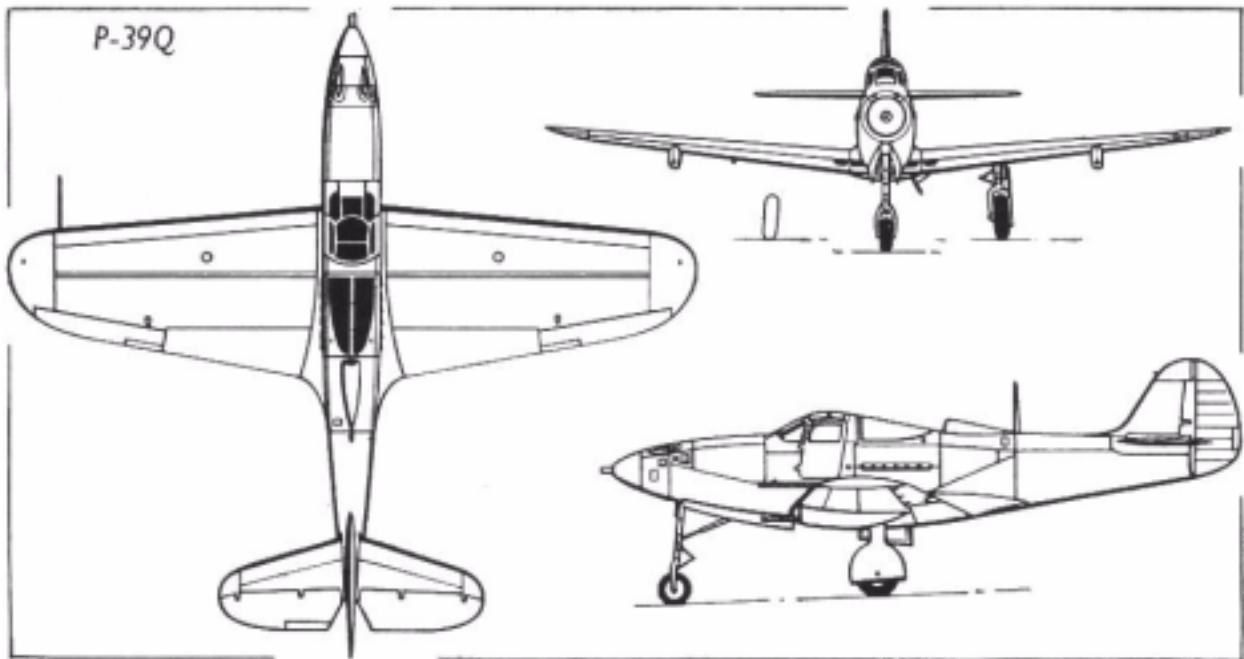


**Col. Gibbon's**

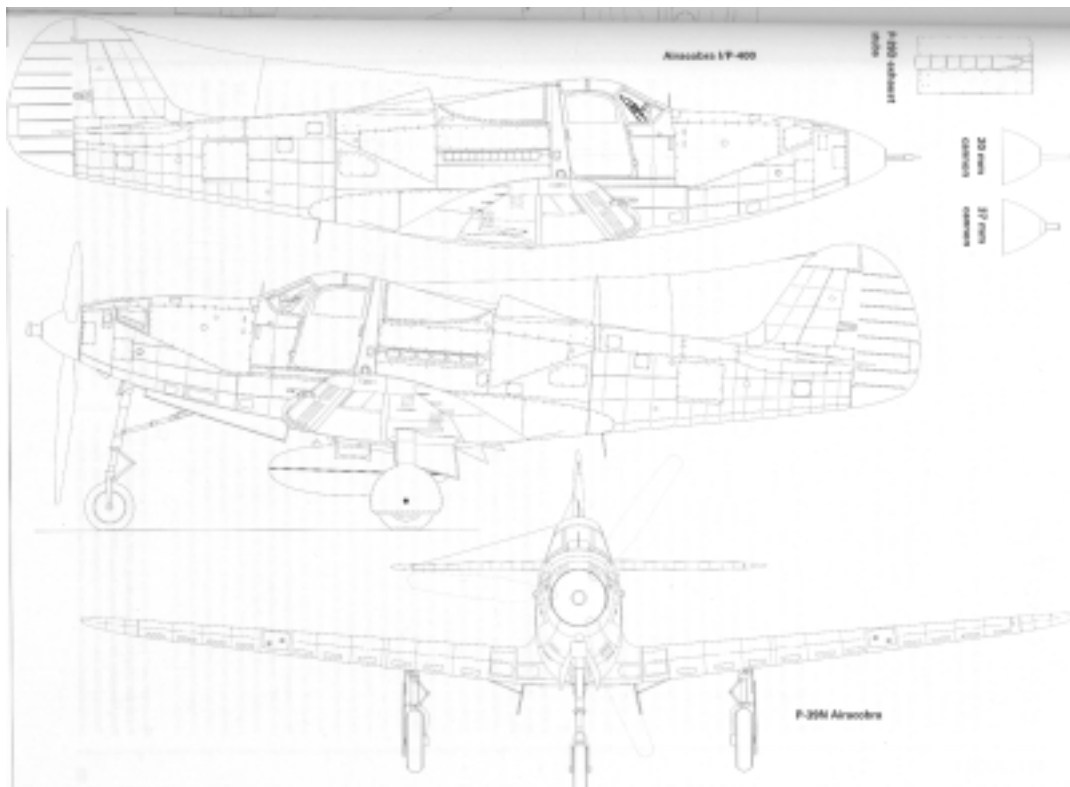
**High Resolution  
Model and Skinning  
Guide**

I thought I might write a Readme on how to make a new base HR skin. I must admit I looked long and hard at doing a conversion of other skins, but I found them to be so difficult to adapt to our 3dz's, it was much better to start from scratch.

Now, some of you might find this drawing good enough, but really it's only good for panel lines, and not much else.e.



This is a scale drawing, which I used for the basic P39 skin, which has a much higher level of detail.

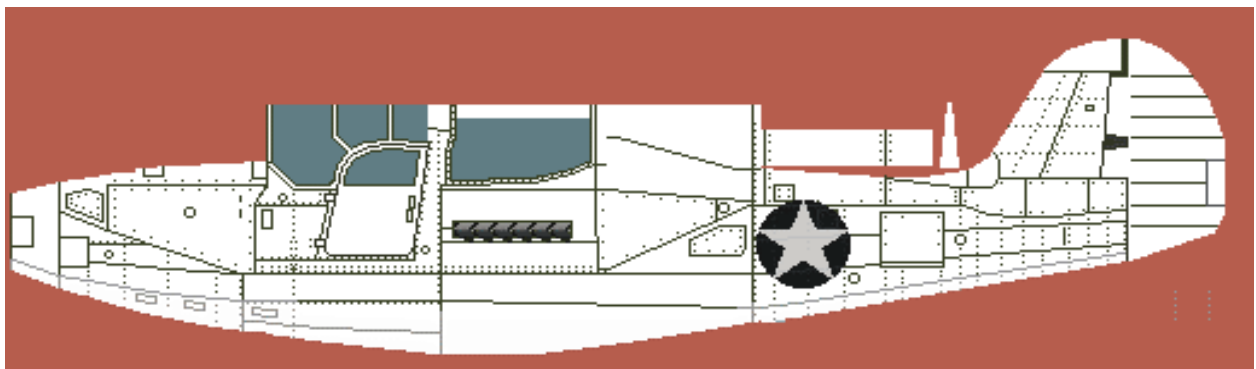


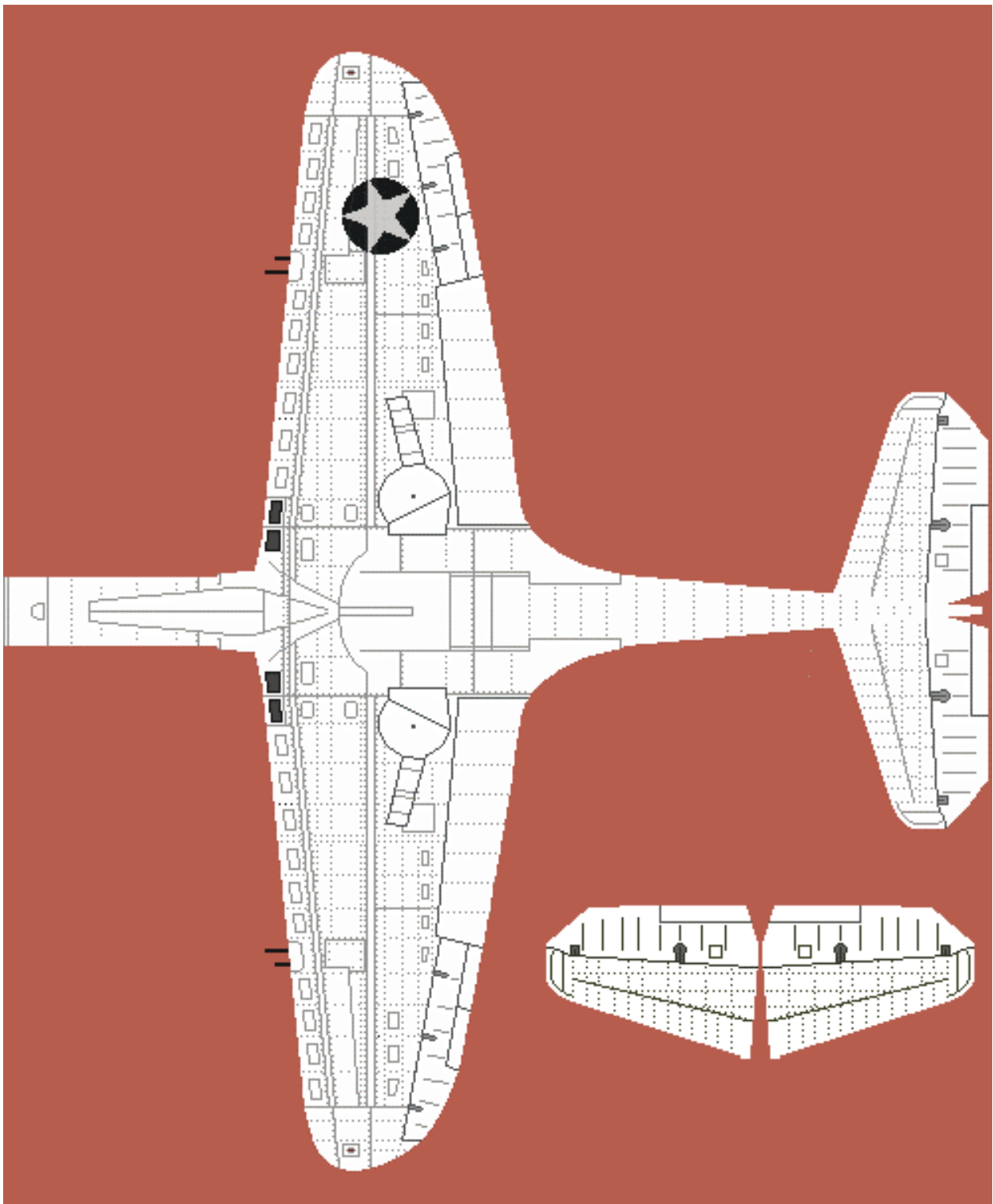
Firstly you must find out what scale you can map at. Checking the length and wingspan of the plane your working on does this. Most times the wings are the largest part of the plane so this will be your limiting factor, as the length of the plane can normally be split up into 2 or 3 parts.

As in the case below you will see the P39's wing is 98 points wide. You need to make a small calculation, which is as follows. The largest PCX is 256 points, so, try to find the largest factor to multiply 98 by to get as close, but not larger than 254. Although  $2.59 \times 98$  will give you 253.82, I would recommend you use a slightly smaller number like 2.50, which would use 245 PCX mapping points.

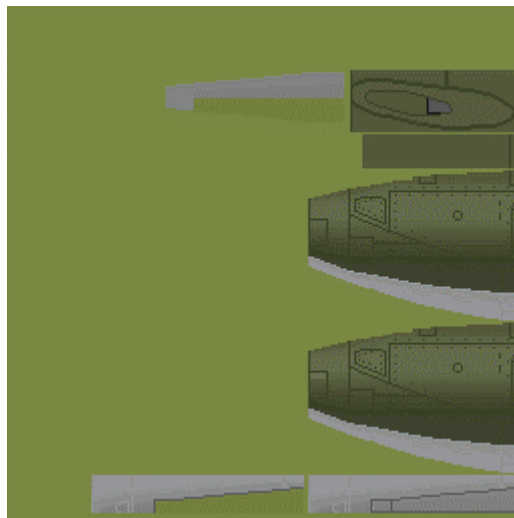
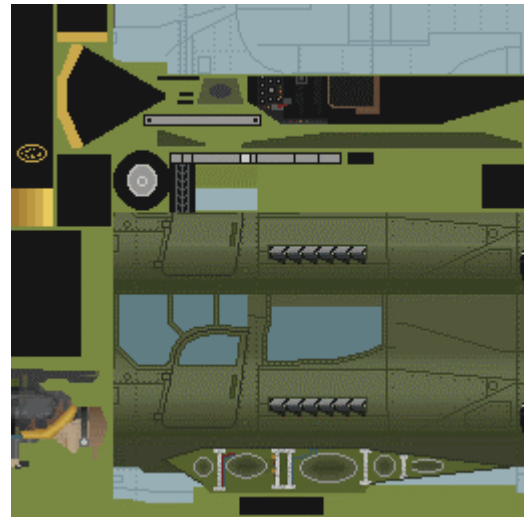
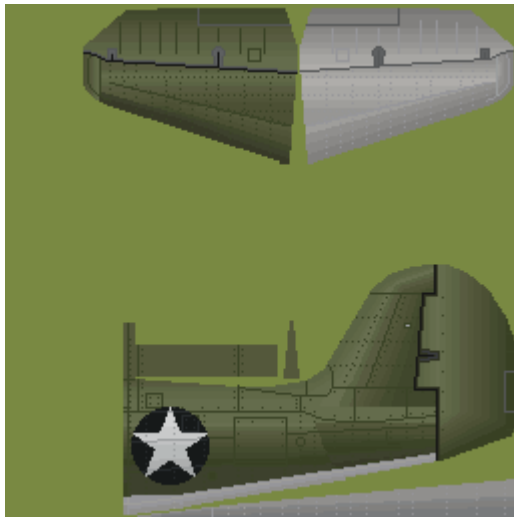


Once you have this figure you can then re-scale the large drawing to a corrected mapping scale. To do this performs the same calculation for the length of the plane and create a blank PCX to that size. In the case of the P39 this was 500 X 500. I then cut and re-sized to fit sections of the drawings. Note you must cut and paste the whole length of the plane without the spinner, and you must do this very accurately. Once you've done this you can then start painting the skin using the basic outline you now have. There should be enough detail left, for you to be able to see rivet lines, panels, ECT. I painted in all of the detail first, before applying any colours.





When you have finished painting the basic skin, you can the cut and paste parts of it into the normal 256 X 256 PCX's, and start mapping, using 3dz Studio.



At this point your original calculation is important again, as the entire mapping your going to do will be calculated by that factor. 1 EAW 3dz point, X your factor, will equal \*\* on the PCX ( $1 \times 2.5 = 2.5$ )( $2 \times 2.5 = 5$ ) and so on. You will have to decide to round up and down, but at this new resolution that. 5 of a point one way or the other don't make much difference.

Once you have mapped the whole model you should have something like this!



A word about areas of the model, which don't fit the drawing, you have. This is because the drawing is correct and the 3dz aren't! You can reshape the 3dz using the mapping, by reverse calculating using your factor, and in this way you will correct the shape of the 3dz. Having a large number of free 3dz points to use, you will find making rounder wings and tail are not a problem to do.



Anyway I hope you guys find these notes of some use along with my other notes on making the 3dz files.

This is a very simple, step by step guide to how to convert a Standard res single engined 3dz into a HR 3dz set.

I have based this readme on the work done by Moggy, and Chompy, plus my own work on converting planes to HR.

There are many ways to break up a 3dz to obtain a HR model, and their differences in my approach to the problem, as to the way Chompy and the others have done Thiers, but it works for me.

## What you will need.

3DZ Studio and Text Converter, and Picpac,  
you can find this @ Alessandro's site <http://www.geocities.com/alessandroborges/index.htm> (Studiobase.zip)

A Hex Editor program.

Some good reference 3 elevation drawings to make the basic skin from.

Good colour profiles, or photographs to paint the skin from

A good graphics program like Paint Shop 6 or Adobe Photo Shop.

I'm assuming you have had some experience with 3ds Studio so I won't go into detail in how to use the program.

[illegible]

## STAGE 1 Removing the Wings.

Starting with a PxxxF 3dz, which you wish to convert to Hi-res.

Convert it into a text file using the Text Converter program in 3dz Studio,  
By either dragging and dropping it over the program icon,  
Or by clicking on the program and selecting option A, and typing in the file names.  
Once you have a text file, open it and you can start work on deviding up the model.

Look at the codes firstly in the Elements section,  
These are in the lower section of the converted text file.

```
E000= 148 0 5 4 33 87 89 39 129 89 38 129 83 34 87 83 0 159 255
E001= 5 8 13 99 114 10 134 122 11 99 124 16 89 124 17 84 124 14 70 124 9
58 119 15 70 114 0 223 255
E002= 149 0 5 4 230 87 83 231 129 83 232 129 89 134 87 89 0 159 255
E003= 6 3 19 72 1 22 89 10 21 89 1 0 5 255
E004= 146 1 6 4 125 76 202 126 99 202 127 99 194 128 82 190 0 16 255
E005= 151 1 5 3 66 232 184 14 251 188 67 232 166 0 213 255
E006= 152 1 5 4 120 232 188 160 232 184 118 251 188 121 237 188 0 213 255
E007= 2 10 217 255
E008= 2 1 222 255
E009= 2 2 223 255
E010= 2 3 224 255
```

148/149/151/152.

```
E000= 255 148 0 5 4 33 87 89 39 129 89 38 129 83 34 87 83 0 159 255
E001= 5 8 13 99 114 10 134 122 11 99 124 16 89 124 17 84 124 14 70 124 9
58 119 15 70 114 0 223 255
E002= 255 149 0 5 4 230 87 83 231 129 83 232 129 89 134 87 89 0 159 255
E003= 6 3 19 72 1 22 89 10 21 89 1 0 5 255
E004= 146 1 6 4 125 76 202 126 99 202 127 99 194 128 82 190 0 16 255
E005= 255 151 1 5 3 66 232 184 14 251 188 67 232 166 0 213 255
E006= 255 152 1 5 4 120 232 188 160 232 184 118 251 188 121 237 188 0 213
255
E007= 2 10 217 255
E008= 2 1 222 255
E009= 2 2 223 255
E010= 2 3 224 255
```

Check the file in 3dz Studio, and you should have a plane with no wings.

[illegible]

## STAGE 2 making the wing 3dz's.

You do this by doing the same as with deleting the wing sections, that is, to add 255 at the start of every element line, and save the note pad as basic.txt.

```
E000= 255 148 0 5 4 33 87 89 39 129 89 38 129 83 34 87 83 0 159 255
E001= 255 5 8 13 99 114 10 134 122 11 99 124 16 89 124 17 84 124 14 70
124 9 58 119 15 70 114 0 223 255
E002= 255 149 0 5 4 230 87 83 231 129 83 232 129 89 134 87 89 0 159 255
E003= 255 6 3 19 72 1 22 89 10 21 89 1 0 5 255
E004= 255 146 1 6 4 125 76 202 126 99 202 127 99 194 128 82 190 0 16 255
E005= 255 151 1 5 3 66 232 184 14 251 188 67 232 166 0 213 255
E006= 255 152 1 5 4 120 232 188 160 232 184 118 251 188 121 237 188 0 213
255
E007= 255 2 10 217 255
E008= 255 2 1 222 255
E009= 255 2 2 223 255
E010= 255 2 3 224 255
```

Then taking away the 255 check at every line which has 148, and 151, and save this as PxxxxE.txt.

```
E000= 148 0 5 4 33 87 89 39 129 89 38 129 83 34 87 83 0 159 255
E001= 255 5 8 13 99 114 10 134 122 11 99 124 16 89 124 17 84 124 14 70
124 9 58 119 15 70 114 0 223 255
E002= 255 149 0 5 4 230 87 83 231 129 83 232 129 89 134 87 89 0 159 255
E003= 255 6 3 19 72 1 22 89 10 21 89 1 0 5 255
E004= 255 146 1 6 4 125 76 202 126 99 202 127 99 194 128 82 190 0 16 255
E005= 151 1 5 3 66 232 184 14 251 188 67 232 166 0 213 255
E006= 255 152 1 5 4 120 232 188 160 232 184 118 251 188 121 237 188 0 213
255
E007= 255 2 10 217 255
E008= 255 2 1 222 255
E009= 255 2 2 223 255
E010= 255 2 3 224 255
```

```

;P000=  _y  _z  _x  _b
P000=  -7   4 -90   0
P001=  -7  -4 -90   0
P002=  -4   8 -90   0
P003=  -4  -8 -90   0
P004=  -9   5 -78   0
P005=  -9  -8 -78   0
P006=  -6   9 -78   0
P007=  -5 -14 -78   0
[END]

```

Go to the end of the Points section and type in an extra line, with all zero's in the columns

[POINTS]

;P000=    \_y    \_z    \_x    \_b

P000=   -7    4  -90    0

P001=   -7   -4  -90    0

P002=   -4    8  -90    0

P003=   -4   -8  -90    0

P004=   -9    5  -78    0

P005=   -9   -8  -78    0

P006=   -6    9  -78    0

P007=   -5  -14  -78    0

Pxxx=    0    0    0    0

[END]

Very important make sure all the zeros line up with the other numbers in the rows.

Next go to the Header section at the top of the file.

[HEADER]

INI=179

TEXTURE=PSP09TEX.PCX

PARTS=4

POINTS=238

ELEMENTS=249

; place here the preview bitmap file's name. Useful to 3dz library

PREVIEW=

[END]

Change the number of Points by + one.

[HEADER]

INI=179

TEXTURE=PSP09TEX.PCX

PARTS=4

POINTS=239

ELEMENTS=249

; place here the preview bitmap file's name. Useful to 3dz library

PREVIEW=

[END]

Now, go to the elements section and locate the two wing tip elements which you noted earlier.

For the PxxxE.3dz write in the following

Exxx=  2 28 xxx 255 148  0  5  4 33 87 89 39 129 89 38 129 83 34 87 83  0  
159 255

(xxx) this is the line number in the point's section for the point you added earlier.

```
Exxx= 2 29 xxx 255 149 0 5 4 230 87 83 231 129 83 232 129 89 134 87 89 0
159 255
```

(xxx) this is the line number in the point's section for the point you added earlier, and is the same as the one above.

The last thing to do before converting the file to a 3dz is to go to the Normal's section

[NORMAL]

```
;N000=  _y0  _z0  _x0  _d  _c  _f
Nxxx= 11585 -11585    0 4657    7    0
Nxxx= -16384    0    0 -16384   -3    0
Nxxx= -2201 -15654 -4304 24134   -8    0
Nxxx= -1676 -15516 -4985 18300   -8    0
Nxxx= -1936 -15105 -6042 25575   -9    0
Nxxx= -14603 -7301  1369  7225   -3    0
Nxxx= -12793 10235    0 -26579   -2    0
```

and add -32768 to the two same line numbers in the Normal's sections as you did in the Elements section, in column "F"

[NORMAL]

```

;N000=  _y0  _z0  _x0  _d  _c  _f
Nxxx= 11585 -11585    0 4657   7   0
Nxxx= -16384    0    0 -16384  -3   0
Nxxx= -2201 -15654 -4304 24134  -8 -32768
Nxxx= -1676 -15516 -4985 18300  -8   0
Nxxx= -1936 -15105 -6042 25575  -9   0
Nxxx= -14603 -7301 1369 7225   -3   0
Nxxx= -12793 10235    0 -26579  -2 -32768

```

Then convert the text file back to 3dz and drop the three files you now have into EAW, along with the original tpc.

You should see a plane with wings, but made from 3 3dz's.

[illegible]

## STAGE 4. Breaking the fuslarge up.

Once you have reached this stage you can divide the front and rear sections of the aircraft up.

To do this look at the F.3dz in 3dz Studio.

You will see the model has a number of straight vertical lines running the whole way around the plane.

These are the best points to cut the model, and in most cases this is directly behind the cockpit.

Make two lists of the entire element numbers in the two halves, front, which will become the PxxxxF.3dz and rear of the plane, which will become the PxxxxA.3dz, using 3dz Studio.

Also at this point make a note of the upper elevator element numbers, left, and right, as these will be used later to add further hard points to the model.

A note here about Hard Points. These shows up are red dots as seen in 3dz Studio, and should all be listed with the front section {PxxxxF.3dz}

Once you have a full list of each section, convert you new PxxxxF.3dz into a text file again,  
and make a second copy of the text file named PxxxxA.txt.

Working with your list, and the PxxxxF.txt, firstly add 255 to each Element line, which appears in your rear section list,  
just the same way as we did to remove the wings.

Again from your notes, find the two upper elevator element lines.

Add the following, at the beginning of the line for the Left side

Exxx= 2 25 xxx 255 5 4 33 87 89 39 129 89 38 129 83 34 87 83 0 159 255  
(xxx) this is the line number in the point's section for the point you added earlier, to add the wings.

Add the following, at the beginning of the line for the Right side

Exxx= 2 26 xxx 255 5 4 33 87 89 39 129 89 38 129 83 34 87 83 0 159 255  
(xxx) this is the line number in the point's section for the point you added earlier, and is the same as the one above.

And as before go to the Normal's section and -32768 to the two same line numbers in the Normal's sections,  
as you did in the Elements section, in coloumn "F"

Convert your text file back into a PxxxxF.3dz.

Check the 3dz in 3dz Studio, and you should have a complete front section PxxxF.3dz.

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## STAGE 5 Making the Rear section 3dz.

Starting with the PxxxxA.txt file you made earlier, and working with you list, add 255 at the beginning of each element line of your front section, including all the Hard Points.

Once you have done this convert the file into PxxxxA.3dz.

Later the PxxxxA.3dz will it's self be split into two 3dz's A and B, but we will do this after re-mapping the model.

If all the files look correct, copy them into your EAW main file and check them in the game.

XX

If the file fail to load in 3dz Studio, the text file has errors in it.  
You have maybe made typing mistakes, extra spaces, or not enough, or wrong number entered in a line,  
which cause the game and 3dz Studio to crash.

If you have made some mistakes, and holes have appeared in the model, this is because you have accidentally deleted an element which you should not have.

Then remove the 255 check from the element in the text file you used to create the new 3dz from,  
and convert the file one again to a 3dz.

Rendering sequence problems is a tricky subject to enter into, and my best advice is to seek further help on the forum.

[illegible]

the longest part of the model is the restricting half, as you cannot map to any more than 254 PCX points.

If you have a 3dz with 110 points long, the scale for mapping would be 2.3, as this would map the 3dz to 253 points on the PCX.

then add the number of points from the smaller 3dz to the larger, lets say  $93 + 110 = 203$   
 $\times 2.3 = 466.9$ , call it 467.

using your Paint program, make a blank page 467 X 467,  
and carefully cut and resize the top view, of the drawing, of the plane your making.  
A note: When you cut the drawing do not include the spinner,  
but take it from the exact end of the tail to the end of the engine cowl,  
and include both wings.

Do the same for the lower view, and both sides, using the same size blanks.

Doing this you will create a scaled down drawing, from wich you can paint a master skin from.

Once you have painted your master skins, you can then start to assemble your PCX files for mapping the model.

I always start with the front section first, the Pxxxxtex.pcx.

Cut and paste on the left side of the front section onto the PCX.

the position of the first part of the plane can be sometimes a bit tricky,  
but if you normally place it near the bottom of the PCX then you will have space to add  
the other side

Do not further reduce the size of the drawing, or you will never get the part to match up again.

[illegible]

## STAGE 7 Now you can start mapping.

Using the scale we calculated earlier, in this case being 2.3, recalculate the mapping by this factor and starting from the front of the engine, recalculate each element in order of adjoining.

You will find it very useful to keep a sort of map on a piece of paper while doing this job, as it is easy to get lost.

If you look at some PCX files for other HR models you will soon see how the layout of the PCX's can differ,  
so it's up to you to work out the best way to make things fit.

Your other new 3dz's all need to have the file pointers changed at this time, because they are all looking at the TEX.pcx.

To change this you can use the text editor, convert the file to text, and change the file like this:

```
[HEADER]
INI=179
TEXTURE=PSP09TEX.PCX
PARTS=4
POINTS=239
ELEMENTS=249
; place here the preview bitmap file's name. Useful to 3dz library
PREVIEW=
[END]
```

to

```
[HEADER]
INI=179
TEXTURE=PSP09EEX.PCX (in my case this I use for the E.3dz)
PARTS=4
POINTS=239
ELEMENTS=249
; place here the preview bitmap file's name. Useful to 3dz library
PREVIEW=
[END]
```

Or you can open the 3dz file using a Hex editor, and change the ANSI text to suit your PCX's

You can use any other name you like, but these are how I do mine.

PxxxxA.3dz - left Tail section.  
PxxxxB.3dz - Right tail section.  
PxxxxC.3dz - Free to use.  
PxxxxE.3dz - Right wing.  
PxxxxF.3dz - Front section of fuselage, both sides.  
PxxxxG.3dz - Left wing.  
PxxxxH.3dz - Shadow.  
PxxxxM.3dz - Medium distance model (old f.3dz)  
PxxxxP.3dz - Propeller  
PxxxxS.3dz - Long Distance Model  
PxxxxU.3dz - High res cockpit wing views  
PxxxxY.3dz - Cockpit Prop view.

Texture files:

Pxxxxaex.pcx/tpc - texture file for A.3dz  
Pxxxxbex.pcx/tpc - texture file for B.3dz  
Pxxxxcex.pcx/tpc - texture file for C.3dz  
Pxxxxeex.pcx/tpc - texture file for E.3dz  
Pxxxxgex.pcx/tpc - texture file for G.3dz

Pxxxxmex.pcx/tpc - texture file for M, & S.3dz's  
Pxxxxtex.pcx/tpc - texture file for C, H, P & Y.3dz's  
Pxxxxtra.pcx/tpc - transparency info for F.3dz  
Pxxxxuex.pcx/tpc - texture file for U.3dz

On most models I don't have to use a Canopy 3dz, but I always have the B.3dz to use for this, or another mod.

For further information on this subject take a look at my HR skin Readme included in this zip file.

XX

## STAGE 8

Once you have fully mapped the model you can split the tail in to seperate halves.

Simply list as you did before the two halves, using 3dz Studio.

Convert your fully mapped PxxxxA.3dz into a text file again, and working with your list create,

as we've done before to files from one.

Keep the left side 3dz as the PxxxxA.3dz and name the right side PxxxxB.3dz, and create a PCX file for it.

Because we added the hard point for the B.3dz earlier, there is nothing further to do.

With all the new 3dz's and PCX files in the game, you should now have a finished HR Plane.

[illegible]

3dz names and codes.

```
P****A.3dz  attaching code = 25
P****B.3dz  attaching code = 26
P****C.3dz  attaching code = 27
P****E.3dz  attaching code = 28
P****G.3dz  attaching code = 29
```

XX

**By John ( Col. Gibbon) Graham.**

**19th April 2003**