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Modelling

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Some can also be used with **PaintShop Pro**

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Forward

The grand design... Well, maybe not so grand; it really depends on how you view it. You may be wondering what I am even talking about here; thats a valid wonder, hell even a valid question. Modeling; specifically weapons modeling and design. Thats where the design thing came from... Here I am going to try to explain some methods for modeling a weapon, or pretty much anything of a mechanical nature. I am not going to go into organic modeling, not even going to touch on it; I am terrible at it, so I pretty much just pretend it does not exist. I am going to try to remain modeling package neutral, as in not specific to any one modeling package. I may make use of features not found in all packages, or use methods not easily done in other modeling packages. Do not e-mail me asking questions about your specific modeling package; its all a rumour that I use one, I make all my models the old fashioned way, with a text editor and a dxf file, ok so I may use a modeling package or two.... but not more than 2, or is it 3... never mind.

Preperations/ Notes

I assume you know how to use your modeling package, if you don't... learn how and read this again later. I will not answer questions about modeling packages, I will simply ignore you, no offense, I just don't have time for that.

So you need a modeling package you're familiar with, and competent in. You need some great reference pictures, if you don't have some, surf the net for them. Reference pictures are really the key for making a good model or a bad model. Even if you physically have what you're modeling, it is still good to have some pictures. You want a good profile of each side, and a good isometric or perspective shot. This way you can get a really good idea what the weapon looks like. If its a gun with complex moving parts, or any moving parts at all, its handy to have a movie where that gun is used a lot, so you can get an idea of how the gun works. So there you go, you should really have all that, especially the modeling package; as fun as modeling clay is, its no good for games. Really, I tried.

Basic Modeling

-2D shapes.

Here is one of the most basic, and most useful parts of weapons modeling. This is the stage that will get you your dimensional accuracy. This stage is where you will take your good profile mage and generate a series of 2D "loft shapes". A 2D loft shape is simply a 2D outline of a part of your model/weapon. The best way to go about doing this is to pick a top view, and place the

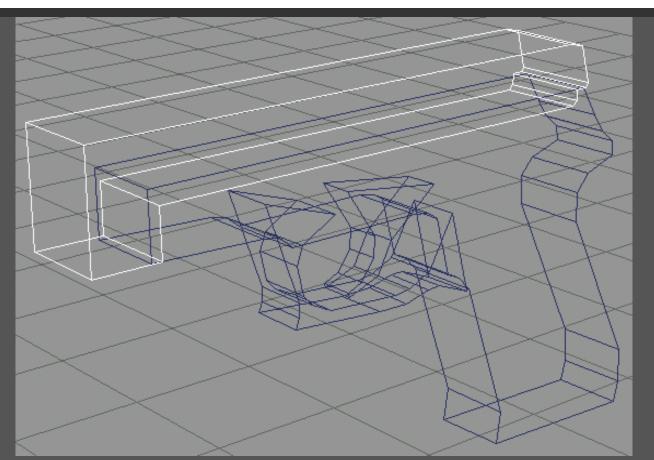
profile image of your weapon in the background (Most programs support this in one way or another, it may be you can do it directly, or you have to place a flat plane with the right texture map on it and real time render that viewport). You then take your 2D line tool, and trace the important features of your model, to create closed 2D shapes. This is where a good understanding of the real gun or object comes in handy; you want to divide the 2D shapes into seperate parts of the real thing, its hard to explain. Think of it this way, things that are seperate parts of the real object should probably be seperate parts on your model. Confused yet? Here is an image to attempt to illustrate what I am trying to get across. The red lines represent how I would divide up the gun into 2D shapes.



You can see that I would make several 2D shapes. 1 for the frame, 1 for the trigger guard, 1 for the trigger, 1 for the slide, and a couple of small details, the action break down lever and decocking lever. With that done you have a great basis to start any weapon or mechanical object model. You will save yourself work later if you try to use as few vertices as possible, or as little detail as possible during this stage. Try to make sure everything is lined up and square; I usually make the shapes, then tweak them afterwards.

-Lofting the 2D shapes.

This is the process of taking the 2D shapes from the previous step and turning them into 3D models for the first time. This step is almost as important as the last one, this stage is where you really define the basic thickness of the model's parts. If your making really really low detail models, or just don't care, this will be your final stage to modeling your object. Well its what is says, loft your object out into 3D; this is done by a loft tool a sweep tool or an extrude tool, all programs have one as far as I know (Excluding MS3D, which I do not consider a real program for modeling, simply a model tweaking tool). Heres what kind of result you will usually get:



Not very exciting, most people are happy with that sort of result, no matter how boring, or really ugly it is. I am not, the better looking the model is, the more happy the gamer will be, the more happy you will be. I suggest you move onto the next steps and techniques. Or you can move onto texturing your model, something I will cover in another tutorial, but not this one.

-Modeling with primitives.

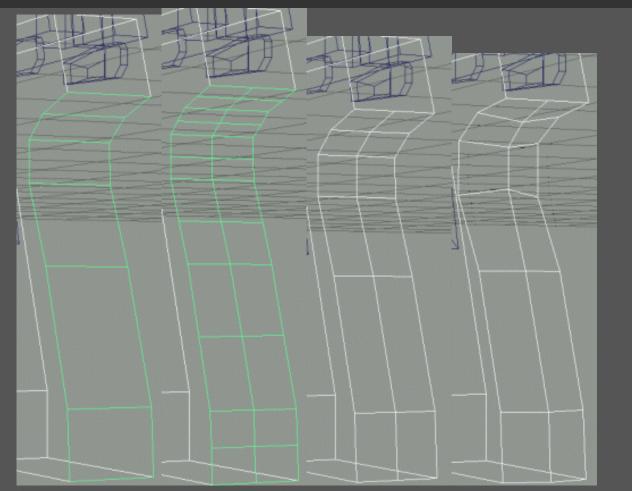
This is something I strongly suggest you do not do, as its much more difficult, and yields less pleaseing results, in my experience of course; there are some things that the primitves are useful for, such as barrels, sights, and other very simple shapes.

If you model with primitives, you will make use of the vertex, edge, and face manipulation tools your software offers, you will also make great use of the extrude and sweep features. This is a valid modeling method, and is much more useful for modeling things such as organic shapes in low poly. For weapons that need to be accurate, or detailed, I think this is an inferior method.

Advanced modeling methods.

-Surface subdivision and vertex manipulation.

This is the process of taking a face, or faces (Quad faces, not triangles) and diving them into 4 new faces, or splitting them into 2 faces. The software I use splits the face into 4 equal parts. If you do not know what vertex manipulation is, then you need to read your software manual. This process is useful when creating contoured shapes on your model. The below images show the basic process.



The first image shows the model with the faces selected that I intend to divide. The second image is after I applied the quad division. The third image is after I have deleted the edges I do not need, but retained the one down the middle of the origional faces. The fourth image shows the model after I adjusted the vertices around to create a contoured shape. This method is invaluable for many forms of detail. The below image shows many uses of this method.



cannot really think of a better way to explain this method, but needless to say, I use it on every weapon model I create in atleast one place. On the above image, I have used it atleast 5 times while making that model.

One aspect of vertex manipulation that can be over looked is welding 2 vertices together, therefore creating a single vertex, and usually eliminating some faces. When subdividing faces you will find that welding vertices together is a very desirable thing to do; so is deleting some edges. It really depends on the shape your wish to attain, and the amount of detail you want. It is important at all times to keep in mind that more detail means more poly's which means more of a performance hit on the game.

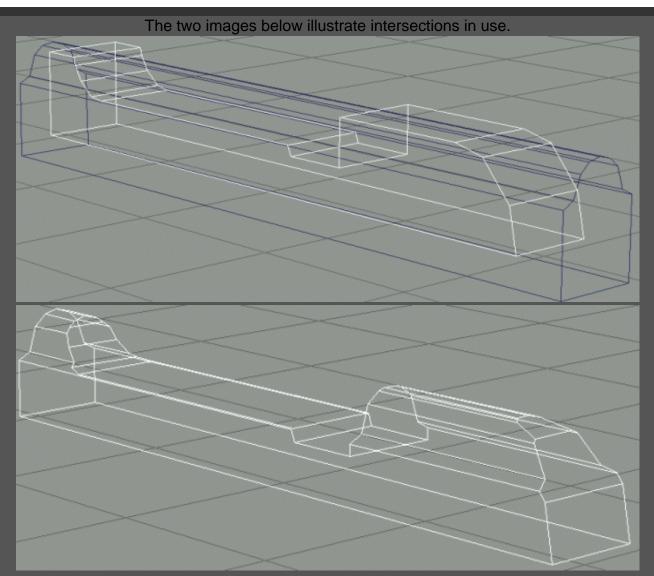
-Booleans

Booleans is the process of subtracting, intersecting or union together two or more solids. This is not necessary, and some programs handle this badly, but it is a very handy tool to use. Anything you can do with Boolean operations you can do with surface subdivision and extrusion's, but it is not always the easy way, and will almost always yield poor results and a lot

more time. Booleans are good for "cutting" out detail in a model, such as a the ejection port on a weapon model.

-Subtractions will be the most common boolean operation you perform; these are good for making slots, grooves, and any recessed detail on your model. Create your base model as outlined in basic modeling techniques, then actually model other parts (usually from primitives) to subtract from your model. Try to keep these parts to be subtracted as low detailed as possible.

-Intersecting is the process of taking two objects and leaving what ever intersected between the two of them. The best example of this that I can think of is the slide on a beretta 92FS pistol.



You can see the usefullness of this feature, but also its limitations as well. This is the least understood boolean tool, and probably the least used as well, but I find it more useful than union.

-Union is the process of actually fusing 2 or more objects together into one solid mesh. This is probably the feature I use the least when modeling, as I find it to be not terrible useful. Use of this tool, as with all the other boolean tools, require a lot of vertex welding and manipulation to keep the poly count low.

-Vertex, Edge, and Face manipulation

I have already touched on these subjects several times over the course of this tutorial, and cannot really add a whole lot. So here are some quick tips.

- Weld vertices together where ever you can, this helps reduce your poly count. Just do it, if you can eliminate vertices, then you cut down your faces, and its all good. Just do not sacrafice detail you need.
- Triangulate your model by hand in any place where the edges need to flow in a certain
 way, so as to say if the edge was turned the opposite way it would look wrong. I
 personally try to triangulate my models by hand almost fully. Even programs like 3DS
 Max that work in triangles this needs to be done to get your model just right.

Ok, thats all on that for now.

-Poly reduction

This is really something that is done once the model is textured and animated; but I will touch on it here. Delete every single face of your model that will not be visible in game. All of them should go. I am terrible for this, as when I animate models, you end up seeing all of it in one animation or another. The more non visible faces you delete, the more detail you can have on your visible faces. Welding vertices, reduces faces, and brings your poly count down. The more vertices you can weld together, the fewer polygons you have; this is an art, and really relys on experience to know when to do this sort of thing, so it takes time; removing edges, and vertices also works as well, but is another art form that requires experience. Play around with your model, experiement, see what works. This subject really demands a tutorial of its own, and this small little quip on it does not do the subject justice. I imagine I will break down and write a tutorial on this some time.

-Saving in revisions

This isn't a modeling technique, but is a good practive to get into. Save your work in revisions as you build a model. Everytime you make a major mesh change, save it as a new revision. This is for those times when you decide to use a method and when the model is done realise its no good; instead of restarting the model, you can go back to one of your previous revisions and start from there, fixing it from where it went wrong.

Final notes

Thats the end of the first tutorial. I know its pretty scattered and maybe not what you expected, but I refuse to write a tutorial that holds your hand and tells you exactly what to do when it comes to a topic like this. In the future when I need to, I will get into specifics, but not today. I hope that you find this tutorial helpful in some way, and don't just start sending me hate mail. I have given you the basics and some more advanced techniques on modeling weapons and other such things; this is all you need to know, the rest comes with practice and experience. Get out there and model.

If you are lacking a modeling program, I am nice enough to provide you with links to free or shareware modeling programs.

http://www.blender.nl/ - I have little experience with this program, but its free, and gives a lightwave like interface and modeling system.

http://www.caligari.com/ - Truespace 2.0 has been released free for download. I use Truespace 4.2, but I learned on version 2.0; still a good modeler.



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Forward

As per usual I am going to atempt to keep this tutorial as software package neutral as I can, but I find that I may be unable to do that this time, as almost all my experience in this regard is with a single software package, 3DS Max. I will still attempt to generalise and make the techniques I show here universal, but those people that use 3DS Max, or are learning it, will find this tutorial particularly usefull. I will actually use the 3DS Max tool names, as well as a description and generalisation. In theory you should be able to apply this tutorial to any software package that has the same basic functionality that 3DS Max has in these regards... Anyway, on with the show.

Preperations/ Notes

A 3D modeling package capable of doing per face UVW texture mapping, as well as multi materials (This refers to the abilty of the software to apply different texture maps to faces on the same mesh.) Knowledge of how your software works; I will not tell you how it works, so don't ask. I am only telling you the techniques to do specific things, you should know how to use your software package, atleast be familiar with the interface. I will ignore questions about software packages. You also need a paint program, and a way to do screen captures. I personally use Paint Shop Pro 5.1, which does screen caps in several different and usefull ways. Other good programs for 2D art include Photoshop, or Viscosity. Viscosity is a little known program, but is almost equal in functionality to Photoshop; Viscosity can be found at: www.jedor.com.

Basic Mapping

Planar Mapping

This is the really easy kind of mapping, and I will not even bother illustrating it with pictures. To map your model really basically, you pick the largest profile, or side. On a gun of some kind it would be a side. To this side you apply UVW planar mapping co-ordinates, in 3DS Max this is done with a UVW Maping modifier and then picking the right axis and fitting the dummy. With this done, you can apply a texture map; usually a picture. You can usually adjust the mapping coordinates with some sort of option such as UVW Unwraping, as with 3DS Max's Unwrap UVW modifier. This allows you to fit the mapping coordinates to the texture map. The results of this sort of texture mapping is usually not the greatest, is in fact usually pretty ugly unless you have gone to great lengths with your model to assure this does not look bad. The main pitfall to this method is that surfaces perpendicular to the axis of the mapping plane get the pixels at the edged smudged completely across them. It usually looks bad, and I have to admit I have done this more than once, usually when I am being lazy.

Cylindrical Mapping

This is the only other kind of basic mapping I will speak of. Cylindrical mapping is usually only useful for cylindrical objects, or objects that are almost equal in size in two dimensions. I use this to map barrels, and other such objects. Again, you apply cylindrical UVW mapping coordinates to your model, or part. In 3DS Max this is done with the UVW mapping modifier again; simply setting the axis and the mapping type to cylindrical. You then apply your texture map, which you have to imagine what it will look like wrapped around your mesh. Being able to edit the UVW mapping coordinates is handy to be able to do here again, same as above.

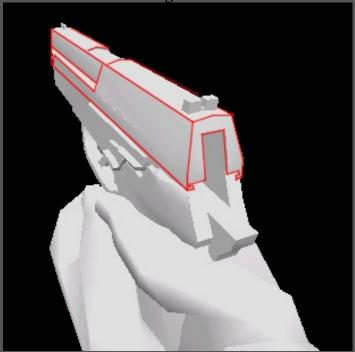
This is two very basic forms of texture mapping a model, and if you are happy with simple results, and are just playing around, this is all you need to know. Its that simple. If you want to do more, than read on.

Advanced Mapping

This section is probably going to get jumbled, so please try not to get too frustrated if something is not clear right away, I will almost certainly attempt to make it clear further on. I am going to cover the actual process of generating a texture map, instead of taking an image, and adjusting the mesh coordinates to it.

Break down your model

I don't mean literally break it down, but look at it and decide what faces can be mapped together, and what faces need a seperate texture map. So look at your model and figure out what faces will be visible in game, this is really important for view weapon models, but for world models, not so important, as in theory you can see all faces. I'll use a pistol model as an example again.

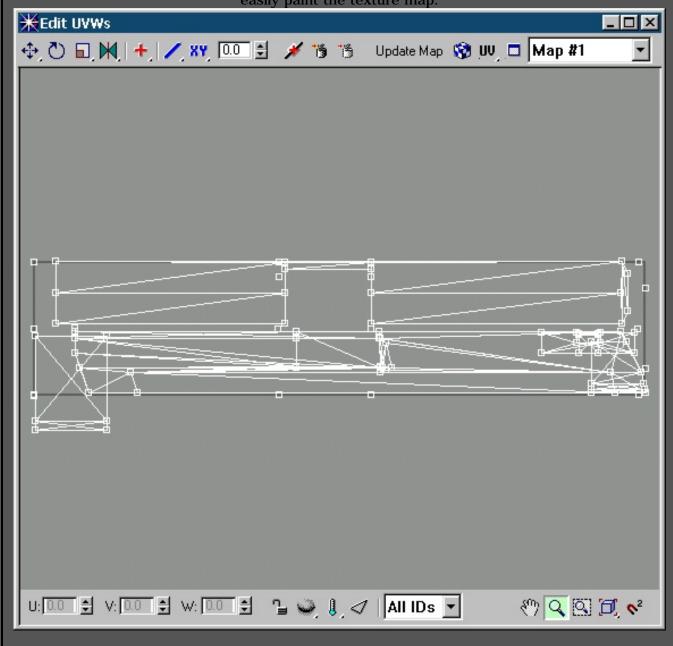


You will see above a pistol model smooth shaded. I have taken the liberty to highlight the major surfaces of the slide mesh. Its not very accurate, but sufficient to make my point. You can see that the majority of the faces on the side of slide could be grouped together and textured together. The top of the slide however could not be included in that group, nor could the back; if they were, then you would get some significant distortion of the skin. This is what we want to avoid. So we will map the side, the top and the back seperately, possibley on the same texture, but the faces will get their mapping coordinates seperately. The front of the model is not

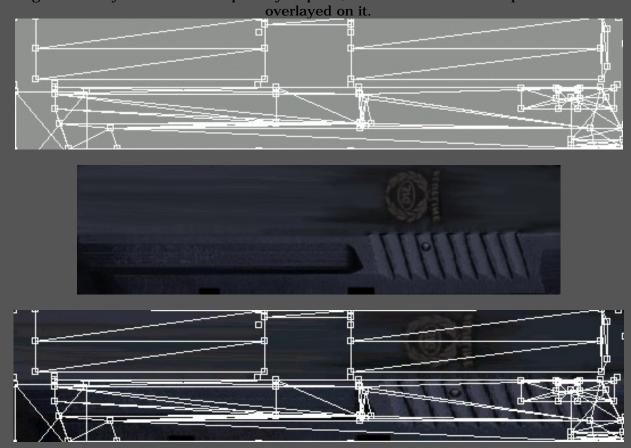
important, as it will not be seen, and if it is for some reason, than you would map it too. In most cases its better to not see the front of the model, you can just delete those faces and save some poly's.

Actually mapping it

Here you get the fun part, the meat of the tutorial. Well.. maybe its not so fun. You will use planar mapping almost exclusivly when performing texture mapping in this way. First select the faces you wish to map, this is done with a mesh select modifier or edit mesh modifier in Max; Other programs use some sort of a meh editing tool to select faces. Next apply the UVW mapping to it, be sure that the mapping plane is parrallel with the faces. Now do a UVW Unwrap, and take mapping coord's and move them off of the texture area for now. Now select the next set of faces you wish to apply mapping to, and repeat the last steps. When you are done, you must collapse the mesh, this is a Max thing, and I am not sure how to really explain it; I am sure it applies to other programs. When you collapse a mesh in 3DS Max it takes all you have done to it with modifiers, and turns it into a solid editable mesh. With this done do another UVW Unwrap, this time you will get the entire model's mesh map. If you followed the previous steps, then you will have all the mesh maps spread out so you can select and manipulate them. You want to take them and arrange them around within the texture area so that they all fit, and so that you can easily paint the texture map.



The above image shows the sides and the top of the slide shown above actually "Unwrapped" and layed out. To actually paint the texture now, you take a screen capture of the window, like the above image. You then crop it down to within the confines of the texture area (The dark line box around the mesh map) And you get something like you will see below. For completeness I am showing a blank layed out mesh map ready to paint, the finished texture map and the mesh map



I am not going to cover actually painting the texture map, thats up to you to find one of the thousands of tutorials on it.

Multi Textures

3DS Max has a great feature called 'mulit sub textures' which allows you to have several materials as one material. The great part here is that we can place different texture maps on the same mesh. This makes the above method slightly not so useful, but for games that only allow you one texture map, then you have to use the above method. For games like Half Life, Unreal Tournament, and Quake3A, this is not a problem. Half Life I think supports as many texture maps as you want to use, UT supports up to 10, and I am not sure about Q3A. You setup multi sub texture's in Max in the Materials panel. Select the material type, and set it to Multi Sub Object. Then create as many regular materials as you need. I am not sure how this would be handled in other programs. For Half Life you have to have your material as a MultiSubObject, even if you are only using one texture map, this is a limitation with the smd exporter plugin. With your multi sub object setup, you can start texture mapping your model. Take the above example, instead of have the top and side on a single texture map, I could have them as seperate textures; now this particular example is a poor one, as this offers no truely good advantage. To apply multi sub object mapping, select your faces, and before you apply UVW mapping, set the material number of the sub material, this assigns that sub material to those faces; now you can apply your mapping and do your thing with making the texture map as with above.

This comes in truly handy for games that limit your texture maps in some way or another. For example I have a weapon model for UT, and I want the texture to have a lot of detail, and since UT only allows me to have textures with dimensions of 256X256 at a maximum I cannot quite get all the highres detail I wanted. Well with MultiSubObject texturing I can, I just use 2 256X256 textures to texture my model. Or another example of this useful texturing method is when I want

to use certain texture over again, say the textures for a hand. With mulitsubobjects I can.

Conclusion

Ok. I know this is probably not the best explanation, but it is all correct, and a good way to texture your model. There are some scripts out there that do really great things, like ChilliSkinner. It actually takes your model apart and flattens it, applies planar texture mapping, and then reassembles your model into its 3D shape, with every single face mapped. Its a very good script, and one worth getting. I find it better for player models to tell the truth; for weapon models the best way I have found is the above method; especially if someone else is painting the texture map. As per usual, feel free to e-mail me about the tutorial, but not about your software package.

Appendix 1: Engine Texture Format limitations

Half Life

-No real dimensional limits
-Can only be 256 colours, though not palette specific.
-Do not go over board on texture maps, too many slow game performance; total texture size

should be under 200k -Must be a windows bitmap

Unreal Tournament

-Must be sized in multiples of 2 to a maximum of 256X256: i.e. 32X128, 64X64, 128X256, 128X128....

-Can only be 256 colours, though not palette specific
-Limit of 10 total texture maps per model
-Must be in PCX version 5 format

Quake3A

-Anything up to 256X256
-32bit colour depth
-Unknown total texture limit per model
-Must be in uncompressed TGA format

Tribes

-Must be 256X128
-Limited to 3 256 colour palettes
-Unknown total texture limit per model
-Must be in window bitmap format

Quake2

-Anything up to 256X256, though 600X200 seems to work
-Limited to a single 256 colour palette
-1 Texture per model
-PCX Version 5

Quake

-Anything up to 256X256, though 600X200 seems to work
-Limited to a single 256 colour palette
-1 Texture per model
-Deluxe Paint .lbm

Appendix 2: Links

ChilliSkinner The excellent Max Script, they also have some good tutorials on how to use it.

Jedor Viscosity You can download a trial version.

Jasc PaintShop Pro You can download a trial version.

Adobe Makers of PhotoShop, considered the best 2D art program

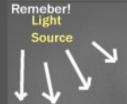


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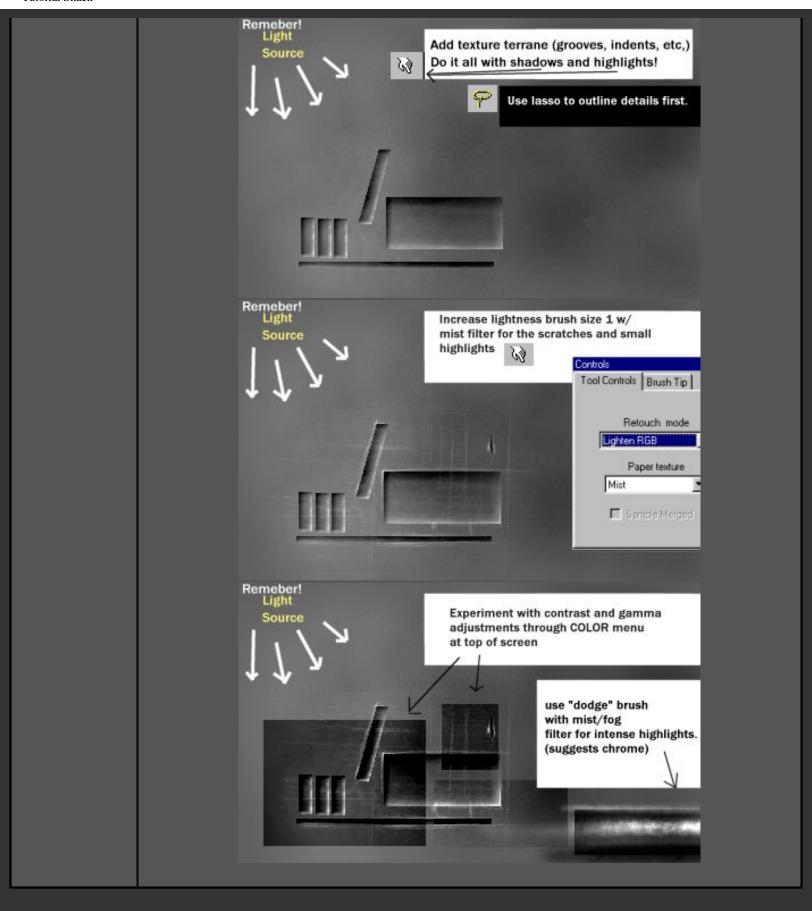
Basic Skinning - SixShooter

Note: This is SixShooter's **OLD** style and he now has a much better style This is purely up for reference, so new skinners can get as many viewpoints as possible

Start with straight grey...



Begin using LARGE, "fog" filtered increase + decrease lightness brushes





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BASE TEXTURE FOREGROUND COLOR: BACKGROUND COLOR: FILTER>RENDER>CLOUDS ADD NOISE -> 0.58 Blur once BASICS SKINNING TUTORIAL STEP 1 (BASE TEXTURE)

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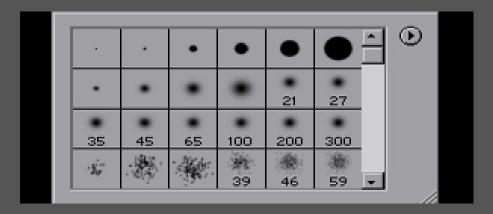


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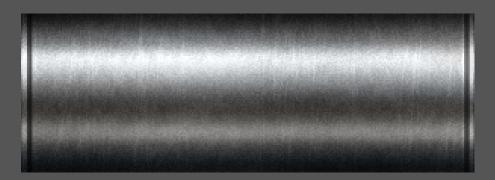
Metal Tutorial - Carbine

This tutorial was created for those of you who are lacking in the metal department. It requires some knowledge of Phtoshop. In this tutorial, we will be creating a brushed metal tube.

NOTE: I ASSUME YOU ARE USING THE STANDARD PHOTOSHOP BRUSHES.



The final product will look something along the lines of this...



<u>TUTORIAL-in this we will be creating a fatter tube than the one above</u>

1. Create a new image, 300x125 or so, and select Grey (47, 47, 47) and grey (57, 57, 57) as your two colors. Goto Filter>Render>Clouds. Your image should look something like this...

2. Next go to Filter>Artistic>Sponge, and set the Brush Size to 0, the Definition to 0, and the Smoothness to 1. It should look like this...

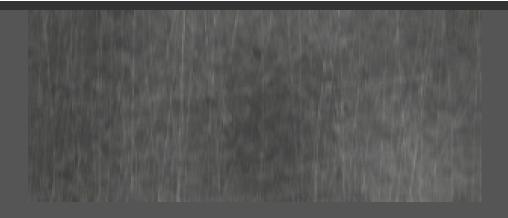


3. Select the Dodge tool, with a size 200 brush of 66% opacity, and the mode set to Highlight, and begin to make a few Dodges at random locations. After, select the Burn tool, with the same size brush, 100% opacity, and the mode to midtones, and create random burns. It should look like this...



4. Go to Filter>Blur>Motion Blur and set the Angle to 90, and the distance to 4.

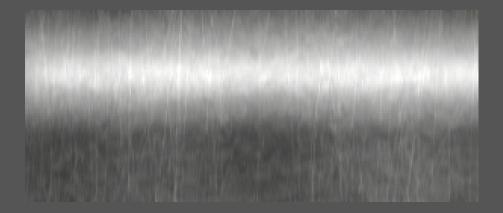
5. Go back to the dodge tool, and select the smallest brush possible, with an opacity of about 50%. Remember that Highlight mode is still on. Go crazy and make dodges with the brush until you image looks like this one...



6. Now comes the most important part. Be sure to follow these steps carefully.

Select the Dodge tool, and a soft 65 size brush. Set the mode to Midtones. Then, Holding SHIFT to make a straight line dodge, makes a dodge 4\5 from the top of the image. Do this dodge 3 times!

After that, set the dodge mode to Highlight, and set the opacity to around 75%. Your brush size should be 35. In the center of the dodged area, hold SHIFT and make one dodge. It should now look like this...



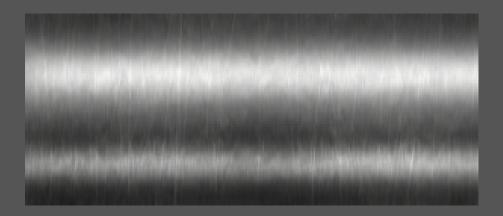
7. Set your dodge tool to Midtones mode. Bursh size 27, opacity 100%. Near the bottom, hold SHIFT and make one dodge line across the image.

Now set the dodge mode to Highlight, the opacity 50%, and the brush 21. Make a highlight line over the new dodge you have just made.it should look like this..

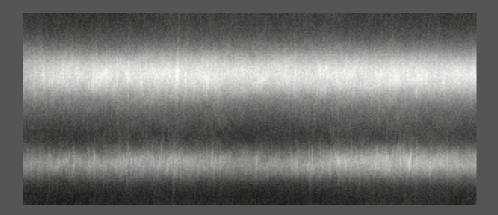


8. Select the Burn tool. Highlight Mode. Opacity 100%. Brush size 45. Make two burn lines

(holding down SHIFT to make a line) on both the top and the bottom of the image. Change your brush size to 65 and make a single brun line in between the two dodge lines. It should look like this...



9. Goto Filter>Noise>Add Noise. Set the amount to 3.5%, the distribution to Uniform, and the color to Monochrome. You are almost done! It will look like this...

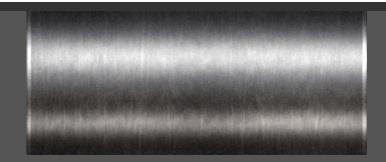


10. Press CTRL+B to access the color balance. In the 3rd Color levels box, type in "+5" (without the quotes) to give the metal a blue hue.

After that, select the paintbrush tool, set the brush to 65, the mode to Color, and the Opacity to 8% Color the lower half slightly with Brown (RGB: 105, 65, 20). It shoulg look like this.



11. Now we add detail. Select the line tool, set the mode to color dodge, and the width of the line to 3. Your foreground color must be changed to gray. On the sides of the image, make a vertical line. It should now look like this. (resized version)



WE ARE DONE!!! WOOT!! Now you can add whatever further detail you like to your secksi metal tube! Phew, I'm relieved. I wasn't sure I could remember all the steps:)

Have fun, and if you don't get it right the first time, try again!

Good luck,

~Carbine

P.S. I will expect payment from my readers by means of mansecks



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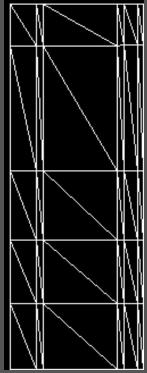
Skinning Metal - Willis

Visit Willis' Personal site

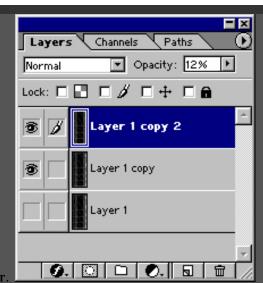
Ok this is a Tut by Willis on how to make metal. This may not be the best way to do it, but this is how I do it.

You might learn something and you might not, who knows. Also, I assume that anyone reading this has an intermediate working knowledge of Photoshop 6.

First, open your mesh. Mine will be of a clip.



What I like to do when I first start is to make a back up of the mesh so that if I screw it up, I will have the base to go back to, so make a copy of the mesh layer then make the backup layer invisible. Now make one more copy of the mesh. Now you have 3 new layers. The bottom layer should be invisible. Set the top layer opacity to 10 or somewhere around there. You will skin on



the middle layer.

I like to make the top layer transparent, so if you need to see where things are on the mesh after you have skinned them you can just pull that up and you can see it.

blah blah blah. Enough of that, let's get skinning.

On your middle layer select around the area you want to skin. Then pick a base color. It shouldnt be too dark, but my color that I picked is 44, 44 Fill your selection with that color.



That will be our base color for the clip.

Now we need to make it look more metallic. I like to go around the edge of the mesh with the burn tool.

Make your top layer visible so you can see the mesh through your color.

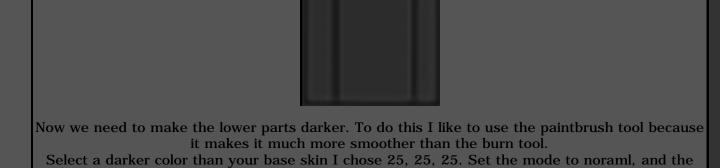


Now go around the edge with the burn tool set at range: shadows exposure at 19 or so. TIP: When making a straight line across the mesh either hold down shift to make a straight line or click and release then hold down shift and click where you want the line to end and you will have a nice line.

Now we have the mesh outlined.



Now, inside the burn line we will add a light highlight to give it more of a 3D look. Use the dodge tool. Set it to range: shadows and exposure: 7 or so.



opacity around 15 depending how dark you want it.

Now go over the lower parts of the skin.

Now lets make the higher part look better. With the dodge tool select the smallest brush and set the exposure to 25 or so. Add a highlight on the edge and make some parts lighter and darker to make it look used.



Now lets make some indents on the clip. To do this use your selection tool and make a selection down the clip. Now, if they are rounded on the edges use the circle selection tool and make them rounded. Ok now let's add the shadows to make it look indented. Now we need to make one of the shadows bigger on the side the light is hitting and the other side smaller. Use the burn tool and set the exposure to 19 and add a thick and a skinny shadow, Then add a shadow to the top



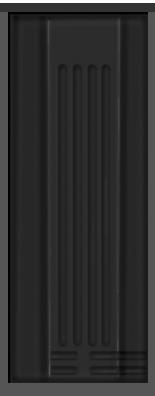
Now we can use that as the base to the other grooves. Just copy and paste it till you have the amount of grooves you need just make sure they are all the same heigth. Once they are all in the position you want merge the layers to the middle layer.



Now lets make highlights on the edges of those use the dodge tool and the exposure of 5 and add a highlight to the side where the shadow is the biggest. Now add a highlight inside the indents. Use a small brush and dont make them uniform.



There are grooves on the bottom of this style of clip so I will add them the same way that I did the first ones just horizontally.



Ok now we should add some wear to it this does not mean go crazy with sratches or brushes that look like scratches just add scratches on parts that would get banged up on easily like edges, the bottom, and the top. What i like to do instead of just drawing lines everywhere is make dots with the dodge tool in some areas; not too much but just enough. So, go around on parts that you think should have some where and add it just dont go over-board.



Now lets add some more detail. Right now the skin is almost all one color. Let's fix that. Select a dark color. I used 29, 29, 29. Use the paintbrush and set the opacity to 15 and make the top and bottom somewhat darker.



Now lets change the brightness and contrast to make the colors look richer.

I used Brightness -10 and contrast 30

You may want to use diffrent settings so play around with them find out which one looks the best



And that is about it. You can add any other things that you think will make the skin look more detailed or more metallic.

Take your time on your skins. Dont just add scratches for detail find some good reference pictures. Look at them and see what makes the look metallic.

I hope that I have helped you in some way to become a better skinner. Thanks for taking the time to read this, and thanks to Sykk for helping with this tut.

Willis



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Skinning Metal - [JEA]Spawn

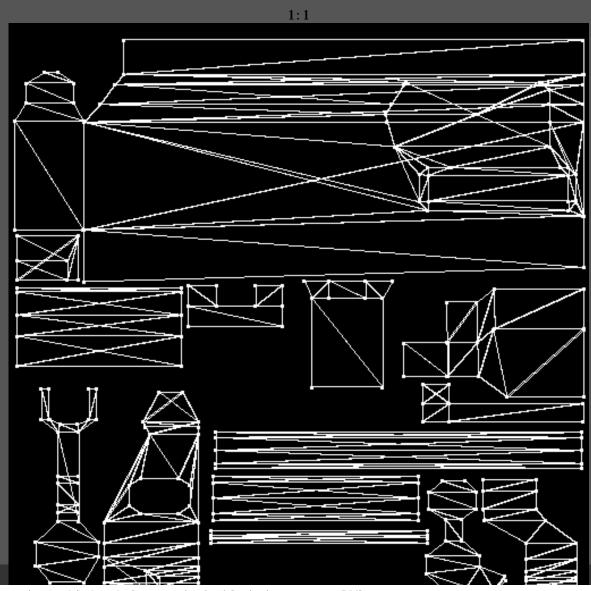
Disclamer

I have the swedish version of Adobe Photoshop, so you might not understand the text in some of the pictures. And i dont say this is the best way to make metal, nor do i say this is the only way, this is just the way I make it.

To understand this tutorial you need to have a certain degree of knowledge in Photoshop, i.e where all tools are located. There will be a picture of the tool you need to use in this text but you might have to look for it. Because all tools arent displayed at the start.

Step One.

First take the template containing the mesh, the one i use will look like this. Its the main body on the AK47 from Urban Assault.





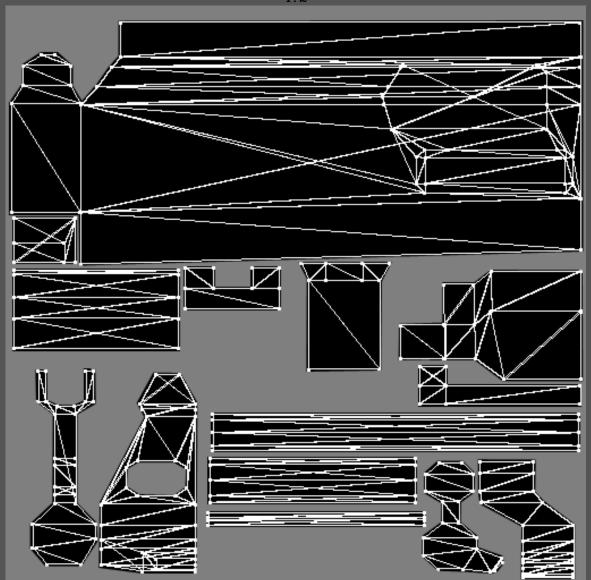




Now you will add a new layer and paint it grey. Do this by clicking the Layer button, then select

'new layer'. Paint this layer grey, a pretty light grey. Now we will use the point-to-point [lasso] function to cut holes where the mesh is. [see pic 1:2]





Make it look like this. We made this grey layer because its alot easier to see the different parts this way.

Now create another dark gray layer and place it the way pic 1:3 show.



This darkgrey layer will serve as the background of the skin, i.e we will paint everything on this one. Except screws or different other details like serial numbers and text.

This is what your picture should look like when the second darkgrey layer has been added. [see pic 1:4]



As you can see the white lines [seen in picture 1:1 and 1:2] are behind the 2nd grey layer. If you want to see them again just decrease the opacity of the darkgry layer.

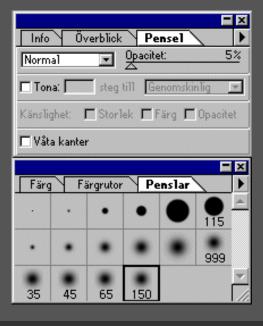
Now when the base of this skin is done we will try to aquire a metal look.

Step Two.

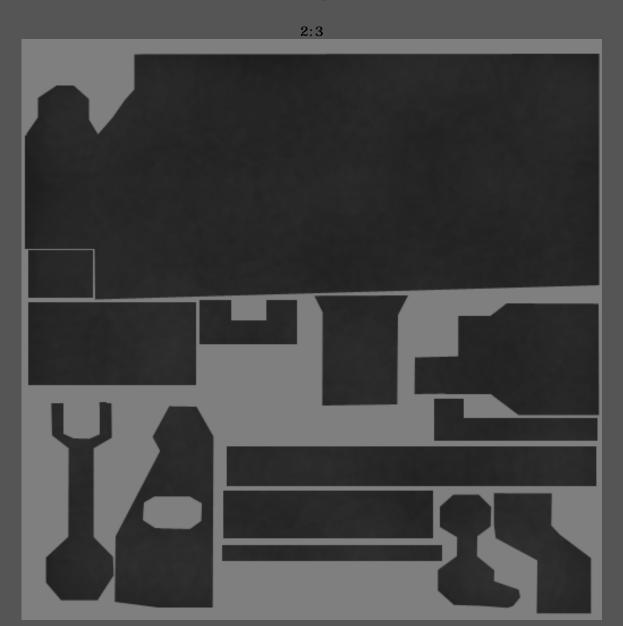
Select the 2nd grey layer [see pic 2:1].



now select the tool and set the opacity to 5 and the brush size to 150. [see pic 2:2]



Use the brush and click randomly on the picture until you have a picture looking like this. [see pic 2:3]



Its not very easy to see what i have done so i recomend you to open the step2.gif file in some kind of grapic program.

We will now begin to work on the metal look. Do this by clicking the clicking the located at the same place as the clicking the look. It's located at the same place as the clicken look. Select the lighten tool and set the opacity to 7 and brush size to 1. Now draw HORIZONTAL lines all over the picture like i have done. [see pic 2:4]



After this we will add some lightning, select the 150 and set brush size to 150 and opacity to 18.

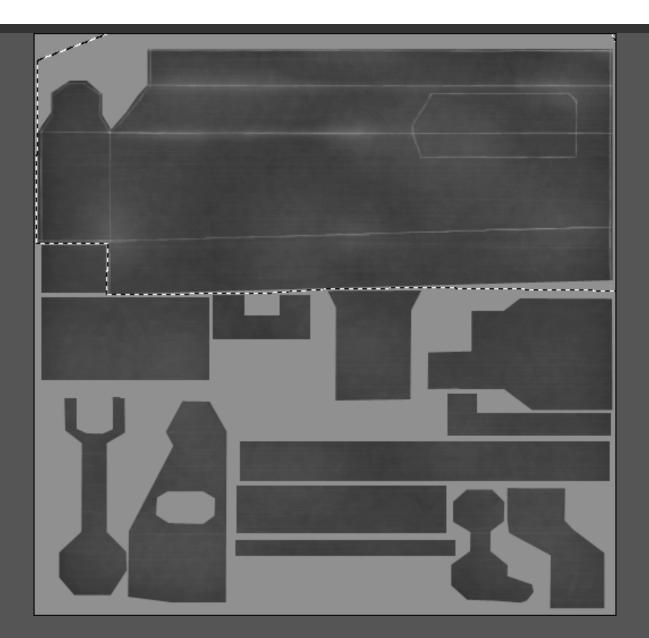
Now click with the tool over the picture in random places until you think it look good. Try to get it nice and smooth[see pic 2:5]



Now use the pacity of the 2nd gray layer to 92 so you can see all white lines.

Now use the tool and set the opacity of it to 26 and use brush size to 1.

Start painting all the contours of the body. [see pic 2:6]



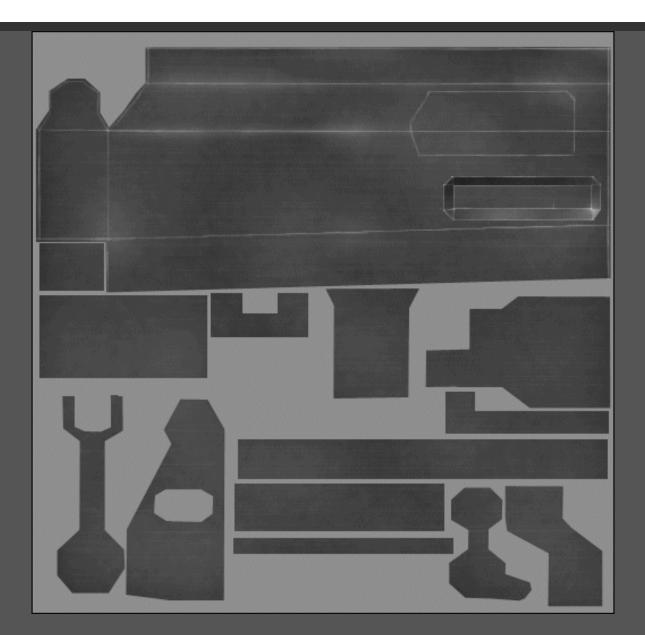
As you can see i made a selection all around the main body using the point-to-point [lasso] tool. I have also added a few highlights on the contours.

There is still alot to add as you can see. I have made the contours of the ejector port here to.

Now we will start painting the details, I will start with the thing right under the ejector port.

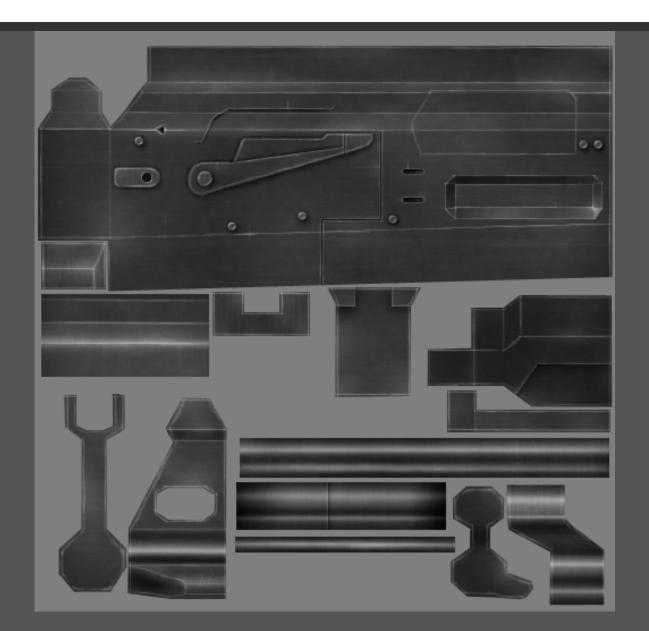
I began with decreasing the opacity of the layer to 95 and then using the tool to select the

place where i want to paint. Then i used the and tool to make highlights and shades. [see pic 2:7]



We will now add the rest of the details using the same techniques as before. Imagine theres a sun shining in the upper left corner. That way it is easier to make the highlights and the shades, it will also give a more realistic look.

This is the finished template with all details added. [see pic 2:8]



And this is the finished Avtomat Kalashnikov 47 with wooden buttstock, handle and forearm.

Perspective render.
Sideview render.

What are you waiting for go skin something, nothing will be done by just sitting there !!!

[JEA]SPAWN[DD]
The End!



Skinning a pistol grip - Hitman

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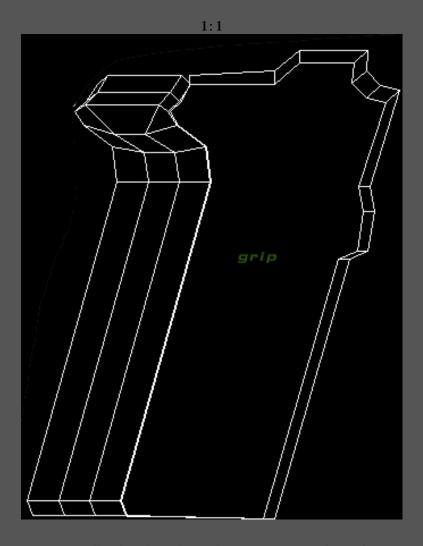
Notes

Galen showed me how to do this, I do it a little bit differently to him though but still big thanks to him.

I'm just writing it into tutorial form.

Step One.

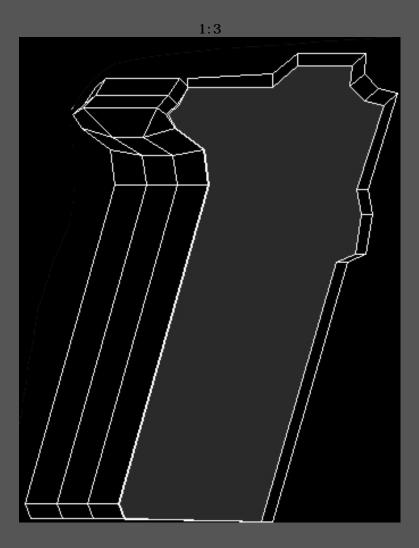
First we take a mesh where there's a pistol grip :) . I'll be using the grip mesh from sPiN'FuZoR's Smith & Wesson Pistol (1:1)



Now you'll take this <u>file</u> and open it up in Photoshop. Now go back to the grip mesh and add a new Alpha channel in the channel's tab(1:2)



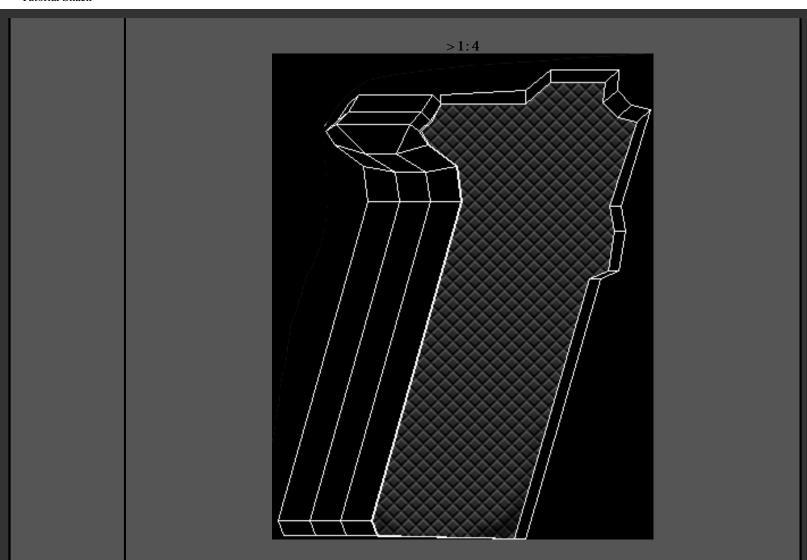
Now select the area of the grip you want the texture on, paste it onto a new layer and fill it with a dark grey(1:3)



Now go to the Filters/Texture/Texturize in the menu. And go load new texture (Textire/Load Texture)

Now load the diamond.psd file you opened. Make sure it's on the default settings. That's it(1:4) of course you don't just slap it on like I have you'd put it the way you'd want:)

You can also play around with Render/Lighting Effect's if you're not happy with it





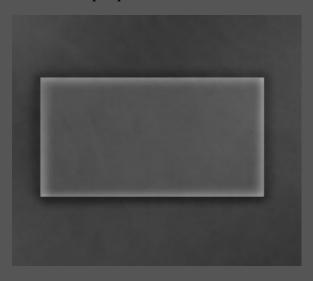
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Light Source - Ratty

Okay guys, while I'm not exactly a leet skinnar, I thought I'd make this tutorial because I see a LOT of guys around, who are just getting into skinning, doing the same thing. It really bugs me because I used to do it and there was noone around to tell me what I was doing wrong.

And let me get this clear, this is NOT a tutorial about how to make a metal texture this is a tutorial about correcting a mistake that lots of people make, if you don't like it, you can cram it, if you think you can do better, make your own tutorial.

Rightio, say you need to skin a flat square of metal that has one raised up block coming out of it, some people will do it like this.



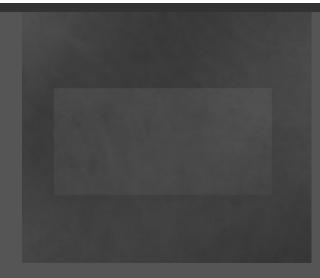
While this might be okay and may get you by, it really doesn't look that good. you need to have a more defined light source.

The problems with it are:

- 1. There is a shaddow cast around the entire block
- 2. There are big white highlights that just dont look at all natural
- 3. These same big white highlights extend the whole way around the block

So what should be done to make it more realistic?

- 1. Pretend there is a light shining from above and just to the right of the block.
- 2. Start with the basic block you want raised up and put it on a new layer, seperate from the background.
 - 3. Dodge the block a bit just to make it a tad lighter



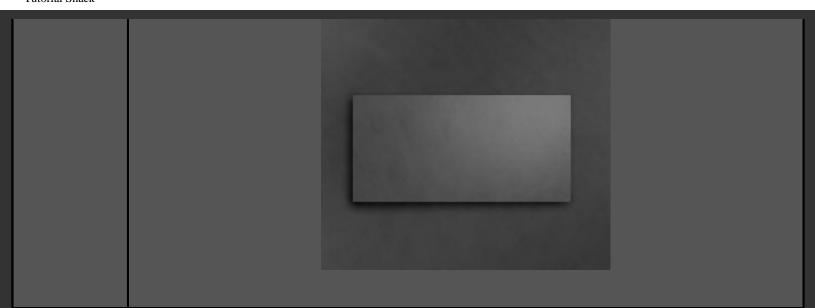
4. Select burn and take a brush that is about 20 pixels wide. Set it to burn shadows at about 30%. Burn on the background layer around the bottom and left hand side of the block.



4. Select a very fine burn tool on to burn shaddows on about 7-10% opacity. Burn just around the remaining edges of the block



5. Select the dodge tool. brush size around 200. Dodge shadows at about 20-30%. Dodge the upper right hand corner, because this is where your light source is comming from, hence it will be lighter.



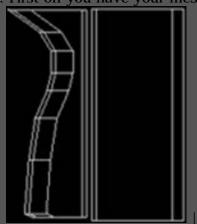


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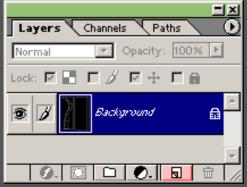
Making a Metal Texture - Helldogg So you want to be a skinner eh?

OK you need Adobe Photoshop 6.

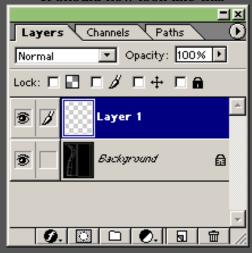
1. First off you have your mesh:



2. Create a new layer



It should now look like this



Ok on to the harder part.

3. Use the fill tool A. and fill it with the color R: 31 G: 31 B: 31

It will now look like this



4. Tone down the layers opacity to 90%



you can faintly see the mesh now.

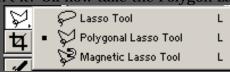
5. Take the airbrush tool and set the opacity to 5% and use the brush size 200 and choose the Color White.

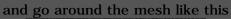


Now choose black and do the same thing. Not to DARK though.



Cool isn<u>'t it? Ok</u> now take the Polygon Lasso tool







ok now dodge and burn areas... until you get what you like.



Now while its still highlighted with the Lasso tool.... Now just add your light source and minor details to make it look nice...



Now you are done. If you play with it a bit more you will have something that turns out greater than you expected it to be. Remember to put your opacity back to %100:D

CREDITS: Spin for his mac 10 mesh... well only the handle part :D



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Rendering Tutorial - iono

Please note: This tutorial was created in 3dsmax R2.5 - I have newer versions but I clicked the wrong link on meh desktop so i r using the wrong version - all features in this tutorial work in 3.1 with slight menu changes so use your common sense:) (4 is untested)

IF YOU HAVE PROBLEMS EMAIL ME

Step 1: Preparing the scene

Load 3D Studio MAX. This is the simple bit so those more experienced may want to skip a stage or two. Well for all those who are new to MAX i will start right at the beginning.

To make a decent render you need:

A model (really?)
 A light(s)

3) A well positioned camera

ok first stage import/open your model(s) you wish to render. File>Open or File>Import. You now see the model. You will now need to position the perspective view to have a decent view of your model using the camera controls. Our next task is to place a light. Go into the Create tab and Select Lights select Omni (you may wish to experiment with others.....this tutorial will only cover omnis). Now in one of your displays place the light with a left click now you will have to select the light and adjust it in the other views. no go into the modify menu and scroll down the list.....turn CAST SHADOWS on. At this stage do a test render to make sure that shadows are not distorting if there are black lines in weird places on your model the solution is to turn the Shadow Map Size up - i have no problems with 1000. Next Stage is to make a floor this can either be a plane or box - i am going to use a box as i am using MAX R2.5. Create the box as i have....size is not important here. Once you ahve done that zoom in to the view that has your back view of the model and move the box so that the model is laying on the box. now move the box across so that you cannot see the edges in PERSPECTIVE view. Do a test render now. Notice how dark the shadows are? you can tweak this in the lights settings. for shadow colour select a grey instead of black.

MATERIALS

Open the materials popup. (i have custom materials already setup - dont worry these wont be used) First off we need a wood texture for our floor. Done that? Now click on the first sphere drag the sphere onto the box (floor). It will change colour. now click on the MATERIAL/MAP NAVIGATOR button. We need to turn the material in to a Raytrace material you do this by clicking where it says STANDARD and selecting raytrace from the list. Now on the main materials popup scroll down and click on the maps bar. Click on where it says NONE next to DIFFUSE and select BITMAP. Click on the empty bar next to BITMAP: (if you are using 3.1 this screen will come up automatically after selecting BITMAP in the previous stage. Locate the wood texture to be used. Click OK and we now have to set up reflections go back a stage in the map navigator by clicking on Material #1 (Raytrace). Now click on the NONE next to REFLECT and follow the previous stage to locate Chrmwarp.jpg (you can download it here if you has a warez MAX). We now can close the materials tabs and select the floor box. collapse it to an editable mesh and select vertexes now move them so that the edges are still offscreen but the box is not too big. this will increase the bitmaps quality but when you do a test render you will notice the bitmap is far too blured - you can fix that by applying tiling since this bitmap is tilable. Go into the materials popup and click on Diffuse in the map navigator. there is now some enterable variables for tiling. set them to 4 on bot U and V.do a test render to ensure that there are no problems (if you are doing

a render higher that 640x480 then 4 tiles may be too few. We are basically finished but there are

a few more steps to do...firstly the reflections are not anti-aliased. Fix this by going into materials and selecting the Top (Raytrace) layer. Now under Raytrace Controls click on options and tick antialiasing in GLOBAL. A few tweaks and we are done. I am not going any deeper as tutorials should only get you started - the best way to learn is playing around with settings and seeing wot they do.....my final render is enclosed



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Skinmeshing - iono

Introduction

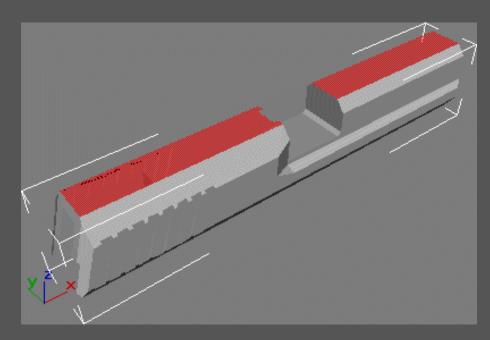
I get a lot of requests from people asking me to either teach them to skinmesh or to skinmesh a model for them. I do not have enough time to give anyone personal 'lessons'. And do not really enjoy meshing so I only mesh my own models and those of close friends. This tutorial is aimed at those that have basic or higher knowledge of Discreet's 3D Studio MAX. This tutorial was created in R4 but I believe you can get the same results in R2.5 and R3.X. I have tried to keep this tutorial to purely 'how-to' and not 'how-I', many tutorials can be copied directly, this isn't really helping anyone. In this tutorial I will only be showing you how to mesh the slide of Raven_TK's H&K USP9 model.

• Required

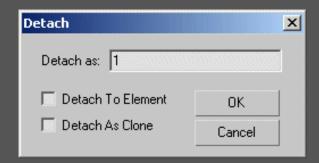
- 3D Studio MAX R2.5, R3.X, R4.
- Texporter (R2.5 R3.X R4)
- Raven_TK's USP9 slide (.max .3ds)

Detaching

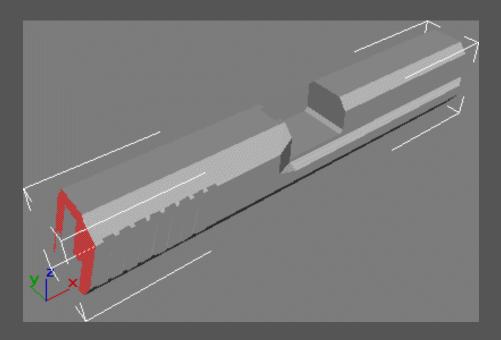
Look at the left viewport, there's a lot of faces that aren't visible isn't there! There's the top, insides of the ejector port, the front and back, and the other side of the right side of the slide. To create a decent skinmesh you have to layout the model so all these faces are visible (or if you want not the ones that aren't visible ingame, but its a good idea to do them to get the practice!). The first stage is to detach the faces that are not visible. Select the slide and go into the modify tab and go into 'face' selection mode. Now select the faces on the top of the model that are not visible in the left viewport. Your selection should consist of 10 faces.



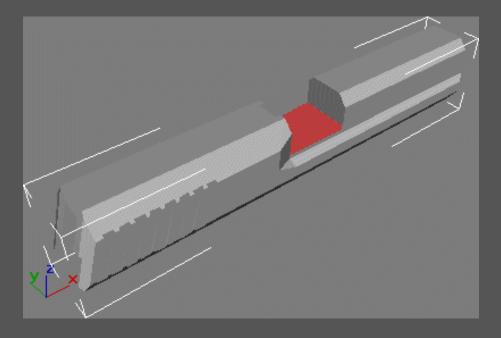
Now click on detach and in 'Detach as' enter 1. This is important for the later process of putting the mesh back toghether.



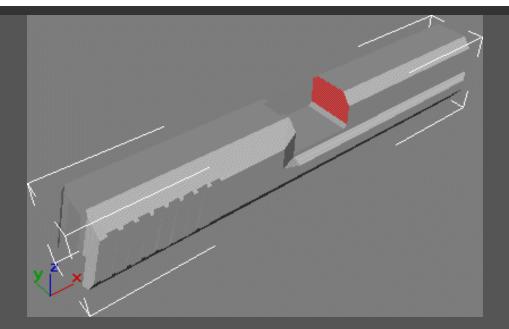
Select the back of the slide, 21 faces. And Detach. Call it 2 this time.



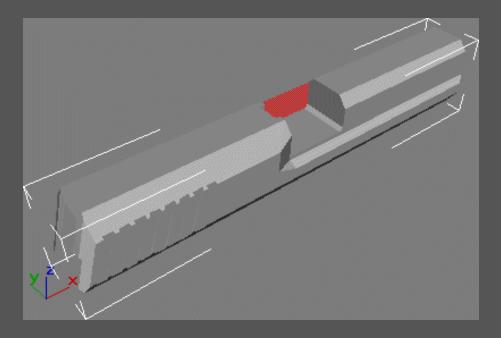
Select the insides of the ejector that can be seen from the top viewport, 8 faces. Detach. Call it 3.



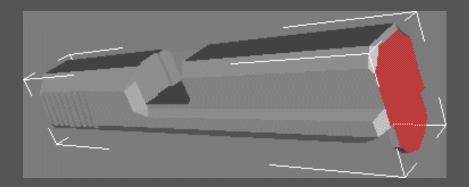
Select the insides of the ejector that can be seen from the back viewport, 4 faces. Detach. Call it 4.



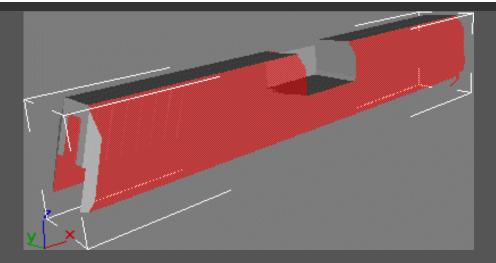
Select the insides of the ejector that can be seen from the right viewport, 3 faces. Detach. Call it 5.



Select the front of the slide, 13 faces. Detach. Call it 6.



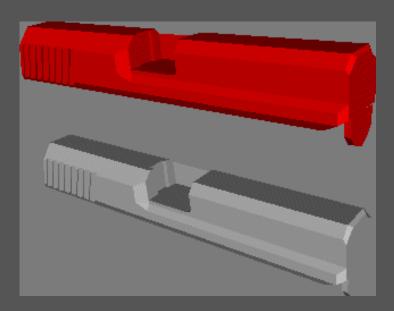
Select the right side of the slide, the bottom, the insides, 217 faces. Detach. Call it 7.



Select the rest, 205 faces. Detach. Call it 8.

Cloning and 'Unwraping'

Now that we have detached all the faces and numbered them we can create a layout that will be able to be skinned. first we want the select all the whole model and make a clone, do this by holding down shift and moving the model to another location. give this a colored material to remind you that its the backup!



Now its time to Unwrap the faces, like i mentioned earlier a skinmesh is a 2d projection, so we have to rotate the faces we detached so they are visible in the left viewport.

Select '1' and rotate it -90°.

Select '2' and rotate it 90°.

Select '3' and rotate it -90°.

Select '4' and rotate it 90°.

Select '4' and rotate it -90°.

Select '6' and rotate it -90°.

Select '8' and rotate it -180°.

Next we align the parts to ease skinning.

Select '1' and align it to '7' on the Y axis. Current Object: Minimum, Target Object: Maximum.

Select '2' and align it to '7' on the X axis. Current Object: Maximum, Target Object: Minimum.

Select '6' and align it to '7' on the X axis. Current Object: Minimum, Target Object: Maximum.

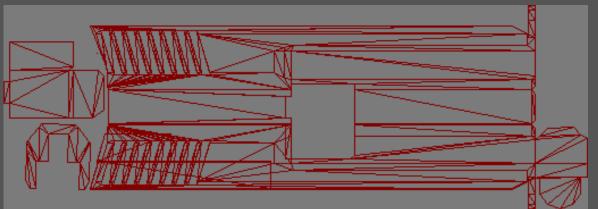
Select '8' and align it to '1' on the Y axis. Current Object: Minimum, Target Object: Maximum.

Select '3' and move it to below the slide.

Select '4' and align it to '3' on the Y axis. Current Object: Center, Target Object: Center.

Select '4' and align it to '3' on the X axis. Current Object: Minimum, Target Object: Maximum.

Select '5' and align it to '3' on the Y axis. Current Object : Minimum, Target Object : Maximum. You should now have something like this.



• Planar Mapping the Unwraped Faces and Morphing back into shape

Now that we have detached all the faces and numbered them we can create a layout that will be able to be skinned. first we want to Select 1 and attach it to 2 then 3 then 4 then 5 then 6 then 7 then 8. This has to be done in numerical order otherwise it goes fubar! Now select the left viewport and then add a 'UVW Map' in the modifiers. Scroll down the modifiers properties and then click 'View Align' and 'Fit'. Now add an 'Unwrap UVW' modifier and check its all fine. Now select the backup model and attach it toghether in numerical order (like you did with the mesh, and again this stage is important!). Now select the mesh and go to 'Compound Objects' and select 'Morph' now click 'Select Target' and click on the backup model. Tah dah! The models back toghether, you can delete the backup model now, we need to weld the vertexes now. Go into the modify tab and select all the vertexes. Now click on 'Weld Vertexes'. You now use Texporter to export a bmp for skinning.



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Making Player and World Models- Hitman

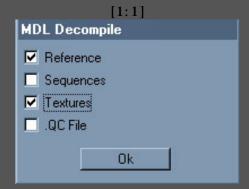
The Model I'm Making the P Model For



First you'll need <u>Milkshape</u>, <u>Studiomdl.exe</u>, <u>the model</u> your making the p_model & w_model for and the model it replaces (eg If it's a SG-552 replacement then the file you'd get would be p_sg552 and w_sg552).

Now put the file your working on (in this case a Berreta 92FS Deagle Replacement) and put it in a new folder along with the original p_ & w_ of the model it replaces (for this model it's p_deagle & w_deagle)

Open Milkshape and go to Tools/Half-Life/Decompiled Normal HL Mdl Now select the model you want to make the p&w for (this case it's v_deagle) Then make only the Reference and Textures box checked (1:1)



Now go to File/Import/Half-Life SMD and import the .smd(f_deagle_template in this case) file that will now appear. When the box comes up make only Triangles checked (1:2)

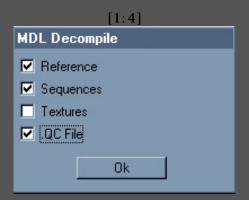


Now go to the groups tab, and select hand, press delete, then select thumb and press delete(1:3)

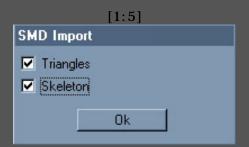
You should now just be left with the gun



Now go to your default p_ and w_ that you want to make (in this case p_deagle and w_deagle) Now go to Tools/Half-Life/Decompile Normal Half-Life SMD and check the Reference, Sequences and .QC File box (1:4)

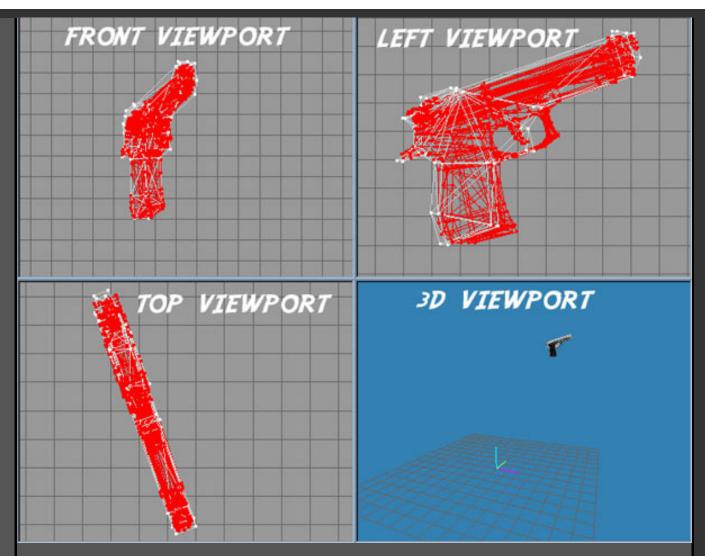


Next go File/Import/Half-life SMD and select the file you just decompiled (in this case reference_deagle.smd) Make both selections ticked (1:5)



Now select the gun that you decompiled first (in this case the Berreta 92FS) and move it over the model that your replacing (in this case the CS Desert Eagle), use the rotate, scale and move functions (in the model tab) to your model over the default model in all the viewports except the 3D one. (1:6)

[1:6]

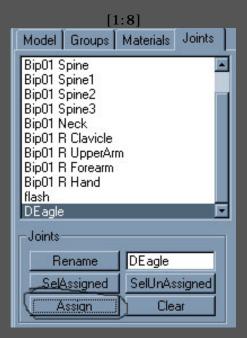


Now go to the groups tab and select the group that was added from the model you last imported (most likely w_weaponname) in my case it's deagleskin. So you select that group and delete it (1:7)



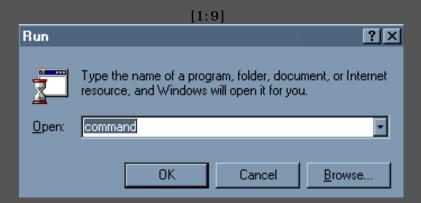
Now go to the joints tab and select the bone with the name of the weapon your p model is for (in my case it's the bone called Deagle) Select this bone, then go to the group tab and select each group by clicking on the name then clicking select (just using the select tool in the model's tab

won't work). Once you have the whole gun selected go back to the Joints tab and click assign (1:8)



Now go to File/Export/Half-Life SMD and export it to the .smd file your p model is for (in my case reference_deagle.smd).

Now put Studiomdl.exe into the folder your working in. Now click in the window of that folder. Go to the Windows Start menu and click run. In the prompt type "command" (1:9)



A MS-DOS Promt will open up, the directory it'll be in should be the folder you working on (if not you'll have to work your way to your folder). Now type "studiomdl p_weaponname" Where weapon name is the model your p_model is for (in my case p_deagle)

And you should have yourself a nice new CS Version 1.3 compatible P Model

Note: The W_ model is the same process except replace the p_model parts with w_model parts (so instead of p_deagle it'd w_deagle)







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Interviews - PRiMACORD

Hitman: Prima, will j00 tell the readers who dont know you somethign about yourself

PRIMACORD: no
PRIMACORD: ..
PRIMACORD::D
* Hitman cracks whip

PRIMACORD: I'm 19, i live in toronto, i sell my body to make money.

Hitman: How long have you been making model related thingies?

PRiMACORD : For cs? Hitman : In general

PRIMACORD: For the past 5 years started when i was 14

Hitman: What did you begin with, modelling/skinning or animating?

PRIMACORD: Neither, i started by playing around in max. I created environments, played around with special effects. Lots of stuff like that; eventually i refined my modeling abilities by modeling stuff i thought would be cool to make.

PRiMACORD: I guess you can say modeling:)

Hitman: So you would feel the best way to begin is just to play around and eventually model stuff you like (i.e dildos).

PRIMACORD: Yes, people use tutorials far too much these days. It's like nobody actually learns on there own, they just look for easy tuts or ask ppl (me). The best way to learn something is to do it on your OWN.

Hitman: But tutorials are still useful, for furthering one's technique

PRiMACORD: I don't agree with that. Tutorials are shortcuts. There good for people who don't really care about becoming great artists; people looking to spend a minimal amount of time on a certain project.

Hitman: But certaintly you cant blame someone, if they spend months trying to figure out how to do a paticular effect they're bound to get annoyed and eventually just look for a tutorial PRIMACORD: Months? Thats a little extreme I think....if you can't figure it out, you don't know the program well enough. It's not rocket science. Maybe I'm being harsh....I just believe people should learn stuff on there own. When you do, you can PROUDLY say "look I did this, on my OWN". A lot of people put out some great art, but how many of those people figured things out on there own? If I read a "make a robot" tutorial and created a robot....can I really take credit for it??

Hitman: Vote 1, Prima for anti-tutorials: P, Is there any final statement you liked to say? PRIMACORD: Learn stuff on you're own, but if you're reading this @ tut-shack....heheh:)

