




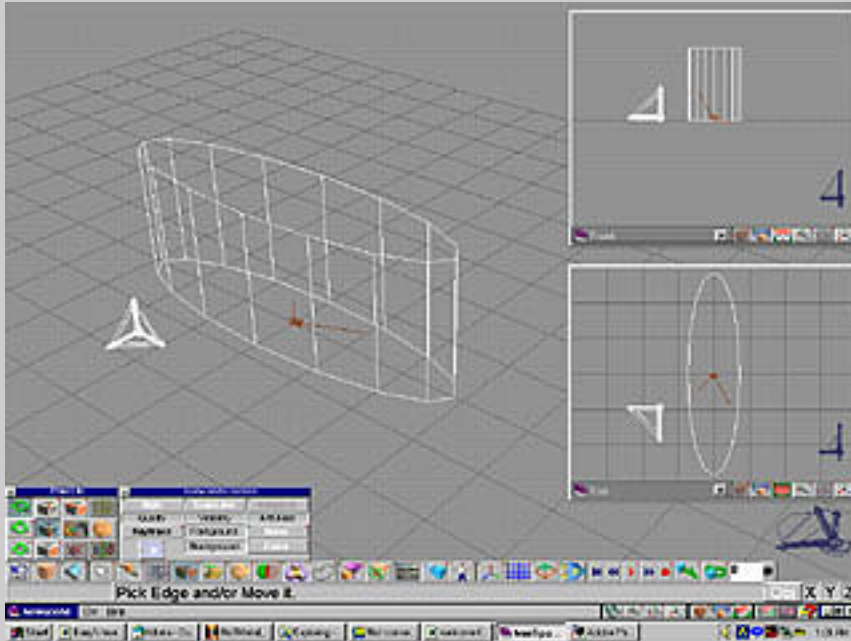
Blade Tutorial © Barry Christian

As I mentioned in my last article, boat hulls and knife blades gave me particular problems when I first approached them to model them. This is my second tutorial on modelling in trueSpace. This one covers the knife blade.

Getting Started

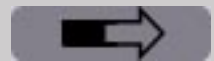
First we setup our screen to prepare for this model. For this model I like the main view set to perspective , and two additional views, front , and top . Side could replace front in this, it doesn't particularly matter.

Start With the Cylinder Primitive



This caused a lot of thought. I felt a lot like the character from Monty Python who said "my brain

hurts". I tried all kinds of things. I tried a cube and took off a face by welding the vertices of two corner edges, but then I had a nice blade that didn't go to a point. I tried the spline tool and that would work too, but took a lot more time. Still it is a viable alternative, just not my favorite. You may like the other way better. To each, his own. I decided that I liked the cylinder tool best, because it gave me the basic shape quickly and then I could move some edges around to get the shape I wanted. If I was modelling a specific blade for accuracy, the spline method would probably work best. Figure 1 shows the cylinder after I stretched it to the basic shape of a blade.



Shaping the Outline


We need to use the "Point Edit:Edges" tool  to select the edges of the stretched cylinder to shape it to the outline of the blade. Figures 2 and 3 show the selected edge. The green arrow points to the edge being moved.

Figure 2

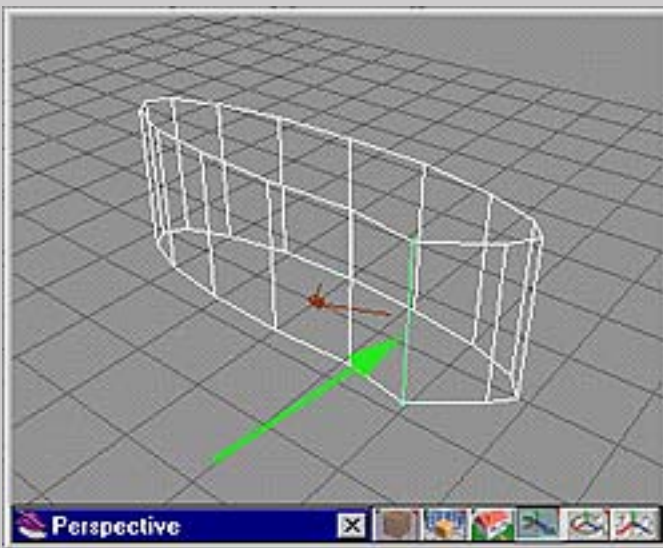
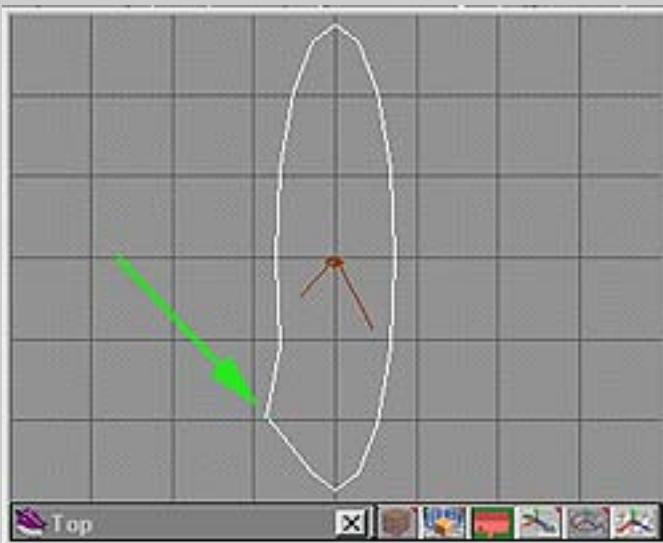


Figure 3



Select each of the edges and move them to the correct position. Depending on what type of blade you are

making, this can be just about anywhere. Figures 4 and 5 show an example of a finished outline from perspective view and top view.

Figure 4

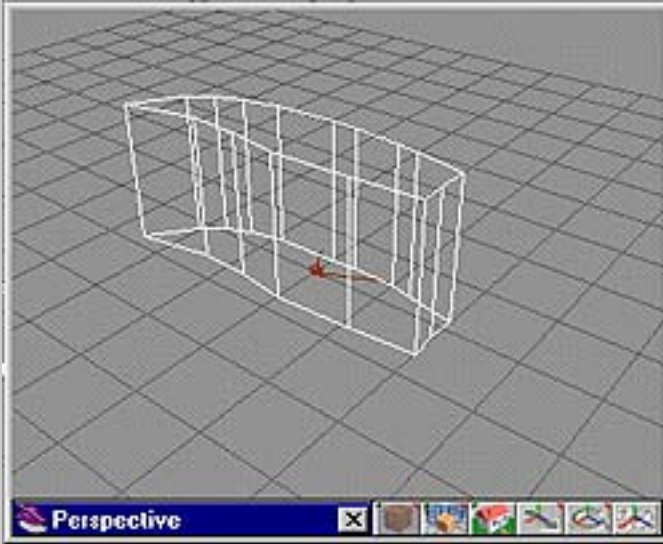


Figure 5

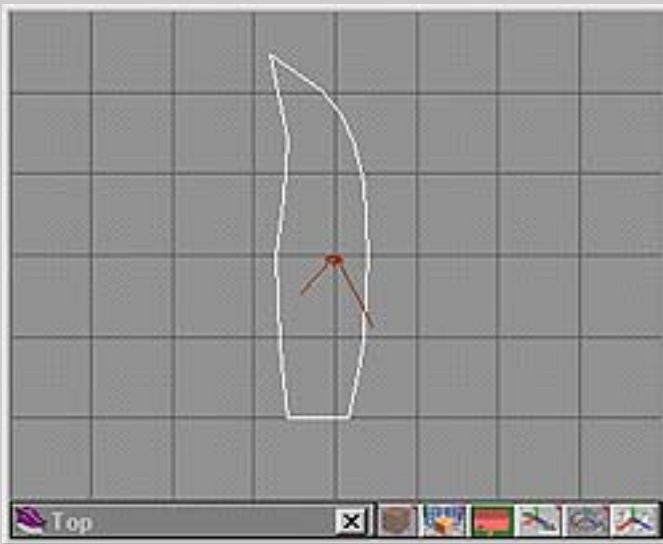

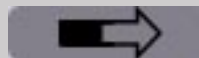
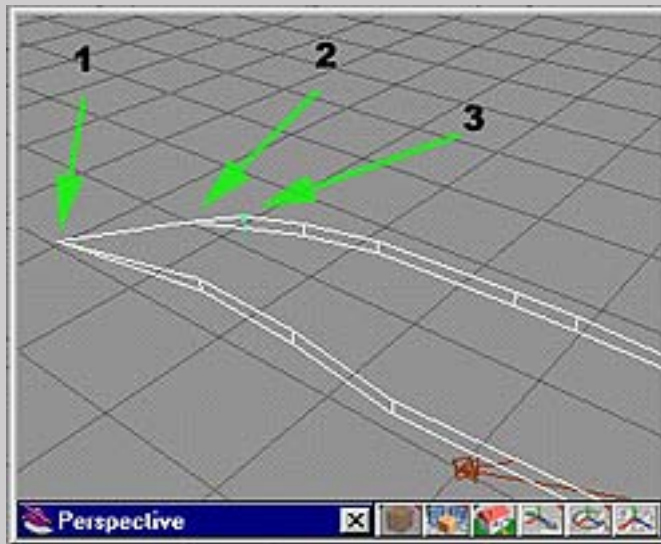




Figure 4 also shows that the blade is too thick. Couldn't do to much cutting with that, could you? Well, we are about to remedy that. The thickness just helped in that last step. We don;t really need it anymore. So choose the "scale" tool  and scale down the Z axis by holding down the right mouse button in the perspective view and pulling down on the mouse. Stop once the

thicknes looks right to you. Something like figure 6.



Making the Edge



Now that we have the outline and the thickness is right, we can make the edge. You know, the sharp part. The part that cuts. To do this, we will use the "point edit: edge"  tool again along with the "weld vertices" tool . Figure 6 shows this being done. At this point I have deleted the tip edge(1), and one more(2) and I have the third edge(3) selected ready to be welded. Keep this up all the way to the bottom edge of the knife. The back should be left alone, of course.

The Completed Blade



Well, now the blade is done. What next? Well, you need a nice handle, a blade guard perhaps. Maybe a shiny hilt. Here is a knife I whipped up kind of quick as an example. There really is no end to the blades you can make with this method. For really complex curved blades, you may want to start with a higher resolution cylinder or even use the spline tool. However, the spline tool introduces a lot more polygons which takes longer to work with and is slower. this also makes it a lot more tedious when you weld vertices.

I hope you enjoyed the tutorial, and I hope it helped you some. Have fun making knives, but don't cut yourself!

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