GMAX: Anti-Aliasing Render + Post processing

A tutorial for more refined render results for filigree models

This tutorail gives a detailed and clear overview how to utilize the anti-aliazing script for GMAX to render models with very delicate details and receive a better looking result in SC4. It is written for advanced modelers who know how to use GMAX and are able to produce sc4models.

The Problem:

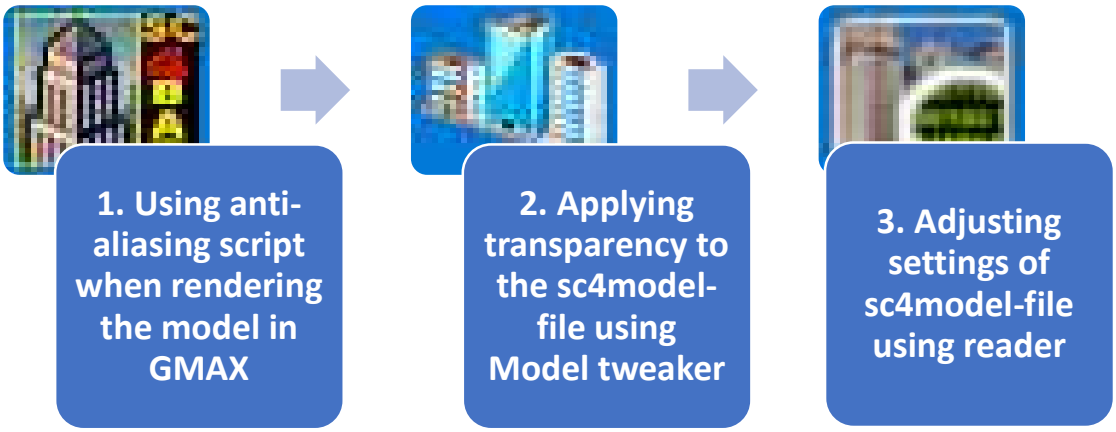
I realized that when modelling ships with very fine rigging, the thin lines that are rendered against the environment look very fat when zooming out in the game. After speaking with some of the graphics/gmax/modelling experts from our community this effect appears to be caused by the fact that the game is not really capable of displaying a high level of detail when zooming out because it is unclear how to colour the limited number of pixels to display such detail.

The picture below gives a great example for the effect described above: [1]

The model on the top is rendered with the standard GMAX HD script and when zooming out the rigging and antenna cables turn into a big smudge.

The bottom model has been rendered utilizing an anti-aliasing script and applying some post processing steps afterwards.

The Process:



[1] All screenshots in this tutorial come from a historic sc4 project and any ship flags have solely historic purpose and do not reflect political opinions. They are showcasing the episode of the 1890s-1920s in Europe and do not contain any prohibited symbols.

To get the full benefit of this step it is necessary to apply “transparency” to the sc4model file using tweaker. This step of the process does however create an invisible box around the model that blocks effects in the game. Therefore, a setting of the FSH files in the sc4model-file needs adjustment.

The following picture showcases the different stages of this process:

0. upper left: standard GMAX HD render
1. right: render with anti-aliasing script
2. lower left: render with anti-aliasing script and applying model tweaker transparency

Invisible boxes that appear in the game blocking effects like dust (from plopping and demolishing) or waves and ripple effects. These boxes need to be fixed.

The implementation:

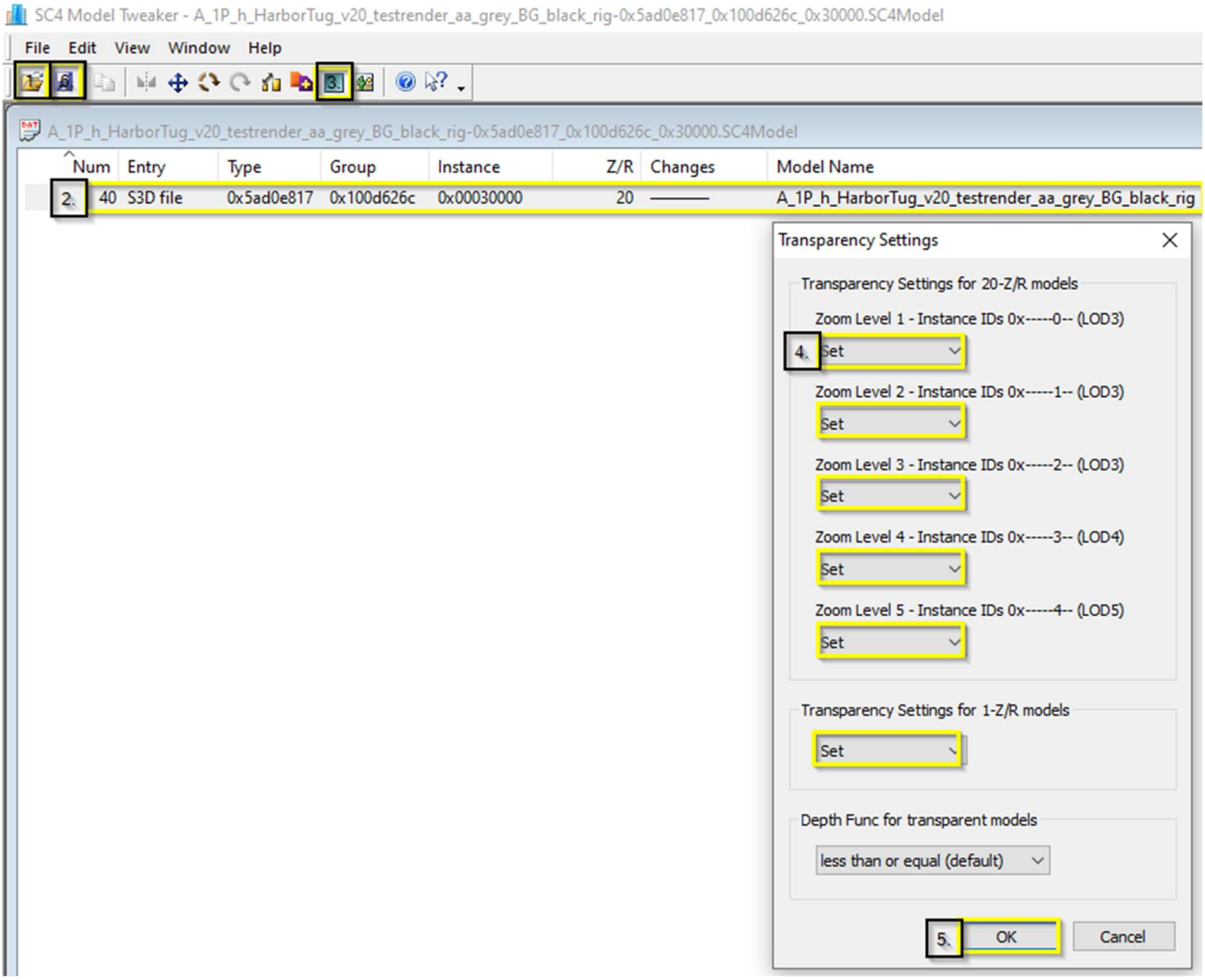
1. To run the anti-aliasing script in GMAX you have to replace the BuildingMill script in your *gmax/gamepacks/BAT/scripts/* folder. The script can be downloaded here:

   BuildingMill.ms

   It is advisable to keep a copy of the original script and follow the instructions on the forum post where you can download the file.

   Before rendering it is suggested to turn the render background into a medium grey. To do so you can enter the following in the command line (lower left) in GMAX and confirm with enter:
   backgroundColor = (color 90 90 90)

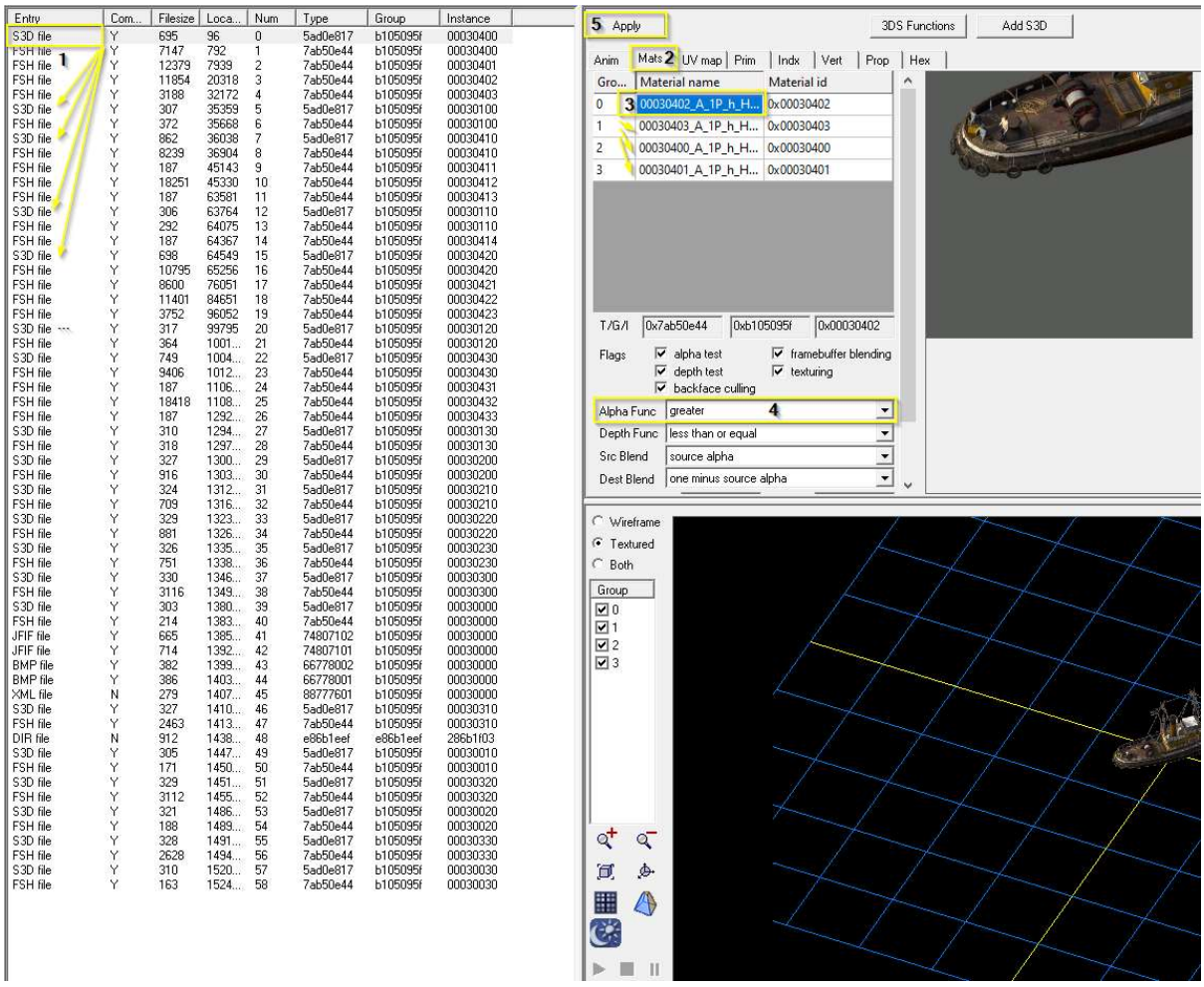
2. To apply transparency to the sc4model that has been created this way you have to open the sc4model-file that should have been created in your plugins folder with cogeo's model tweaker.



1. **Open** sc4-model file
2. Select opened model
3. Select **Transparency** (ALT+T)
4. Select option **Set** for all zoom levels
5. Confirm with **OK** (a confirmation box should pop up)
6. Save the adjusted model file

3. To solve the issue of the invisible boxes the sc4model-file has to be opened in ilive's reader next.

   Here you see a large list of entries on the left. We care about the S3D files which hold the information about the FSH files. There is an S3D file for each direction and zoom level.



1. Select the S3D file on the left (You will need to go through EVERY S3D file in this list)
2. Select the **Mats** tab on the upper right
3. Select the first entry in the **Mats** tab
4. Set the **Alpha Func** value to *greater* (You need to repeat 3. and 4. for every entry in the Mats list)
5. Klick **apply** on the top after you adjusted each entry in the **Mats** tab (continue with the next S3D file in the list on the left) The Mats tabs of different S3D files may contain a different number of entries, depending on the size of the model, the further out the zoom level, the less entries.
6. Save the sc4model file (not in this screenshot)

Now the model is finished and you should have very refined looking details in SC4!

Dedication:

This tutorial could be created after a lot of discussions with community members, personal messages and forum posts. The knowledge has not been acquired by me alone but through collaboration with others. I simply took some time to document these results and explain the process to enable more modelers to use this technique.

I would like to specifically mention and thank *Barroco Hispano* and *mattb325* for their expertise and support.

I may not be aware of all people who were involved developing these scripts and methods, so I apologize to anyone I forgot to mention here.

Barroco has used this technique or a similar one with 3dsMAX scripts for a while, that's why I personally call it *The Barroco Method*.

Finally, I would like to thank *Dreadnought* who is in a continuous collaboration with and supports me with advice and encouragement!