to land on 25L, Alaska 100.

Now that you're cleared to land, you know the drill, do the landing as you normally would. The only possibility that anything could screw up now is that if there's an aircraft landing on the same runway, and he doesn't clear the runway in time (he has to be clear of it before you land), the tower controller might instruct you to go around. This is rare, but it does happen from time to time. If you hear "Alaska 100, go around," start a climb right away and stay on the runway heading until you hear a different instruction. The tower controller might say something like "Alaska 100, turn left heading 180, climb and maintain 7,000, contact departure on 127.15"; start your turn, read it back, and switch over. The departure controller will give you vectors to get back on the approach. If for some reason you need to abort the landing, just tell the tower controller "Alaska 100 going around," and he'll give you instructions just like the above. Let's assume that in this case that doesn't happen and you land successfully, though.

**Alaska 100, welcome to Las Vegas, exit the runway to your right when able, hold short runway 25R for departing traffic.**

Exit to the right, hold short of the right side, Alaska 100.

Always listen to taxi instructions, particularly if there's a hold short involved. You don't want to run into that plane that's on the roll. Also, YOU MUST ALWAYS READ BACK HOLD SHORT

**INSTRUCTIONS. Even at the busiest airports in the United States, where they do not want you to say much on the radio, they REQUIRE that you read back the hold short instructions!**

**Alaska 100, cross runway 25R, contact ground 121.10.**

**Cross the right side and over to ground on 121.1 for Alaska 100.**

Now you contact ground, telling him where you are.

**Las Vegas Ground, Alaska 100 on Alpha 6 short of Bravo looking for the Alpha gates.**

**Alaska 100, Las Vegas Ground, good evening. Taxi to the Alpha gates via GOLF.**

**To the gate via GOLF for Alaska 100.**

That's it. You are all done. You taxi to the gate and shut down. You don't have to say "With you at the gate" or anything like that, unless you want to. It just causes more radio clutter.

**If you would like to hear what it really sounds like, fly to <http://www.laartcc.org/tf/tutorial.mp3> for an MP3 recording. Thanks to all of the GREAT controllers that helped me out!**

Now you're flying IFR like a PRO. Thanks for reading my tutorial, if you'd like to thank me or anything, you can usually find me online at ZLA, or on the Callsign ASA100. If I'm not on there, well, look on Servinfo and find me.

**Remember three things: Aviate, Navigate, and THEN Communicate.**

***Thanks for flying,***

***Tom Flanary***

***ZLA\_TF\_OBS / ASA100***

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**Send your comments, thanks, or requests to the above addresses.**

***Thanks to all the people who helped me write this article.***