



AEROFly PRO *Deluxe*
OUR STATE-OF-THE-ART RC SIMULATION



www.rodeo.onlinehome.de

Workshop

for the

AFPD graphics converter

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***Note: This is not an official document by Ipacs,
but just a manual by an independent,
enthusiastic AFPD user.***

Purpose:

When you finished the 3D construction and texture covering of your model within Metasequoia LE 2.1, the data have to be converted into the Ipacs simulator format. It creates an OBJ file, which can be used for easyfly, piccofly and aerofly professional (afpro), as well as aerofly professional deluxe (AFPD).

1. Get the converter

The converter is free. But you have to send an email to Ipacs to get a personalized version. Specify your full name and address and send an email to mail@ipacs.de to get the program.

2. Preparation

Within Metasequoia LE 2.1 save your work as usual as MQO file to keep the original data. Next step is to save in a special file format:

File - Save as - Filetype DoGa CGA System (*.suf).

Use the standard settings for axis:

DoGa CGA System	
Flip right and left	on
Invert Face	off

Use the standard settings for SUF Options:

Attribute file	on
Normal	on
UV Mapping	on

You can already influence the size of your aircraft with the size options.

I suggest to start with

Multiply	1.0
digits	3

This step will save 2 files called 'Modelname.suf' and 'Modelname.atr'. I suggest not to use blanks or any special characters for the name. Also restrict length to max 12 characters. Follow these suggestions also for the attached bitmap file names.

3. The converter

The converter is a command line program called convert.exe.
So we need to open a command window to execute the program.
Before that you have to copy the convert.exe into your data directory .
Keep the path structure short to make it easy.

Example: Create a directory c:\mymodels.
It must contain the .SUF, .ATR, convert.exe and optionally all attached bitmaps.

Open a command-window.
Start – execute – cmd

Short excursion for command window operations:

You can change disk drive letters by typing in: c: <enter> or d: <enter>

You can change directories by these commands:

<i>cd\ <enter></i>	<i>jumps back to root of disk drive</i>
<i>cd panorama <enter></i>	<i>jumps forward to specified directory</i>
<i>cd.. <enter></i>	<i>jumps 1 directory backward from current position</i>
<i>cd\panorama <enter></i>	<i>jumps directly to specified directory</i>

You can also copy the path from windows explorer:

Mark the path in the windows explorer, right mouse click – copy.

Right click into DOS window – paste.

Now you only need to change the drive letter to the cd command

Example:

Start – execute – cmd

c:\ <enter>

cd\mymodels <enter>

Enter this command line:

convert Modelname scale 0.001 <enter>

This translates the .SUF and .ATR files into an OBJ file.

Do just enter the name without an extension.

The scale 0.001 corresponds to the 3 digits we have used above.

That's all for the basics and you end up with an OBJ file ready to use in easyfly, piccofly, aipro, AFPD.

4. Size calculations

Of course we should have an idea of the aircraft size BEFORE we load it into the simulator.

So open the .OBJ file with WORDPAD, search for the entry leftwing and check the second column of coordinates. Scroll through the data to find the approximate highest value.

```
#
# Object Leftwing
#
g Leftwing
texture rF86.bmp 1 1
ambient 0.90 0.90 0.90
diffuse 0.90 0.90 0.90 1.00
specular 0.60 0.60 0.60
shininess 0.20
f tnv
v -0.180910 0.908978 0.032917 0.545098 0.403922 -0.733333 0.898438 0.902344
v -0.186670 0.909041 0.028667 0.388235 0.309804 -0.866667 0.898438 0.902344
v -0.244340 0.998210 0.033915 0.356863 0.352941 -0.866667 0.937500 0.875000
```

In this example the max span of the leftwing is 0.998210, so nearly 1 m.

Your model will have about 2 m total wingspan.

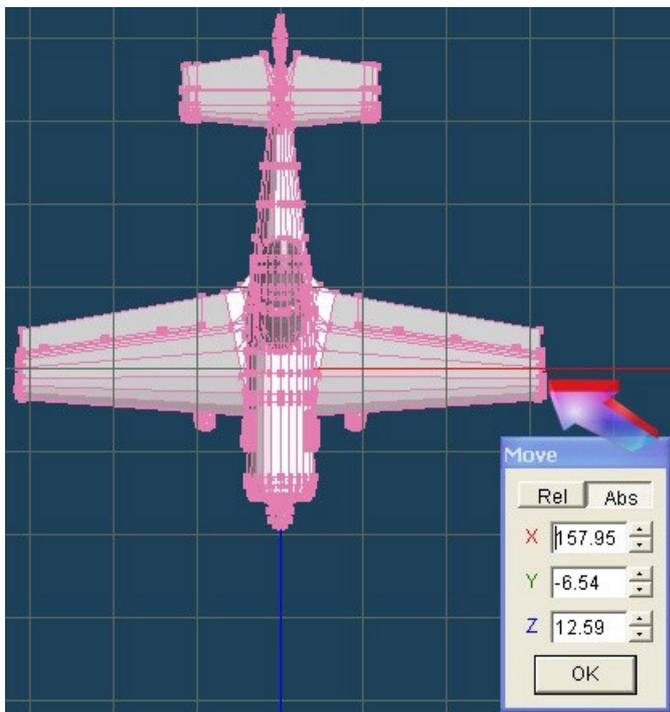
If the size does not give realistic values (they could be hundred times too large or 10 times too small for example) we have to use other scale factors during translation.

Generally the Ipacs simulators use metric dimensions for the model graphics.

1 m = 100 cm = 1000 mm

1 in = 2.54 cm

1 m = 39.37 in (100 cm / 2.54)



If you draw or scale your model in Meta already to your desired size, you don't have to take size calculations into account. Check the absolute coordinate values in Meta.

The x value displays 157.95, which is nearly 158 cm.

So expected wingspan will be
2x 158 cm = 316 cm

= 124.40 in (316 / 2.54).

5. New size

It's very easy to scale the aircraft up and down by a factor of 10, 100, 1000.
In your command window recall the last command with F3 key or the arrow keys and modify it as shown below:

convert Modelname scale 0.0001 <enter>

Now we have scaled it down by a factor of 10.
The reason is we used 3 digits for output, but we used 0.0001 as translation.
This is fast and easy, isn't it?
So with a combination of the multiply and scale factor we can produce any aircraft size.

Match a specific size:

Your command line was: **convert Modelname scale 0.001 <enter>**

Let's assume, your first run of the converter did create any irregular size.
Check the max span of leftwing as described in section 4 and find a value of 38.27.

Your desired wingspan is 2.54 m = 254 cm (100 in).
So the span of leftwing should be $2.54 \text{ m} / 2 = 1.27 \text{ m} = 127 \text{ cm} (50 \text{ in})$.

Calculation: Expected span / actual span = scale factor.

$$1.27 / 38.27 = 0.033$$

So rerun the converter: **convert Modelname scale 0.00033 <enter>**
That's it!

One more example:

Your command line was: **convert Modelname scale 0.001 <enter>**
The max span of leftwing is 0.0078.

Your desired wingspan is 2.00 m = 200 cm (78.74 in).
So the span of leftwing should be $2.0 \text{ m} / 2 = 1 \text{ m} = 100 \text{ cm} (39.37 \text{ in})$.

Calculation: Expected span / actual span = scale factor.

$$1.00 / 0.0078 = 128.2$$

So rerun the converter: **convert Modelname scale 0.128 <enter>**
That's it!

Now we look forward to see your aircraft in the sim!
Rodeo

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