

DELTA FLY!

MARCH 2008 EDITION

DELTA VIRTUAL AIRLINES MAGAZINE



In this issue...



Area Navigation (RNAV)



Adding Waypoints in FS



Freeware FMC



Flying on VATSIM



March 2008

Issue #9

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T7 on approach – Charly Azcue

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Fellow Pilots,

"Queen of the Fleet," the Triple Seven on the cover of our anniversary edition of *Delta Fly!* was selected to commemorate Delta Virtual Airlines' Seventh Anniversary of providing aviation virtual services to our pilots. While seven years in non-virtual time is not so long; in virtual airlines longevity terms, we are definitely mature. Our age and continued development and growth are testimony to our overall success. Our founders discovered a business plan that met and continues to meet the needs of our community. For me, it is a wonderful privilege to be a member and have the opportunity to serve on the management team.

At the start of year 7 we set goals for our organization.

- In year 7 we will focus on continued serving with excellence.
- Hire additional staff assistants to support in a timely manner our pilots and to avoid burnout of staff members who devote 100's of hours a month to DVA.
- Revise exam questions and aircraft operating manuals to assure accuracy and eliminate vague questions.
- Inaugurate the Flight Academy's Commercial Course.
- Upgrade the fleet to be FSX compatible.

In the twelve months that followed, staff has made considerable headway in achieving and in many cases surpassing the goals.

- Totally volunteer funded to cover operating expenses.
- Active membership capped at 2,500 to ensure our ability to deliver excellent service.
- The number of days between logons to retain active membership reduced from 90 to 45 days.

- Help Desk inaugurated to answer pilot questions and concerns.
- USA terminal charts updated every 3 months.
- ACARS submitted flight reports for the 10 flight legs for promotion instituted for Stages 3 and 4 programs.
- Assistant Chief Pilots added to CRJ, B737, MD-88, B757, B767, B777 and B727 programs.
- Exam questions for the EMB-120, CRJ, B737, MD-88, B757, B767 and B727 programs were reviewed and rewritten. The exams are multiple choice, auto-graded with prompt results supplied to the pilot. Eventually all exams will be revised accordingly.
- The Flight Encyclopedia was revised.
- AOM revisions are in progress. The EMB-120ER AOM was released.
- The Flight Academy Commercial Course officially started in early June.
- The Flight Academy was temporarily closed to permit curriculum revisions and relocation to Salt Lake City. The revised curriculum will place a greater emphasis on preparing pilots for online flight.
- Fleet is FSX compatible.

There were staff changes in the past 6 months that are too involved and numerous to enumerate. All changes are posted on the website. I realize that some interpreted the departure of several long-term staff and management members as chaos and possibly discontent in the leadership. I can assure that this is not the case. Volunteers often experience real world demands that prevent them from carrying out their roles. Also, after serving in one position for extended periods of time there is often burnout when the role is no longer enjoyable. This is a management challenge to detect burnout in advance and find a different situation for the individual. We want our staff members to enjoy their roles just like we hope our pilots enjoy "working" for DVA.

I am grateful for the multitude of contributions our staff, management and pilots contribute

unselfishly for the betterment of DVA. This characteristic is common among aviators including virtual aviators. Lacking contributors, we would not be able to function at the level we are experiencing.

I would like to take a moment to share a brief word about our flight schedule database to help you understand why flights vanish from one day to the next and then a tip for holding flight legs. This is a reoccurring matter that causes confusion for some of our pilots. Our schedule is built using a monthly data feed from Innovata, a commercial aggregator of flight schedule data. The DVA schedule is updated once every day at 02:00 ET. Flight schedules are dynamic with additions and deletions daily. Some flights do not operate every day of the week. As market demands change, flights are introduced and deleted. Thus, if you see a flight that you would like to fly but need to delay flying a few days, the flight might not be there when you are ready to fly.

A way to hold flight legs for later use is to build a flight assignment. Go to "Find A Flight." Enter the airline, departure and arrival airports and select search flight database. A list of flight legs is presented. Place a check in the preferred leg and click on build flight assignment. Additional legs can be added to the flight assignment. When you have the legs selected, click on save flight assignment. The legs will appear in your logbook and remain for 10 days. When you are ready to fly a reserved flight assignment, start ACARS, connect to the server and type in ".draft" A list will appear, select the leg and the fields will be populated. Upon flight completion, file the flight report using ACARS. For manual flight reporting, go to your logbook, open the flight assignment and edit the report completing the open fields. Finally submit the flight report.

Should you have a specific question or a problem with flight reporting, check rides, fleet installer, create a Help Desk issue. This gives us the ability to assign the matter to the individual best equipped to resolve it. We can also track the progress of resolving the matter. Staff and administrative issues placed in the Water Cooler can get lost and they are public.

The publication of *Delta Fly!* is a time consuming and often times frustrating task for the writers, editors and publishers. Every effort is made to publish quarterly, but time constraints do not always permit. George Lewis, Charly Ascue and Larry Foltran are the guiding tillers to its continued publication. We are deeply indebted to these gentlemen for their efforts. Their talented and energetic inputs produce a professional quality publication. We will always have a need for content and assistance in publishing *Delta Fly!* Let George or myself know if you would like to take a role.

Your organization is busy, vibrant and maintains a high level of participation in the Cooler, events and instruction.

Wishing you all a safe end of winter/summer for our southern hemisphere pilots.

Thank you for flying Delta Virtual Airlines,



From Delta FLY's Editor



George Lewis - Vice President, Operations

Welcome to the 7th anniversary edition of the Delta FLY

This issue mainly focuses on Area Navigation (RNAV) and how it relates to flying at Delta Virtual Airlines. We've prepared several articles for you this month:

Understanding RNAV – written by Cedric Daniel, DVA Flight Academy Instructor, this article talks about what RNAV is and how the approaches and arrivals are flown along with the requirements needed to fly them.



One of the problems with flying RNAV departures and approaches is that not all of the waypoints exist in FS2004. Steven Jones, DVA L1011 Captain, has written a nice tutorial/article that will help you add the waypoints you need to FS2004 in order to fly these.

Andrew Kaufmann, DC-6 Chief Pilot, has written an informative article on adding a freeware FMC system to your fleet installer, helping to make it RNAV capable.

We have also included an article on flying Vatsim and understanding the airport winds and runway operations using Salt Lake City as an example. Winds are important and they affect not only which runways you takeoff and land from, but also which departures you can fly.

Our Events Director, Robby Chiste, has probably flown more group flights than anyone and he has seen it all. He has written an article giving tips on flying group flights that you should definitely check out!

We are looking for someone to take over the reins as the Delta FLY Editor. If you think you have what it takes to put together the FLY on a regular basis and would be interested in this position, please send an e-mail to Human Resources at hr@deltava.org

If you are interested in seeing certain topics covered in this newsletter, or would be interested in submitting an article to the FLY, please send me an email at editor@deltava.org

From the Flight Academy

Scott Clarke - V.P. Training



There are many new and exciting changes at the Flight Academy in 2008.

First, we want to thank Rob Morgan (DVA 2784) and Ron Ward (DVA 4147) for their work in the academy. Rob has become Chief Pilot for the EMB-120 program.

We have two new flight instructors at the academy. Sr. Capt Cedric Daniel (DVA 3357), B777-200 program, has joined the staff. A PPL and Commercial course graduate, he is currently serving in the US Navy stationed at Pearl City, Hawaii where he serves as the Quality Assurance Officer for the Advance SEAL Delivery Vehicle System. He is responsible for approving all procedures that affect personnel safety and the safe operation and maintenance of the vehicle. Prior to that, he served on various nuclear fast-attack and ballistic missile submarines.



Cedric has been flying flight simulators since 1989 on the MSFS4 version and every version since then, including X-Plane and PS1 744. He is an active member of AOPA and currently negotiating with his wife to continue real world flight training. When not flying online, he enjoys writing music, playing basketball (he's only 5'8" by the way) and entertaining his wife and 7 children.

Sr Captain Mamadou Kebe (DVA3206), B777-200 program, is located in Bamako, Mali West

Africa and heads up our European flight academy. He speaks 5 languages French, English, Spanish, Bambara and Soninke.

He had a childhood dream to be an airline pilot. He started flight sim with FS98 that his mother gave him as a gift. In 1999, he moved to the US to study Computer Science. In 2004, he became a hardcore simmer with FS9. Joining DVA in 2006, Mamadou is a graduate of our Flight Academy PPL and COMM courses.

With the temporary closing of the Flight Academy in November 2007 for renovations, it now has complete course updates, a new training airplane, a scenery facelift and a new academy location that will be ready for launch in March, 2008:

A new location - The Flight Academy is moving from Orlando FI (KMCO) to Salt Lake City (KSLC). We had outgrown our ramp space at KMCO and have a brand new hangar and "Never Again-Gear Up" Grill, waiting for us to move in. The new Flight Academy hangar is located on the northeast side of the Salt Lake City airport, west of taxiway G at Uniform, between the existing Delta Airlines main hangar and the new UPS cargo terminal.

New scenery - We will have Salt Lake City airport scenery using the new release by Gary Widup to be used by the Flight Academy students. This detailed and accurate layout of the Salt Lake City airport will be referenced with the KSLC ARTCC sector files used by their controllers to provide ATC service.

New airplane - A completely new EMB 120ER has been built to give the Flight Academy an airplane for training with improved speed and performance.

New Manuals - All of the course manuals now have a course outline and study guide to give each student an excellent way to prepare for the course lesson. Using the current FAA manuals and AIM as references, each course has

been updated to mirror “real world” courses for the virtual pilot who wants to learn.

New Courses - An all new IFR course has been developed and will be available to all successful graduates of the Commercial course. Each Flight Academy course includes new material for “on-line” VATSIM flying, RNAV Sids/Stars and ATC communications.

Salt Lake City virtual ARTCC - Salt Lake City virtual ARTCC will be working with the Flight Academy to have regular ATC services at Salt Lake City International and satellite airports such as Ogden, Provo, Twin Falls and Pocatello, to provide “real world” experiences during the students training period.

We think you will like all of the changes the staff of the Flight Academy have made to this program and we look forward to working with our students and Delta Virtual members to provide pilot education and training for the Delta Virtual Airlines pilot.



Ryan Wilson

Area Navigation (RNAV) “You’re now free to move about the airspace”

Cedric Daniel, DVA3357
DVA Flight Instructor , 777 Senior Captain

With the steady increase in airport traffic, the FAA is constantly enhancing flight routes to accommodate a larger volume of aircraft and the utilization of all available airspace. As a result, VATSIM ARTCCs are constantly updating their Standard Operating Procedure to facilitate these changes. When filing a flight plan on VATSIM, the ATCs are expecting you to not only fly the procedure as published but also understand all required restrictions and ensure YOUR aircraft is actually capable of flying the filled procedure.

In several Water Cooler discussions and online flying observations, the concept of a RNAV procedure and the pilot’s ability to accurately execute them are often in err.

In this topic, I will try provide you with a general understanding of the procedures, address some common errors and provide you with the tools needed to accurately fly RNAV, and links for continued training to enhance your RNAV flying experience.

First, let us go over some terms and symbols you may see quite often:

1. RNAV (Area Navigation) a method of navigation which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids(GPS/FMS), or a combination of both.

2. RNP (Required Navigation Performance), which refers to the accuracy, you must adhere to on any SID/STAR whether it is RNAV or not. The RNP requirements are listed on the charts as:

RNAV-1 which requires a navigational accuracy of 1NM full deflection left or right on the GPS or Primary Flight Display on FMS equipped aircraft for 95% of the total flight time, which is the

same accuracy you see when in Approach (APP) mode for ILS landings.

RNAV-2 which require a navigational accuracy of 2 NM full deflection left or right on the GPS or Primary Flight Display on FMS equipped aircraft for 95% of the total flight time.

3. ✦ Indicates a RNAV waypoint. These are the waypoints you do not see displayed on your MSFS Flight planner.

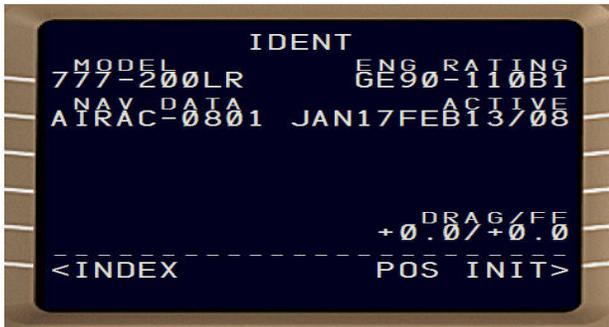


In order to fly any RNAV procedures, whether arrival, departure, or enroute, you must have a capable GPS

or FMS (flight management system) with the current database loaded. The GPS units that come standard in default Microsoft Flight Simulator and Fleet Aircraft will NOT satisfy this requirement. Most payware aircraft come with more advanced GPS and/or FMS units whose NAVDATA can be easily updated using services such as Navigraph/NAVData. There are however, links on various flight simulator add-on sites that update both the default flight planner and GPS. I would caution you that since RNAV procedures are added and/or changed frequently, you would need to ensure that the procedure you are planning is part of the update you have installed.

Here is an example of why current AIRACs are so important. The CANUK Arrival into Atlanta, which has changed three times since January 2007, has new RNAV waypoints listed. The old procedures had a path for East Ops of EMJAA ZAMAS BEYAP FOMAR FENJE and JIMDO and were used primarily for runway 9R. The new procedures now contain waypoints ZAMAS BOJAA FOGOG SOTRE HESPI for runways 9L/9R/10 and also ZAMAS DOEVR NOFIV NOTRE WOTBA for runways 8L/8R. The newer procedure also contains new speed and altitude restrictions that ATC will require you to adhere to when performing the approach.

If you are unsure of whether or not your aircraft navigation data is current; in FMS equipped aircraft, check the current AIRAC data as shown in the image below:



Since Some GPS equipped aircraft will not display the current AIRAC cycle, the only way to verify will be to compare the data displayed on the GPS with what is published on the charts. It is however good practice to ALWAYS verify data displayed in GPS and FMS aircraft.

For our example flight, we will use two Delta Hubs, KATL to KSLC. The filled flight plan will be:

RMBLN5 GAD MEM SGF BUM LD FQF J116 EKR LEEHY1.

When setting up the GPS or FMS, ensure you select the correct runway for departure, as this will determine which portion of the Procedure you will fly. In the [RMBLN5](#) chart you will notice that this procedure is available for all runways and because of that, different waypoints are listed for the various runways. Some other things to note on the Chart is that this procedure is RNAV-1, you must be able to accelerate to 250kts (if unable, ATC must be notified), and only turbojet aircraft are allowed to fly this procedure.

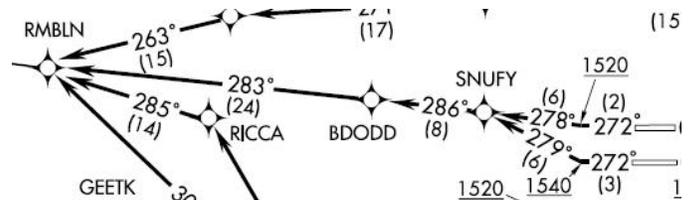
RNAV Departure

We will depart KATL from runway 26L so the portion of the procedure we will verify in the FMC will be SNUFY BDOOD RMBLN HANKO GAD.

NOTE: Manually inputting waypoints in the legs page will not satisfy the RNP requirements of the procedure. This type of input will cause the FMC or GPS to treat the waypoints as Enroute waypoints.



TAKE-OFF RWY 26L: Climb heading 272° to at or above 1540, then on 279° course to SNUFY, then via depicted route to RMBLN, thence...
maintain 10,000 (or requested altitude if lower), expect clearance to filed altitude ten minutes after departure.



On VATSIM, when flying a RNAV departure, the controller may ask you for your first waypoint. In our case, the first waypoint will be SNUFY. Verify this waypoint is programmed into you FMC or GPS as shown in the figure above.

Once cleared for takeoff, unless other instructions are given prior to takeoff by ATC, climb on runway heading of 272 degrees. After reaching 1540 feet MSL or above, turn right to 279 degrees (this may vary, as the weight and type of aircraft will reach 1540 at different points. This is why it mandatory to have GPS or FMC as stated in the NOTES section of the departure chart). The turn to 279 is based on a minimum climb rate of 500 fpm to 1540 feet. Since most turbojet aircraft will reach 1540 (which is only 514 feet above the airfield) rather rapidly, use the GPS or FMS point to start your turn. Notice in the picture below, we are at 1880 feet at the turning point for SNUFY which appears to be right at the IM for runway 9R.



T

To ensure that we are following the procedure, we will engage the autopilot at any point above 400 feet AGL (which by the way is what the FAA recommends for all commercial airliners in RNAV procedures). Things to verify while the autopilot has control: After SNUFY and continuing to accelerate to 250kts turn left to 286 degrees for 8 miles to BDODD, left to 283 degrees to RMBLN, right to 284 degrees to HANKO and then right to 293 degrees to GAD VOR. At this point, we should be at or near cruising altitude and can continue to rest of the route as filed

RNAV Arrival

During the arrival we will use the [LEEHY1](#) Which is a RNAV-1 procedure as depicted in the Arrival chart. Verify the procedure is programmed in the FMC or GPS and verify crossing altitudes and speeds with the charts.

We have just been cleared to “descend at pilot’s discretion on the LEEHY1 Arrival. Unlike the SPANE4 Arrival, which mirrors the LEEHY1, the LEEHY1 arrival places you on a 1-degree ILS intercept for runway 34R. We have just crossed the MYTON (MTU VOR) and started our descent to cross SPANE at 16000 feet at 250kts. It is very important to cross each waypoint at the published speed and altitude. This will not only reduce the ATC workload in providing separation for you but it also allows you to focus more outside the aircraft looking for other traffic, avoiding obstacles and general cockpit preparation for landing. After you have reached the SPANE intersection at 16000 feet and 250kts, continue descent and turn right to 282 degrees to cross LEEHY, right turn to 300 degrees to reach BLUPE at or above 12000 feet and exactly 230kts, right to 308 degrees to cross KAMMP at exactly 11000 feet and 210kts.

Note: On any chart the following applies:
 $\frac{11000}{210K}$ = at or above specified speed or altitude,
 $\frac{11000}{210K}$ = at or below specified speed or altitude,
 $\frac{11000}{210K}$ = at specified speed or altitude.



Axel Guillebastre

From over KAMMP turn right to 341 to PLAGE. Notice the circle around the PLAGE waypoint. This indicates to us that this waypoint is a “Fly Over” vice “Fly By” waypoint. At this point we are now in position to intercept the localizer for 34R. We should not be handed off to the tower at KSLC for landing clearance. (Do not forget to disengage the autopilot).

More detail on RNAV procedures and all other instrument flying will be provided by the Delta Virtual Airlines Flight Academy’s Commercial and Instrument courses.

‘Clear skies and following winds’

For more information on RNAV procedures and NAVDATA updates, see the following links:

[http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/5c94e4f44ba319a98625729c00612f37/\\$FILE/AC%2090-100A.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/5c94e4f44ba319a98625729c00612f37/$FILE/AC%2090-100A.pdf)

http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info/all_infos/media/2007/info07011.pdf

<http://www.aopa.org/whatsnew/newsitems/2005/050901nav.html>

http://vatusa.net/training/basic_atc.html

<http://www.navdata.at/>



How to Add Missing Waypoints in Flight Simulator

Steven Jones, DVA3266
L-1011 Captain

How many times have you attempted to fly a flight plan in FS only to realize that one or more intersections, VOR's, etc. are missing? Frustrating isn't it! Conventional wisdom says that there is nothing that you can do about it. There is no way to update the intersections and VOR's in FS.

Call me stubborn, hard headed, what have you. I believe that if some intersections and VOR's were put in by the developers, there must be some way for me to do the same.

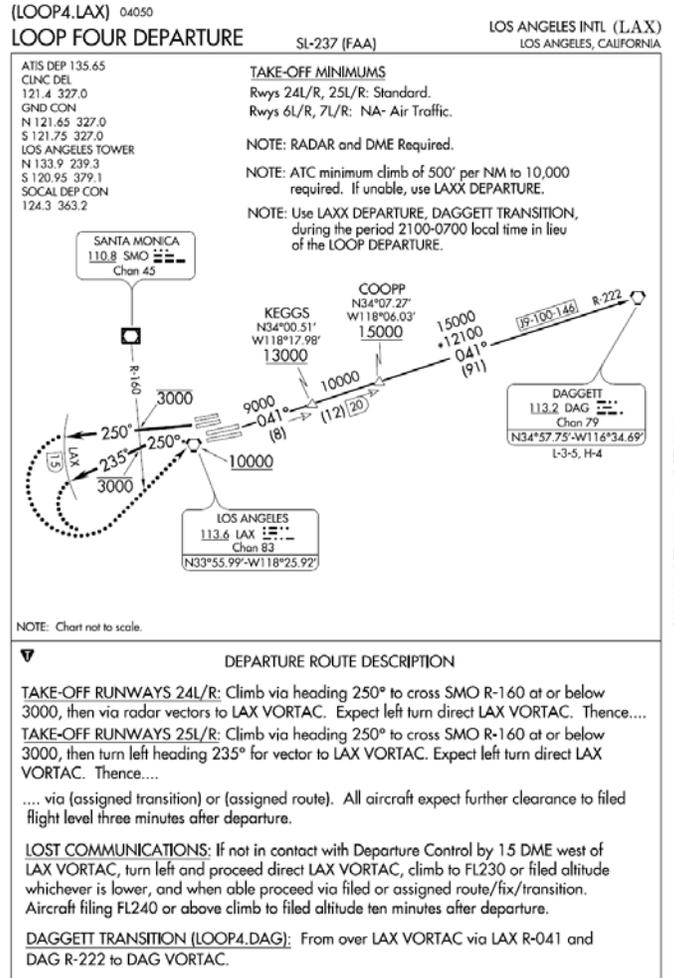
Before we go too far into this, let me explain one thing...I am NOT a programmer! I am just an average FS enthusiast. Maybe somewhat less than average. I do not fly as much as I would like to. I do not own any payware aircraft. I do not even use a freeware FMC. It's not that I have anything against payware. With a wife and 2 teenage children, I do not have a lot of disposable income!

Back to the subject at hand.

I usually start my flight planning by going to <http://flightaware.com/statistics/ifr-route/> to check for flight routes that were recently flown in real life. Armed with that information, my next cyber stop is <http://www.fsroute.com/>. On this site, I input my chosen flight plan and let the site generate a .pln file for me. After downloading the flight plan, I open it in Notepad to edit the plan. My editing usually consists of adding my departure gate, and cruising altitude. To find my departure gate, I view the AFCAD file.

Let's walk through a flight plan. Today we will plan for DVA7664 Leg 1 from KLAX to KLAS in an ERJ-145. Our flight route will be LOOP4.DAG.KEPEC1.

Looking at the LOOP4 SID, which I downloaded from <http://www.airnav.com/>, we see that our waypoints are: LAX, KEGGS, COOPP, and finally our transition point of DAG.

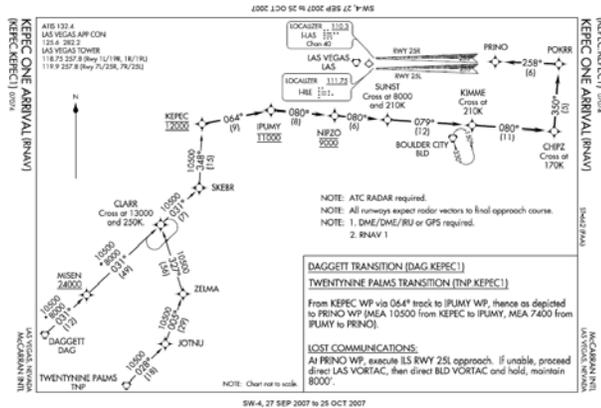


LOOP FOUR DEPARTURE
(LOOP4.LAX) 04050
LOS ANGELES, CALIFORNIA
LOS ANGELES INTL (LAX)



Oliver Mcrae

All of these waypoints should be in FS already.
 Now let's look at the KEPEC1 STAR into KLAS.



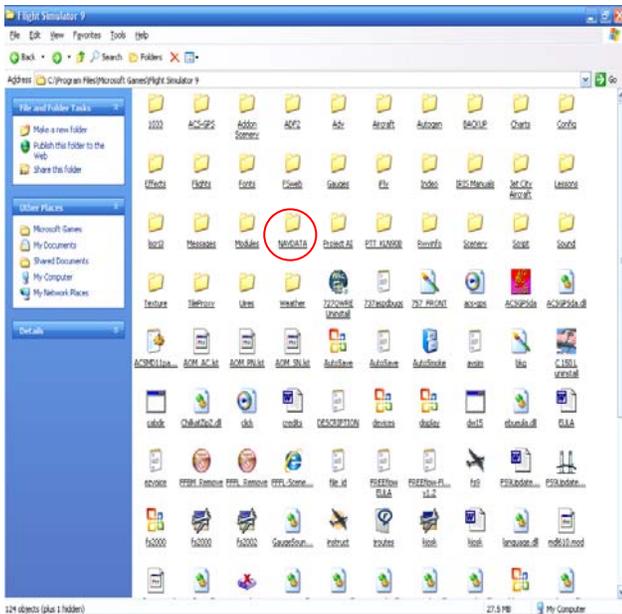
See the folder named NAVDATA? Open that folder, then open the int file in notepad. This is what it should look like:

```

int - Notepad
File Edit Format View Help
// Intersection database for Navigation Data
001AT; ; N36°49'27.51; W121°32'47.44; 00000
002HP; ; N30°54'35.61; W085°33'21.91; 00000
005HP; ; N45°19'02.69; W112°33'53.45; 00000
008AT; ; N36°41'12.61; W121°17'21.88; 00000
009AT; ; N36°52'56.99; W120°41'10.26; 00000
00A30; ; N40°06'26.15; E008°54'52.76; 00000
00LTH; ; N23°21'39.59; W160°20'20.19; 00000
00SOR; ; N39°59'30.00; E012°17'30.00; 00000
020HP; ; N66°58'14.16; W162°32'43.21; 00000
025HP; ; N34°20'13.73; W110°00'04.65; 00000
028AT; ; N18°22'15.37; W066°17'49.73; 00000
028AT; ; N44°18'34.37; W121°33'24.51; 00000
02GTC; ; N37°13'23.15; E137°11'08.62; 00000
030HP; ; N36°39'19.11; W119°51'04.73; 00000
031AT; ; N38°40'03.38; W122°02'13.66; 00000
031HP; ; N37°38'46.30; W084°46'19.91; 00000
033AT; ; N37°21'05.07; W122°07'20.42; 00000
03B0T; ; N65°45'00.00; E012°17'17.99; 00000
03CPN; ; S21°41'01.51; W045°56'36.97; 00000
03MCT; ; N55°08'12.00; W007°11'29.00; 00000
040AT; ; N37°27'13.40; W122°10'05.37; 00000
044AT; ; N35°29'00.58; W117°40'36.40; 00000
04CHI; ; S38°16'23.99; W072°29'54.00; 00000
04SIA; ; N19°55'21.63; W078°58'44.22; 00000
054AT; ; N39°12'18.32; W078°22'56.55; 00000
058AT; ; S08°00'59.34; E159°27'50.72; 00000
05CKH; ; N22°23'00.29; W156°15'37.74; 00000
060AT; ; N36°20'38.84; W115°22'56.85; 00000
  
```

Here is where things get interesting. Two of our intersections, SUNST, and POKRR, do not exist in FS. Of course you will not know this until you load the flight plan in FS and you notice that these waypoints are missing. So how do we fix this?

Navigate to your FS main folder. Your screen should look similar to this:



This is where all of the intersections are stored in FS! There are also files named apt for all of the airports, ndb for all NDB's, and vor for all VOR's. Each of these can be opened in notepad and viewed or altered.

Back in the int file, if you scroll down you will notice that POKRR and SUNST are not listed. So, let's download the information for these intersections from <http://www.airnav.com/>.



First we will look at POKRR:

We take the location information from here, and put it in the int file as shown here:

Now, let's do the same thing for SUNST:

Do not ask me what the final set of 0's are for, I haven't figured that out yet!

Now save the file, and exit. Next, start up FS, load the flight plan, and have fun!

This tutorial was written using FS9. I'm still working on figuring out FSX. Once I do, I will update you on it.

The Free FMC

Andrew Kaufmann, DVA3931
Chief Pilot DC-6

Many folks flying today online are confused by the complexity of Flight Mission Computers (FMCs) – or specific name of your programming flight processor. Perhaps the easiest way to overcome this is to just not use it.

However, there is a simple to use, freeware FMC out there that makes life easy – can be used regardless of the airframe type...you don't have to be an engineer to figure it out or use it and don't need to be a panel adding wizard to run in or install it – and it works.

The FMC comes from VAS (Virtual Airline Suite) – specifics found here:

<http://vas-project.org/vasfmc-flight-management-computer/>

The following is the “How-To” for this product – and to set up your FMC information n- Flight Sim does not have to be running.

First you must download the FMC program itself:

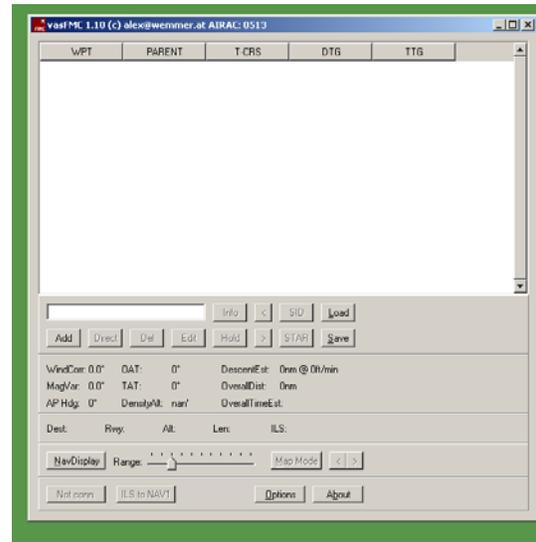
<http://files.vas-project.org/viewcat.php?id=1>

This link shows 5 PINNED files:

vasFMC 1.10 / vasFMC 2.0 ALPHA 5 / vasFMC Flightplan to MSFS Converter / and the patch for X-Plane and FLY! II

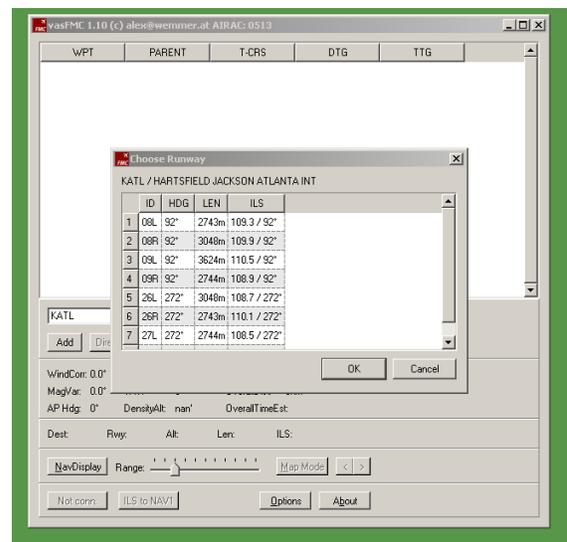
You want to download the vasFMC 1.10. When you click on the file name, you will get general dialogue regarding the changes, etc. Scroll to the bottom and click “DOWNLOAD NOW”.

Once the download is complete, run the setup program. Once that is complete (if you chase the option), you will get a desktop ICON. Double click to start vasFMC. You will get a screen that looks like this (and it is resizable):



The cursor should be blinking in the textbox about midway on the left.

In that box enter KATL and then ADD:



You will now get a box that shows all the ATL runways that you can use for departure. Select 09L by clicking on the number 3 (it will highlight the line. Click OK.

You will now see that your initial waypoint has been entered. We will enter two more to keep this short and sweet.

Now enter NOONE and it will automatically add that WAYPOINT since it is the only one out there named NOONE.

If you accidentally enter a wrong waypoint – simple click on the number in the waypoint list – and click the DEL button.

Next add KRDU – runway 23L and add. In order to use the SIDs and STAR database, you must download the following:
<http://files.vas-project.org/viewcat.php?id=2>

Now, if you have downloaded (or there is) a SID or STAR for the particular airfield you are using, you highlight that waypoint and click on the SID or STAR button.

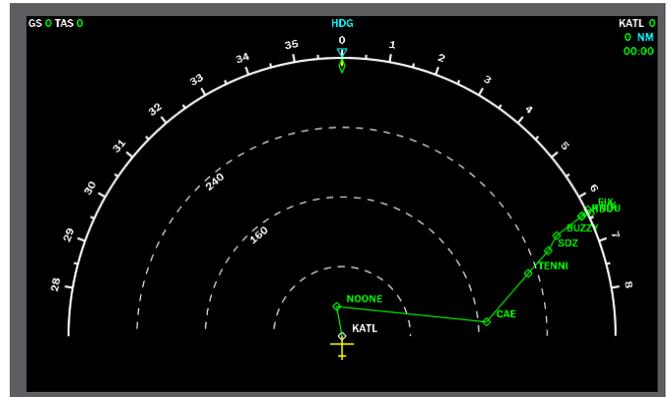
Click on the KRDU waypoint, select STAR and select the first in the list (CAE.BUZZY5), the OK. The FMC will automatically insert all the waypoints associated with that particular STAR (or SID).

You want to save your data to this point – select SAVE and give it whatever name you want – I use ATRDU to my desktop as an .FMC file. Now the fun begins – select the NAV DISPLAY button on the lower left hand portion of the main screen. You will see the following:



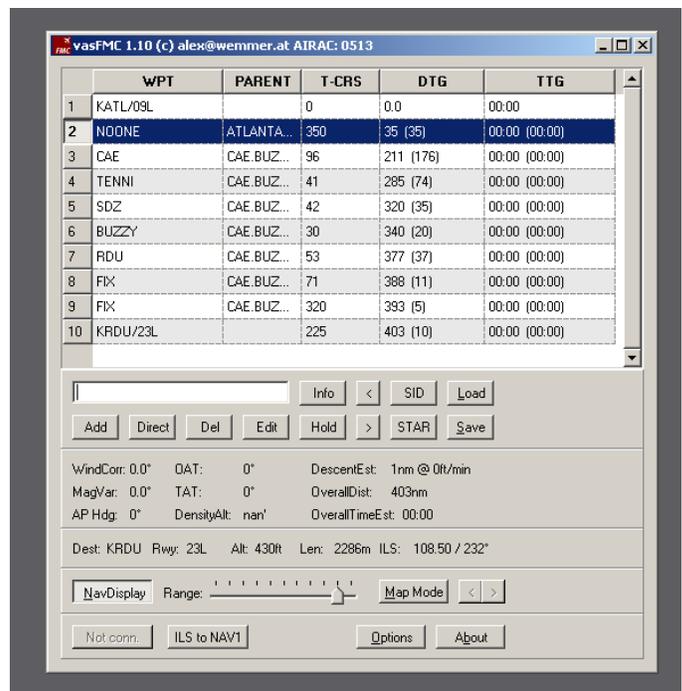
This is my FMC. It shows the standard view, with heading tape (lubber line) at the top, with range rings corresponding to the RANGE select slider on the main window.

This FMC window is moveable, and resizable. By holding the RIGHT mouse button down, and clicking on the window you can resize to fit your needs...maybe to something like this:



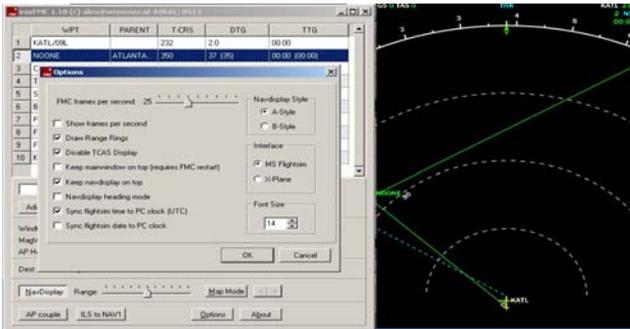
This shows pretty much my entire route - again this has been zoomed out to 80NM rings.

By selecting MAP MODE on the main panel, your FMC will change. Your heading tape will disappear, but you will have the ability to cycle forward and back with your waypoints but selecting the left and right “<” and “>” keys.



Keep in mind that all of this has been done without being connected to FS9 or FSX. When you connect the FMC will slew to your aircraft position...and if you want – the FMC, by selecting the ILS to NAV1 button on the main panel, will automatically adjust your NAV1 radio and headings accordingly.

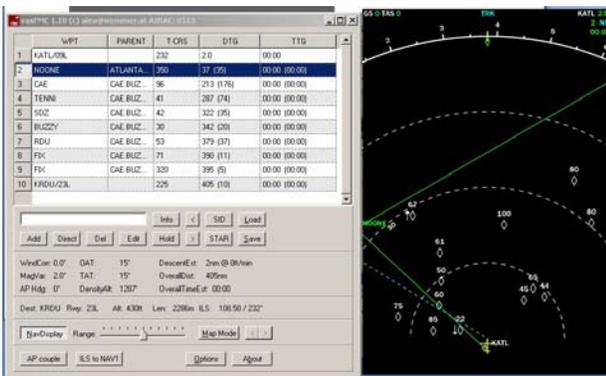
Here is the FMC without the TCAS on (and the options screen):



Here is a picture in the cockpit with the FMC operational – showing the prevailing headwinds as well:



Here is the FMC with TCAS ON



And finally – you must download this file:
<http://files.vas-project.org/viewfile.php?id=11>
 Which allows you to convert .FMC files into flight plan files which FS can open and use.

Enjoy VASFMC!

You can also see that since I have now turned on Flight Sim, I receive heading, distance, and time to fly to my next listed waypoint. You also will see GS and TAS in the top left hand corner.



DELTA FLY!

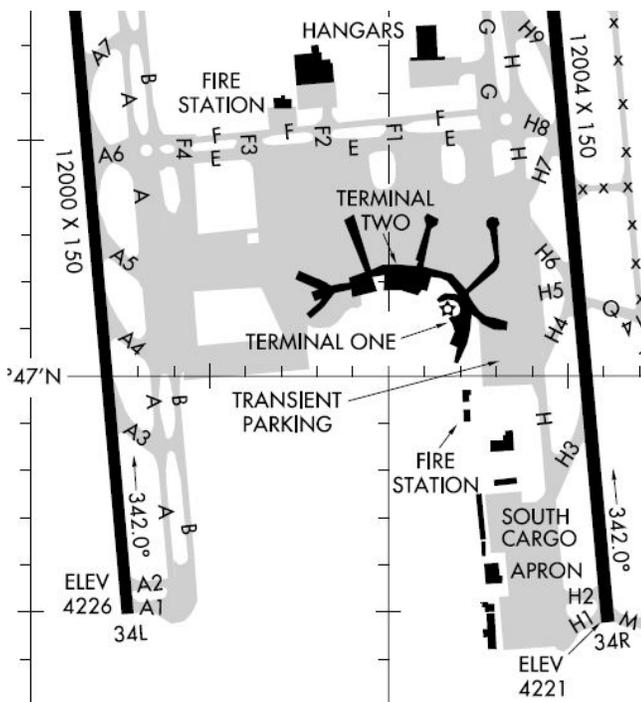
VATSIM – What Winds, What Runway?

George Lewis – VP Operations
Scott Clarke – VP Training

For those flying on VATSIM, choosing the correct runway for the landing and departure operations is easy. Whether ATC is on line or not, you should always use the correct runways based on the current winds. We will use KSLC (Salt Lake City) as an example.



Salt Lake City International Airport (KSLC) has runways going north (342 deg) and south (162 deg). When the north runways are in use, it is called "NORTH OPS". When the south runways are in use, it is called "SOUTH OPS".



"NORTH OPS" means that everything takes off and lands on runways 34L, 34R for commercial airliner

and runway 35 if you are flying general aviation (non commercial) or charter aircraft.

"SOUTH OPS" means that everything takes off and lands on runways 16L, 16R for commercial airline and runway 17 if you are flying general aviation (non commercial) or charter aircraft.

Many people tend to get confused by wind direction and which runways to use, so now is a good time for a refresher:

The ATC controller or the pilot if no ATC is on line should choose the active runways based on two criterion: 1) wind direction, and 2) calm-wind runways. They can obtain this information by looking at the current METAR. Use the runway(s) most nearly aligned with the wind when 5 knots or more or the 'calm wind' runway when less than 5 knots" (7110.65N paragraph 2-6-5).

The winds are given by the direction they are coming FROM. So if the winds in the METAR are *34010KT*, they are coming from the NORTH @ 340 degrees at 10 knots. You will want to land into the wind – runway 34L, 34R or 35. If the winds are *16010KT*, they are coming from the SOUTH @ 160 degrees at 10 knots, landing into the wind means you will want to land on runway 16L, 16R or 17.

The calm wind runways at KSLC are 34L, 34R, and 35.

Once the winds shift from the runway heading, confusion seems to happen. Remember that wind must shift to 90 degrees of the runway heading before you consider switching the active runway to the other (opposite) direction.

This means that runway 34L and 34R will be the active runway when the wind direction is from 250 degrees to 070 degrees.

When the winds are blowing from 071 degrees to 249 degrees at greater than 5 knots, Salt Lake City airport will operate under SOUTH OPS – using runways 16L, 16R or 17.

If you are flying on VATSIM and the winds change, ATC will switch the active as soon as it is convenient to do so. Keep in mind that the VATSIM weather dictates the runway activity, not your own or payware weather. You may be flying with clear weather, but if the weather conditions on VATSIM are 230 degrees at 7 knots, you will be flying SOUTH OPS and if you do not want to comply with this, then you need to disconnect and fly offline.

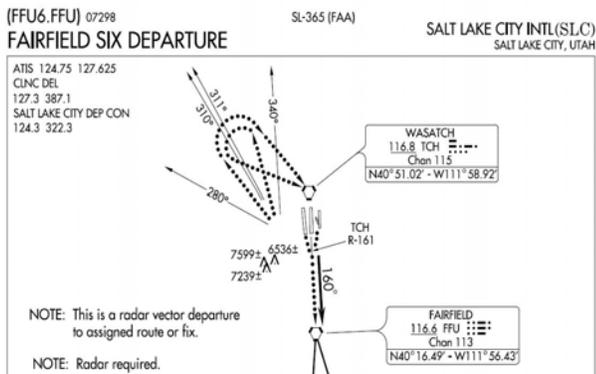
NORTH OPS versus SOUTH OPS – Departures

Unlike most airports, KSLC has restrictions on departures based upon which Ops are in use. The following table lists departures that can be used during NORTH OPS or SOUTH OPS or both:

Non-RNAV Departures	RNAV Departures
SLC9 – Both	EDETH1 – North Ops Only
FFU6 – South Ops Only	LEETZ1 – South Ops Only
SEVYR1 – North Ops Only	NSIGN1 – North Ops Only
	PECOP1 – North Ops Only
	TWINFALLS1 – Both
	WEVIC1 – South Ops Only

So what does this mean?

It means that if you plan on departing out of KSLC, you will have to fly the departure that is allowed under the current weather and wind conditions. If you are flying on the SEVYR1 and the winds shift to SOUTH OPS, you cannot fly this – you have to fly the FFU6 departure.



FFU6 Departure shows departures to the **South** only

If you take the time to actually look at the Fairfield Six departure, you will see that there are no allowed operations departing north.

TAKE-OFF MINIMUMS

Rwys 14, 32, 34L/R, 35: NA- Operational.

Rwy 16R: Aircraft assigned heading 160°, standard; assigned heading 280° CW through 340°, standard with a minimum climb of 410' per NM to 10,000'.

Rwys 16L and 17: Aircraft assigned heading 160°, standard; assigned heading 280° CW through 340°, standard with a minimum climb of 400' per NM to 10,000'.

Take-off Minimums for the FFU6 SID show runways 14, 32, 34L/R and 35 at NA-Operational – they cannot be used

This is not too difficult to figure out, if you will just take the time and actually pull up the chart and look at it. All of the charts for KSLC are available on the DVA website in the pilot center when you click on the link titled "Approach Charts"

If all of this is too much to deal with, perhaps an easier solution would be to just file and fly the SLC9.TCH departure, which allows you to depart under NORTH or SOUTH operations without changing your flight plan. You can also just file KSLC TCH and be done with it, as this means you are not using a departure.



RNAV Departures

Please note that the RNAV departures have restrictions as well. We find that many pilots want to fly the RNAV departures because they have heard they are real world, or they appear on the real world route websites. The problem is that most pilots lack a basic understanding of how to fly these RNAV departures. Their airplanes aren't equipped to properly fly RNAV, or their flight simulator database doesn't contain the proper waypoints. This issue of the Delta FLY focuses on flying RNAV departures and if you are interested in doing so, I highly recommend you read these articles for more information on how to properly fly an RNAV departure.

Tips to help you when working with Vatsim controllers

If you are new to flying on VATSIM, KSLC is a great place to start out, as some of the DVA Flight Academy instructors and other DVA members are also VATSIM controllers at KSLC. In addition, the Flight Academy, which is now based at KSLC, routinely operates training flights out of this airport with students who are new to ATC communications. Simply put in "new to online flying" in the remarks section and the controllers will do their best to help you out. There are a couple of quick tips I'd like to offer to help you avoid disaster.

- **Avoid group flights** – if you have little or no experience, the **last** thing you need to do is start with a group flight. The controllers are going to be super busy and will be in no position to help you out. In fact, we expect the pilots to have their act together and be very professional during these events. We have lots of pilots that need to get clearances, taxi instructions, takeoff clearances, etc. Just stay away from group flights until you have a few flights under your belt and know what you are doing.
- **Know how to FLY your airplane** – if you can't fly the airplane properly, do not show up on VATSIM and try to fly with other traffic and ATC. It's a bad idea. Get some experience in the airplane and learn how to control it. ATC **will** give you specific instructions, such as headings, altitudes and speeds to maintain and if you cannot do this **without the use of the autopilot**, you need

to get more experience flying before attempting to fly online.

- Download and print out the airport diagrams - you will be given taxi instructions that include taxiways – if you have the airport diagram handy, you will be prepared to comply with ATC instructions when moving on the ground.
- **CRAFT** – Learn this: **C**learance, **R**oute, **A**ltitude, **F**requency, **T**ransponder – this is the order that ATC will give your flight plan clearance to you and you need to know it is coming. When ATC is busy, just read back the squawk code to the controller as your acknowledgement that you understand and will comply.
- Use a headset – if you cannot use voice, you will encounter problems. Typing and flying usually don't mix well, especially if you are a slow typist. ATC will have to issue you commands via text as well, and this takes away from the normal flow of operations. If you can only use text, you will probably be shuffled to the bottom of the priority list until ATC can get the time to work with you. A good headset costs about \$30 and is well worth the purchase.
- Sign up for lessons – the DVA Flight Academy offers flight lessons and extensively teaches online out of KSLC using FS2004 and the EMB-120ER. If you want to learn to fly like a real world pilot and communicate properly with ATC, this is the best way to go. These are real time lessons with the cockpit shared between you and the flight instructor. You can sign up for lessons regardless of your flying experience and ability. The Flight Academy is a life changing experience for most pilots who go through it.

DVA Group Flights Do's and Don'ts

Robbie Chiste, DVA3280

DVA Director of Events, Senior Captain B767



Delta Virtual Airlines has a fantastic events program that creates fun events for everyone to enjoy. However, many times pilots are unsure or uncomfortable about what to do and what to expect in an event situation. It is important that all pilots keep in mind that every event is a learning experience, even for the most experienced pilot. Events are the best way to meet other DVA members and learn how to fly in a dense area of traffic. Always remember, if you miss the signup deadline, PLEASE COME, you are always welcome to fly with us, the more the merrier! The following are extremely important tips to flying DVA group flights on VATSIM.

- DO read the entire flight briefing found here:
<http://www.deltava.org/eventcalendar.do> for each event. It contains all the information you need, including charts, to plan your flight with ease.
- DON'T fly an event if you have never flown on VATSIM.
- DO fly an event after you can comfortably complete a flight on VATSIM on your own.
- DON'T Log on to VATSIM clueless about where you are going, and how you plan to get there, this puts major stress on ATC.
- DO select an aircraft you are very comfortable flying with and know how its autopilot functions.
- DON'T select an aircraft that you cannot fly well or have never flown before. The time to work on your skills with these aircraft is NOT at an event.
- DO turn crash detection to OFF.
- DON'T spawn ON A RUNWAY. This can create havoc in no time.
- DO spawn at a gate clear of all taxiways and runways.
- DO file a VALID route that you CAN fly! (The route provided in the event briefing is always a valid route)
- DON'T file a route you CAN'T fly.
- DON'T file an invalid route. (Such as Filing ATL-PBI as: ATL MCN PHK PBI)
- DON'T ever file a route that says "direct". This can make a controller irate.
- DO know how to turn on your transponder!
- DO file a valid cruise altitude. (North and East = Odd Flight Level (FL390, FL330) South and West = Even Flight Level (FL360, FL380))
- DON'T call for clearance until you have sent your flight plan and have verified it has been sent.
- DO have patience and use COURTESY on the frequency, wait your turn to speak.
- DON'T intentionally interfere with other transmissions by speaking loud and bold on top of the current speaker, this

is the worst display of respect a pilot can show on VATSIM.

- DO taxi carefully in an event; there are many aircraft around, keep it at 20gs or less for safety.
- DON'T call "Ready for takeoff" until you are actually ready for immediate departure. This includes transponder ON, flaps set, departure information set on radios, FMC or GPS, and takeoff checklist complete.
- DON'T call "Delta 3280 airborne" unless requested by the controller. This is simply a clogging of the voice frequency and the controller will be with you as soon as he can.
- DO follow ATC commands at all times, however:
- DON'T agree to an ATC command if you are unable, or think you are unable. Simply inform the controller, "Delta 3280, unable" and he will try to work something else out.
- DO connect to the DVA private voice channel in SB3 during cruise in areas without ATC to chat and announce intentions to other DVA members. (rw.liveatc.net/DAL)
- DON'T leave your computer area for more than 10 minutes during cruise, if you must be away longer than that, disconnect and reconnect when you return.
- DO review arrival procedures and charts PRIOR TO entering the STAR or arrival procedure.
- DON'T exceed 250 knots below 10,000 feet at any time!
- DO exit the runway in a timely manner; odds are there is an aircraft right behind you.
- DO turn your transponder off after exiting the runway.
- DO taxi to the gate and enjoy watching the rest of the pilots come in!
- DO email ANY events questions you have to events@deltava.org and I will respond ASAP!
- And finally.....DO HAVE FUN!! ☺
Keep in mind that essentially, events are created to have a good time with your fellow pilots.

