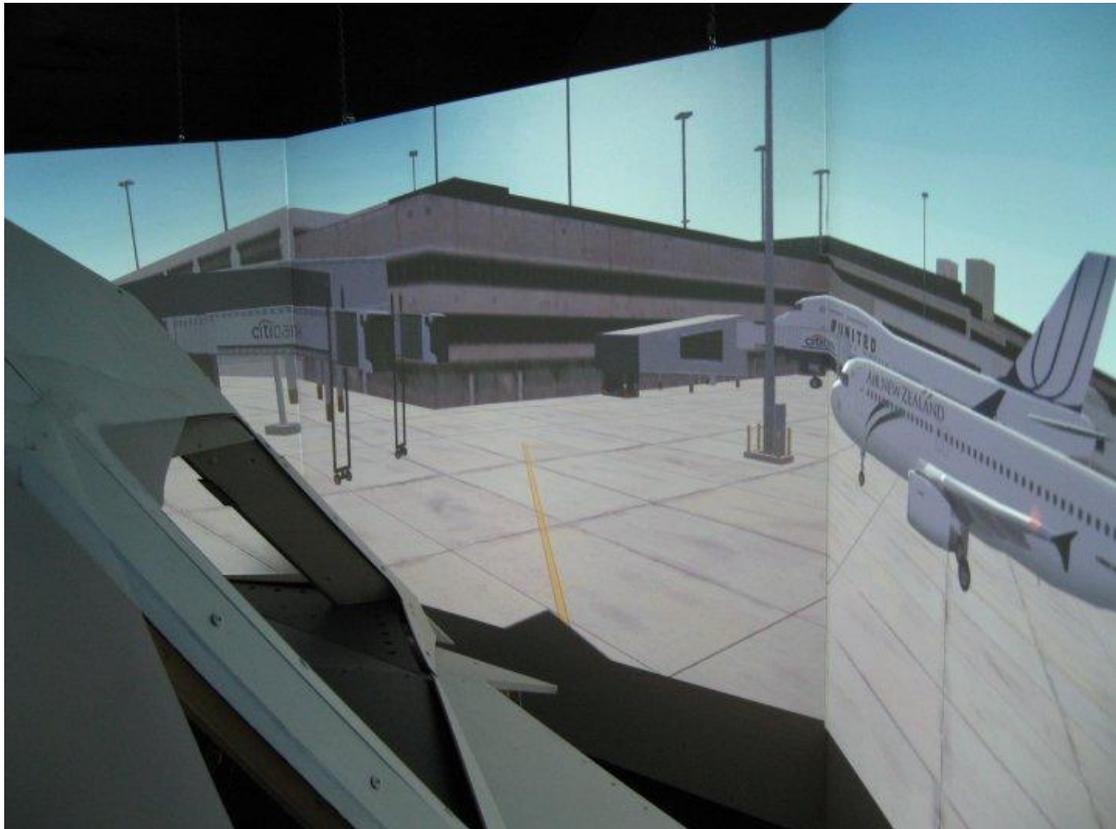


Simulator Visuals



Three Projector Set-Up

Notes by Ian Cameron

Introduction:

For the past 6 months amongst other things I have (on and off) been setting up, adjusting and tweaking a 3 projector setup on my simulator. During this time I have discovered many unforeseen problems and a lot of, I hope, useful information and tips which I thought worthwhile passing on to others.

Some of this information I have obtained from other enthusiasts but have not copied any documentation in presenting these notes and any such information is not of a proprietary nature.

If you have any additional information or something that may be of use to others please let me know and I'll add it to these notes. Please also set me straight if I have any misconceptions. These notes are purely my own opinions based on experiences during the exercise.

This document is not intended as a step-by-step guide, but rather a set of notes which you may find helpful and which could save you a lot of time. For reference I have attached text copies of my panel.cfg, aircraft.cfg, FS9.cfg and a sample FLT file

The set-up I am using is not necessarily the best one for you, or for every simulator. It is simply the way I have found best for myself, within my own computer system and room limitations. These sorts of things will always involve subjective judgements as to which is best...one man's meat is another's poison.

However the end result is a visual system I find very satisfactory and pleasing to use.

The Equipment:

Computer System:

This is the main FS computer that runs 3 scenery windows, Capt and Centre MIP and is Maxvista Server for FMC

Processor Intel Dual Core E8500 3.16 Ghz
Gigabyte GA-EP45-DSR3 LGA775 P45 Motherboard
4GB Corsair DDR2 800 RAM
Gigabyte Geforce 9600GT 1GB PCIE x16 Video Card
2 Seagate 500GB SATA Hard Drives

There are two other computers, one runs SIOC, ASV6, IVAO and VATSIM ATC, Real Time, FSLCD, FSBUILD etc and the other is a Maxvista Client that simply displays the FMC CDU screen.

Projectors:

Three BenQ MP522 ST (Short Throw) DLP 1024*768 Native Res, 1000:1 Contrast Ratio, 2000 Lumens

*Price at the time I purchased Jan 2009 approx **AU\$950** each*

Additional:

Matrox Triple Head to Go Digital Edition

Screens:

Homemade ~1400mm*1150mm 3mm MDF mounted on 42*19 pine frames, screwed together and hung from ceiling by chains, and fixed at the bottom to the simulator frame (for rigidity...so they don't swing around). Painted with white flat ceiling paint....there are better finishes than this...I'm not going into that now as its quite a subject. I already had the ceiling paint and it seems OK, but I probably could get better results with a more scientific approach.

Projector Selection:

Why select the above projectors?

My previous single screen projector was a BenQ DLP. This did an excellent job with FS (now retired as a home theatre projector having done many sorties with a risky pilot ☺), and the BenQ pricing is quite good. The replacement bulbs are also cheaper than many. I really wanted to keep the budget to about AU\$3000 for the three projectors, and the MP522 met that as well as being short throw.

The MP522 I would class as bottom of the range in short throw projectors. Two factors worried me....the contrast ratio of only 1000:1 (my previous BenQ was 2000:1) and the fact that it has a fixed throwno image size zoom adjustment.

The contrast ratio turned out to be a non-issue. I did some research about contrast ratio and one of the most telling pieces of information was that a single candle in a room renders a 10000:1 contrast ratio projector less than a 1000:1 contrast ratio one. Now when you consider the amount of light from 3 projectors bouncing of angled screens, and the lighting in the simulator itself I think you can see that contrast will be degraded (only noticeable for night flying but even then not enough to be a problem). So I took the risk on contrast ratio and that decision proved correct. I'm not saying a higher contrast one would not be better, just that the 1000:1 is very adequate given the ambient light present when simming.

The image zoom adjustment was entirely another thing...I strongly suggest you get one with this feature. Not having this facility has cost me many hours tweaking the screen distance to make the image exactly fit the screen. But now that it is set up it is no longer a problem. To go to the next BenQ one with this additional feature was about another AU\$700 per projector. There were times I wished I had spent that, but no so much now the pain is over...it all comes down to what your budget is I guess.

The big advantage of short throw is that it enables screens to be placed closer to the simulator without the simulator shell throwing a shadow.

Projector Installation:

The photos below are self explanatory. One difficulty encountered was the close proximity of each projector to the other



Why do I want the screens closer to the simulator?

I found that pixelation was less noticeable on a small screen closer to the viewing point, than a larger screen further away. This is somewhat due to the small amount shimmering you get between some pixels particularly at the 1024*768 resolution. This is more noticeable on a projector screen than on a standard monitor where it might hardly be perceived.

The other advantage of having the screens closer is that there is less of what I call “room effect”...being aware you are in a room, and less chance of seeing screen edges...ie being able to see the top of the screen

Also given the space I had available (4m wide room) the largest screens I could use in the 45 degree configuration (more on this later) were 1600mm*1200mm. I initially made the screens this size but in the end reduced them to 1400mm*1150mm as part of the optimisation process.

Set-Up Options:

What are the options regarding visuals with three projectors?

I'm assuming here that the Matrox Triple Head is a given...the only other option is Wideview with additional pc's and FS installations. IMOP the TH2GO is a much simpler solution. I didn't want the hassle of trying to synchronise weather, online traffic etc. There are other reasons why Wideview is a promising option but for me now wasn't the moment. Another even better reason is that a fellow simulator enthusiast bought a TH2GO for me for setting up his simulator for him.

So assuming a TH2GO what are the display set-up options?

I considered the following set-ups of which you will probably have seen examples on the sim sites.

*1. A single large wide screen in front of the simulator which accommodates a single front view 3072*768 image a third of which is projected by each projector. People using this configuration usually set the FS zoom option to a low figure (eg. 0.5 or 0.6) on the FWD view. This gives a very large field of fwd view....from memory about 120 degrees.*

Advantages: one single FS view window open (3072*768). No Window borders at the image join pts. No complicated image matching, object alignment or horizon adjustments.

Disadvantages: no “wrap around the simulator effect”....view is only in front. Screen edges are visible left and right so more “room effect” ...ie the vase of flowers on the sideboard is to your left....for those who have their simulators in the living room! (Can be overcome to some extent by black curtains). Probably the biggest disadvantage is that things that appear in front of you (with the wider field of view) should be going past you!

I actually tried the single fwd 3072*768 image across the 45 degree screen set-up mentioned below. At first I thought this was quite good until I realised that taxiways appeared to go off at all sorts of funny angles and all sorts of other distortions.

*2. A single curved screen that partially wraps around the simulator to accommodate FWD LEFT, FWD and FWD RIGHT views, each window being 1024*767. This would be a good choice for my own setup.*

Advantages: The curved screen with the required extra software would I think negate a lot of the tweaking I had to do, and would be more immersive in that the transition between the screens would be better. I'm only guessing this as I have no experience with this arrangement apart from seeing photos.

Disadvantages: Software (Sol7)expense (I think around AU\$600) which is not that significant in proportion to the cost of the projectors. It also means another piece software running on our already overtaxed FS/LDS767 pc. The screens are a little more tricky to make...not significant with readily bendable and cheap MDF.

3. *A centre screen and two others one each side set at 45 degrees, accommodating FWD LEFT, FWD and FWD RIGHT views.*

Advantages: gives wrap around effect, no special software required, screens easy to make. Provides the ability to look out of the sim at 45 degrees and see things exactly where they should be. General immersion is quite good and its nice to see things going past out the corner of your eye. With a small amount of masking of the side windows, no “room effect” at all, and no screen edges visible.

Disadvantages: A LOT of tweaking required, particularly in relation to horizon angles and image matching on the two side screens. Changing the horizon angles (reason for this discussed later) meant that it is not possible to get every part of the image to match up exactly at the screen joins. This would at first glance appear to make this method not so desirable but in actual fact the compromises are quite small and have little effect on the total outcome.

4. *A centre screen with side screens at 90 degrees, forming a box around the simulator right back past the side windows and accommodating 5 view windows LEFT, FWD LEFT, FWD, FWD RIGHT and RIGHT, each window 615mm*768mm, distributed across the 3 projectors. A friend’s 737 sim running under Project Magenta uses this method and this set-up has by far the best wrap around effect of all.*

Advantages: Excellent wrap around effect, no horizon angle adjustments. I’m not familiar enough to know of any other tweaking issues.

Disadvantages: For LDS767 builders the biggest problem is overtaxing of the FS pc with 5 scenery windows open. My friend uses PM with about 6 computers for his 737 and the main FS pc handles scenery only. Another problem is a degree of distortion at the corners of the “box”...imagine an aircraft taxiing across the corner and you will get some idea. Again in reality this doesn’t effect the immersion that much...only if you concentrate on that area.

I general there are compromises to be accepted with any method.

Installation Problems:

In actual fact there weren't many worth mentioning. The major one I found was in setting up the TH2GO with the projectors. I made the mistake of reading the Matrox Instructions. The drivers installed OK and the video card could see the TH2GO attached but when using the Installation Wizard the Triple Head wouldn't recognise the projectors as monitors it knew about, so just assumed there weren't any. Once I ignored the Wizard and just let everything start up the projectors displayed normally.

The first thing is to go to Windows Display options and set up Display No1 to 3072*768, and get accustomed to looking at a very elongated icon for that display in the Settings screen.

This results in a bit of initial "fun". In my case I have a monitor setup on a splitter with the left hand projector, because everytime you do something on the pc you don't want to start up the 3 projectors. So now you start to install something and find the pc ceases to respond. That's because the centre of the normal desktop is now off the left hand monitor and there is a window sitting there that you can't see waiting for you to hit "Next". Simple but annoying...so now whenever I do anything on the pc and I'm not turning on the projectors I set the main display back to 1024*768, do my work then set it back to 3072*768. A minor thing but its amazing how often I initially got caught out.

Parameters To Alter Things Within the View Windows:

At this point its worth looking at the tools we have to tweak the views.

The main files which control the view configuration to get things looking right are the panel.cfg, aircraft.cfg and the flight (.flt) file.

Here is part of the [VIEWS] section from my current panel.cfg

```
[VIEWS]
VIEW_FORWARD_WINDOWS=1,2,3,4,41,45,1000,61,MAIN_PANEL

VIEW_FORWARD_LEFT_ZOOM=0.980
VIEW_FORWARD_LEFT_DIR=0.940, -4.10, 313.700 //314.350

VIEW_FORWARD_ZOOM=0.980
VIEW_FORWARD_DIR=2.500, 0.000, 0.000 //pitch default 3.5

VIEW_FORWARD_RIGHT_ZOOM=0.980
VIEW_FORWARD_RIGHT_DIR=0.540, 5.50, 46.400 //45.620
```

The three parameters we are interested in are ZOOM, and the three numbers associated with the particular view.

The ZOOM is not so relevant here as because we always work from a saved flight situation the ZOOM will be controlled from the FLT file. However it is a good idea to set this value the same once you finalise the setting. I use a ZOOM value of 0.98....why?...because I like it around the 1 mark (some say around 0.8 is more realistic) and during some tweaking of side screens it ended up at 0.98.

Looking at the VIEW_FORWARD_DIR the first parameter 2.5 relates to the PITCH of the aircraft.

If you look at the default LDS767 you will see this number as 3.5. So why is mine set up as 2.5? This will depend on the height of the screen above the floor. You have to adjust it to suit your own set-up so that the attitude in relation to the ground looks correct. Imagine if the bottom of the screen image was at the simulator floor level (assuming an 1150mm high screen). From the pilot position looking out of the sim you would feel very high above the runway. So this figure can be altered to make that look right for your own particular arrangement. Decreasing the number effectively feels like it raises the aircraft (it really makes it pitch up more). Another way is to think of it lowering or raising the horizon. Don't overdo this or in the cruise you wont see any horizon. It's a trial and error juggling act to get a satisfactory result.

The next parameter controls the ANGLE of the horizon. For the forward view this is zero...we want a level horizon. But for the side views the horizon needs to be at an angle (discussed further on).

The third parameter is the HEADING of the view...ie FWD_RIGHT is 315. This parameter can be altered to make the join with an adjacent screen match up better. Mine is 313.7.

Here is the [VIEWS] section of my aircraft.cfg

```
[Views]  
eyepoint=81.60, -5.67, 6.75 //81.60, -1.67, 4.27
```

These parameters are the longitude, latitude and vertical eyepoint positions from the reference point of the pilot view. The latitude is the one that concerns us. Unfortunately (but understandably) FS was only designed to be used with a pilot sitting in front of a computer monitor. This creates a real headache for our two seat simulators. If we set up the view so that the Capt view down the runway looks as it should, then the FO feels he is heading off to the right of the runway. If we set it up so it looks right looking from the middle of the whole MIP then the Capt feels he is heading off at angle to the left and the FO still to the right of the runway. One way of seeing this on a monitor is to position your head on the left hand side of the monitor whilst making the aircraft aligned with the runway using external view. Switch back to 2D panel view and look from each side of the monitor. This effect is magnified to some extent with a full size sim.

Note my latitude setting is -5.67 whereas the default LDS767 is 1.67. I have set the eyepoint up in favour of the Capt view, as most of the time I fly alone.

I have set up a two way switch to toggle this eyepoint, either way so I can make it look right for a visitor in the FO seat.

To further help I have positioned the projectors/screens slightly left of the simulator centre line to bias things toward the Capt view.

There is nothing we can do about this short of having independent visuals for each pilot...some commercial fixed base simulators have this setup with LCD screens.

Airline simulators have advanced (and expensive) visuals which overcome this problem.

Its just another thing we have to learn to live with, and adjust according to our individual requirements!

Setting Up for FS:

Ok so now we fire up FS (in my case this is FS9 so some things mentioned may be different on FSX), and load up the LDS767. In my case my two MIP panels that were on the monitors are now on the centre and right hand screens. This was to be expected and is easily fixed but shuffling the MIP windows along a further 2048 pixels to the right. This can be done by simply moving the whole window (my Capt and Centre MIP panels are in one window 2048*764) along to the MIP monitors and saving the flight.

Here is the relevant part of the FLT file for my setup:

```
[Panel.2]
ScreenUniCoords=0, 1792, 8192, 4352
UndocCoords=3073, -15, 2048, 764
Visible=True
Undocked=True
HiddenOn=False
ID=2
ViewsOn=131073
```

The relevant part is "UndocCoOrds" Note the MIP panel window (ID=2 from panel.cfg) now sits at 3073 pixels along and is positioned up slightly off and above the monitors (-15 pixels). The size of the window is 2048*764.

Now we can set up the scenery windows. Undock the Main FWD view and position and size its window to the centre screen. Open another view window, select it to FWD LEFT view and move it to the left screen, and then another to set up FWD RIGHT and move it to the right screen. When it all looks pretty close Save the flight again. There is a further complication which I will come back to.

The first and somewhat unexpected thing to become apparent was that the perspective went out on the side screens. What I mean by this is that the top line of a building, for example, extending from the centre screen to the right screen would appear to be bent up in the air when viewed from the normal pilot seated position ie. the horizon appeared to go uphill. Similarly on the left hand screen. In order to make the building (ie horizon) look in the correct perspective it was necessary to set the horizon angle down. This is done in the panel.cfg of the aircraft and is the ANGLE parameter described above. There are many factors which effect the final

parameter value and everyone will have a different value depending on the physical set-up in place. Setting these values is pretty much trial and error until the required result is achieved.

A further complication now arises because of the tilted horizons on the left and right screens. The easiest way to appreciate this is draw a grid of squares on two pieces of paper so that they line up perfectly when sitting side by side. Now tilt the right hand piece to angle down, so that the “horizon” lines still meet...you will see that the lines further down no longer match up. In this example the left hand piece of paper is effectively the Centre Screen and the right hand piece the Right Hand Screen. If you look at the cover photo on these notes you will see that although the buildings and aircraft align pretty well, the apron concrete slab lines don't match up exactly near the bottom of the screen. In practice the lower part of the screen is pretty much out of view of the pilot, so it has little effect on general immersion and I have tweaked a few things to achieve a better result. Even having a different Zoom factor for the side screens can help. There are some tweaks with the projector itself that can help reduce this effect....like keystone adjustment. Again its all about optimising for your own setup.

The angled horizon on the side screens is a bit strange from any viewpoint other than the pilot position.



But I can assure you that when sitting in the cockpit everything looks normal.

On the next page are three photos which might help you further appreciate these points.

Look at the runway side line marking....see how the angle changes slightly depending on eyepoint.



Normal Pilot Eyepoint



Above Pilot Eyepoint



Below Pilot Eyepoint

This photo shows the matching problem...note the threshold line alignment at the screen joins....more evident on the right screen...more tweaking required ☺



This photo shows where the bottom of the image is in relation to the sim....not visible from the flying position



Here is a photo after most tweaking done...the slight change in angle across the left and centre screens is due to the camera position. From the flying position this is not evident.





Here are a few more shots....taken at different stages of tweaking so ignore the obvious mismatches etc. Note how well the perspective is maintained with the 767 to the right transitioning from one screen to the other





One in early morning cloud



and one at the gate



Note how good the perspective is with the gangway

Appendix:

Panel.cfg

```
[Window Titles]
Window00=Boeing 767 Upper Panel
Window01=Boeing 767 Main Panel
Window02=Boeing 767 Upper Panel First Officer
Window03=Boeing 767 Main Panel First Officer
Window04=Boeing 767 Overhead
Window05=Boeing 767 Pedestal
Window06=Boeing 767 FMC
Window07=Boeing 767 MCP
Window08=Main panel
Fixed Window30=L2_window
Fixed Window31=R3_window
Fixed Window32=R2_window
Fixed Window33=R1_window
Fixed Window34=L3_window
Fixed Window35=L1_window
Fixed Window36=rear_view

[VIEWS]
VIEW_FORWARD_WINDOWS=1,2,3,4,41,45,1000,61,MAIN_PANEL

VIEW_FORWARD_LEFT_ZOOM=0.990
VIEW_FORWARD_LEFT_DIR=0.940, -4.10, 313.700 //314.350

VIEW_FORWARD_ZOOM=0.990
VIEW_FORWARD_DIR=2.500, 0.000, 0.000 //pitch default 3.5

VIEW_FORWARD_RIGHT_ZOOM=0.990
VIEW_FORWARD_RIGHT_DIR=0.540, 5.50, 46.400 //45.620
```

VIEW_RIGHT_ZOOM=1.000
VIEW_RIGHT_DIR=2.500, 0.000, 90.000

VIEW_REAR_RIGHT_ZOOM=1.000
VIEW_REAR_RIGHT_DIR=2.500, 0.000, 135.000

VIEW_REAR_LEFT_DIR=2.500, 0.000, 225.000

VIEW_LEFT_ZOOM=1.000
VIEW_LEFT_DIR=2.500, 0.000, 270.000

```
//-----  
[Window00]  
file=B767upper.bmp  
size_mm=1280,410  
position=0  
visible=1  
ident=1
```

gauge00=LVLDB767oh!OH_CPT, 816,0,441

```
//-----  
[Window01]  
file=B767forward.bmp  
size_mm=1280,680  
position=6  
visible=1  
ident=2
```

gauge00=LVLDB767stby, 617,-14,166,645
gauge01=LVLDB767Afds!MCP, 1,1,1,1
gauge02=LVLDB767Afds!SMC, 848,15,90,77
gauge03=LVLDB767Afds!Autoland, 503,35,112,84
gauge04=LVLDB767Afds!MasterSwitch, 16,1,1
gauge05=LVLDB767Afds!RadarAltimeter, 456,148,27,133
gauge06=LVLDB767Afds!AltAlert, 596,141,24
gauge07=LVLDB767Afds!InstrSelect, 0,315,65,350
gauge08=LVLDB767Afds!GASwitch, 886,611,40,62
gauge09=LVLDB767Afds!Gear, 1181,-28,121,731
gauge10=LVLDB767Afds!Autobrakes, 791,503,1,1
gauge11=LVLDB767Afds!OMI, 572,306,45,258
gauge12=LVLDB767at!AT, 0,0,10
gauge13=LVLDB767FMC!FMS, 59,3,116,43
gauge14=LVLDB767FMC!XNAV, 0, 600 ,300
gauge15=LVLDB767airpeedL, 48,83,165,233
gauge16=LVLDB767vsiL, 449,327,126,171
gauge17=LVLDB767altimeterL, 488,126,142,206
gauge18=LVLDB767main!rmiL, 60,329,159,258
gauge19=LVLDB767ehsiL!EHSI, 222,333,221,315
gauge20=LVLDB767eadil!EADI, 223,45,212,234
gauge21=LVLDB767ecuL, 638,616,141,95
gauge22=LVLDB767main!clockL, 445,501,131,166
gauge23=LVLDB767eicas!EICAS, 946,24,232,293
gauge24=LVLDB767leicas!LEICAS, 945,358,234,292
gauge25=LVLDB767main!ENG, 795,261,118,187
gauge26=LVLDB767main!OILW, 810,446,90,27

gauge27=LVL\B767warn, 792,104,122,160
gauge28=LVL\B767main!TRP, 1195,7,75,67

```
//-----  
[Window02]  
file=B767upper_FO.bmp  
size_mm=1280,410  
position=0  
visible=0  
ident=3
```

gauge00=LVL\B767oh!OH_FO, 0,0,441

```
//-----  
[Window03]  
file=B767forward_FO.bmp  
size_mm=1280,680  
position=6  
visible=0  
ident=4
```

gauge00=LVL\B767Afds!MCP, -41,0
gauge01=LVL\B767Afds!Nav2, 546,0
gauge02=LVL\B767Afds!Autoland, 578,194
gauge03=LVL\B767Afds!MasterSwitch, 757,37
gauge04=LVL\B767Afds!AltAlert, 1144,225
gauge05=LVL\B767Afds!InstrSelectFO, 1200,398
gauge06=LVL\B767Afds!GASwitch, 165,632
gauge07=LVL\B767Afds!FOSwitch, 195,632
gauge08=LVL\B767Afds!GearFO, 282,273
gauge09=LVL\B767Afds!FOBrakePress, 504,200
gauge10=LVL\B767lightFO, 0,0
gauge11=LVL\B767airspeedR, 555,264,168
gauge12=LVL\B767vsiR, 1032,380,136
gauge13=LVL\B767altimeterR, 1028,221,148
gauge14=LVL\B767main!rmiR, 547, 444 ,176
gauge15=LVL\B767eadir!EADI, 767,172,221
gauge16=LVL\B767ecuR, 270,622,146
gauge17=LVL\B767ehsiR!EHSI, 764,408,231,325
gauge18=LVL\B767main!clockR, 1022,528,146
gauge19=LVL\B767eicasR!EICAS, 22,180,225
gauge20=LVL\B767leicasR!LEICAS, 22,409,225
gauge21=LVL\B767main!ESW, 15,629,150
gauge22=LVL\B767main!TRP2, 275,224

```
//-----  
[Window04]  
file=B767overhead.bmp  
size_mm=1280,879  
position=3  
visible=0  
ident=41  
sizeable=1
```

gauge00=LVL\B767Overhead!Hydraulics, 0,0,305
gauge01=LVL\B767Overhead!Electrics, 301,0,225
gauge02=LVL\B767Overhead!Fuel, 528,0,219
gauge03=LVL\B767Overhead!Pressurization, 745,0,219

gauge04=LVL D\B767Overhead!Pneumatics, 968,0,312

//-----

[Window05]
file=B767pedestal.bmp
size_mm=558
position=4
visible=0
ident=45

gauge00=LVL D\B767pedestal!EngineBlock, 0,0
gauge01=LVL D\B767pedestal!Fire, 203,497
gauge02=LVL D\B767pedestal!Trims, 204,764
gauge03=LVL D\B767pedestal!Audio, 9,674
gauge04=LVL D\B767pedestal!Test, 365,805
gauge05=LVL D\B767Radios!ILS, 205,674,228
gauge06=LVL D\B767Radios!COMM1, 9,499,193
gauge07=LVL D\B767Radios!COMM2, 9,588,193
gauge08=LVL D\B767Radios!ADF, 9,781,193
gauge09=LVL D\B767Radios!TNSP, 205,586,228

//-----

[Window06]
Background_color=0,0,0
size_mm=370,440
position=8
visible=1
ident=1000

gauge00=LVL D\B767FMC!CDU, 25,5,312
//gauge01=LVL D\B767FMC!Keyboard, 318,372,40,59

//-----

[Window07]
Background_color=0,0,0
size_mm=988,145
position=2
visible=0
ident=61

gauge00=LVL D\B767Afds!Nav1, 0,0
gauge01=LVL D\B767Afds!MCP, 201,0
gauge02=LVL D\B767Afds!Nav2, 788,0

//-----

[Window08]
Background_color=0,0,0
size_mm=1280,410
position=0
visible=1
ident=MAIN_PANEL
nomenu=1

gauge00=LVL D\B767Afds!Afds, 0,0

//-----

```
[Fixed Window30]
file=B767_L2window.bmp
position=7
visible=0
ident=30
render_3d_window=0
nomenu=1
window_size= 1.000, 1.000
window_pos= 0.000, 0.000
```

```
//-----
[Fixed Window31]
file=B767_R3window.bmp
position=7
visible=0
ident=31
render_3d_window=0
nomenu=1
window_size= 1.000, 1.000
window_pos= 0.000, 0.000
```

```
//-----
[Fixed Window32]
file=B767_R2window.bmp
position=7
visible=0
ident=32
render_3d_window=0
nomenu=1
window_size= 1.000, 1.000
window_pos= 0.000, 0.000
```

```
//-----
[Fixed Window33]
file=B767_R1window.bmp
position=7
visible=0
ident=33
render_3d_window=0
nomenu=1
window_size= 1.000, 1.000
window_pos= 0.000, 0.000
```

```
//-----
[Fixed Window34]
file=B767_L3window.bmp
position=7
visible=0
ident=34
render_3d_window=0
nomenu=1
window_size= 1.000, 1.000
window_pos= 0.000, 0.000
```

```
//-----  
[Fixed Window35]  
file=B767_L1window.bmp  
position=7  
visible=0  
ident=35  
render_3d_window=0  
nomenu=1  
window_size= 1.000, 1.000  
window_pos= 0.000, 0.000
```

```
//-----  
[Fixed Window36]  
file=B767_rearview.bmp  
position=7  
visible=0  
ident=36  
render_3d_window=0  
nomenu=1  
window_size= 1.000, 1.000  
window_pos= 0.000, 0.000
```

```
[Color]  
Day=255,255,255  
Night=196,196,196  
Luminous=201,64,64
```

```
[Default View]  
X=0  
Y=0  
SIZE_X=8191  
SIZE_Y=2500
```

Flight File (part of relevant to display) *NOTE COMMENT
RELATING to WINDOW 1**

```
[Main]  
Title=B767 at Gate57 YSSY C&D  
Description=090709  
AppVersion=9.1.40901  
FlightVersion=1
```

```
[Tower]  
Latitude=S033° 56' 43.5134"  
Longitude=E151° 10' 51.4997"  
Altitude=+000074.00
```

```
[Track]
```

Latitude=N047° 25' 53.4256"
Longitude=W122° 18' 28.7933"
Altitude=+000432.00

[Options]

Titles=False
Sound=True
Pause=False
AxisIndicator=Off
ATC=False
Moonlight=True
SimSpeed=001.00
ShowStars=True
ApproachLights=True
FlightDisplay=Off
SlewDisplay=Coordinates

[EFIS]

Active=False
Type=Rectangles
Density=Thin
Range=Short
NavAid=VOR 1
Altitude=0
Flags=0

[Avionics]

LocalizerSelect=Auto Select
DMESelect=1

[Kneeboard]

PageId=0
Visible=False
Location=217, 189
Page0Scroll=0, 0
Page1Scroll=0, 0
Page2Scroll=0, 0
Page3Scroll=0, 0
Page4Scroll=0, 0
Page5Scroll=0, 0

[Panels]

Panel.On=True
HUD.On=False

[Window.1] **//COMMENT: THIS LITTLE EXTRA VIEW WINDOW IS NECESSARY BUT I DO NOT KNOW WHY...I WILL UPDATE and EXPLAIN THIS WHEN I KNOW MORE**

Order=3
Active=False

Undocked=False
Maximized=True
ScreenUniCoords=0, 0, 10, 10
UndocCoords=1033, 29, 1037, 709
ViewMode=Cockpit
ViewDir=Up
CockpitZoom=001.00
VirtualZoom=001.00
TowerZoom=008.00
TrackZoom=004.00
SpotZoom=000.50
MapZoom=011.00
SpotDirection=128.65
SpotDistance=+000395
SpotTransitionType=Roll
SpotFastTransition=False
SpotAltitude=+000091
PanHeading=360.00
PanPitch=360.00
PanBank=360.00
ChaseTarget=1
SavedViewMode=Cockpit

[Window.2]
Order=2
Active=False
Undocked=False
Maximized=False
ScreenUniCoords=0, 0, 2730, 6144
UndocCoords=0, 0, 0, 0
ViewMode=Cockpit
ViewDir=Forward Left
CockpitZoom=000.98
VirtualZoom=001.00
TowerZoom=008.00
TrackZoom=004.00
SpotZoom=000.50
MapZoom=011.00
SpotDirection=128.65
SpotDistance=+000395
SpotTransitionType=Roll
SpotFastTransition=False
SpotAltitude=+000091
PanHeading=360.00
PanPitch=360.00
PanBank=360.00
ChaseTarget=1
SavedViewMode=Cockpit

[Window.3]
Order=1
Active=True
Undocked=False
Maximized=False
ScreenUniCoords=2729, 0, 2730, 6144
UndocCoords=0, 0, 0, 0
ViewMode=Cockpit
ViewDir=Forward
CockpitZoom=000.98
VirtualZoom=001.00
TowerZoom=008.00
TrackZoom=004.00
SpotZoom=001.00
MapZoom=011.00
SpotDirection=276.10
SpotDistance=+000402
SpotTransitionType=Roll
SpotFastTransition=False
SpotAltitude=+000053
PanHeading=360.00
PanPitch=360.00
PanBank=360.00
ChaseTarget=1
SavedViewMode=Spot

[Window.4]
Order=0
Active=False
Undocked=False
Maximized=False
ScreenUniCoords=5456, 0, 2730, 6144
UndocCoords=0, 0, 0, 0
ViewMode=Cockpit
ViewDir=Forward Right
CockpitZoom=000.98
VirtualZoom=001.00
TowerZoom=008.00
TrackZoom=004.00
SpotZoom=000.50
MapZoom=011.00
SpotDirection=128.65
SpotDistance=+000395
SpotTransitionType=Roll
SpotFastTransition=False
SpotAltitude=+000091
PanHeading=360.00
PanPitch=360.00
PanBank=360.00
ChaseTarget=1

SavedViewMode=Cockpit

LINKS:

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