

KILLERWHALE INSTRUCTIONS

Version 1.00 19-12-2019



FREDDY STAPERSMA

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Do's

This model is free for everybody to make, enlarge, reduce and give away.

Dont's.

Sell it at any price more than material costs. So no commercially selling allowed without my aproval!!!

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Disclaimer: instructions are used at own risk. This is my first instructions for building a inflatable.

I could have made some errors in writing these instructions.

If so please let me know. I will change and add extra info as needed.

contact

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In the beginning of my kite building I had lots of help from people all around the world with design questions, sewing questions, you name it the community helped me. My requests were always answered and so I also had this idea to share my knowledge for others who might enjoy building some kites or line laundry

So I will release the templates of the killerwhale. But not just like that. I hope people would like to read the journey that brought me here with a finished product. Some lessons in how I did it and might be useful to do this yourself.

My kite flying history starts at a young age seeing a Flexifoil stacker for the first time. I was hooked on that kite but would take another 2 years when I bought one. All of my childhood and a large part of my young adult time I was flying stuntkites.

I had a uncle who builded his own oneliners and we we met it was always about kite flying.

Years gone by.I've Got married got two kids and they where getting the age that kite flying would be fun.So I bought a few one line kites from China and started kiting with my kids. I told my uncle that I started to fly one line kites now. He told me he was getting old and wanted to sell his kites. Me with my big mouth said no way. They need to be kept into the family!! We talked all evening about what he made and where he got the plans from/

3 weeks after this conversation my mom stood at my front door. Crying. Suddenly my uncle had died from heart failure. To make a long story short. I inherited all kites he made. His tools, fabric. everything.

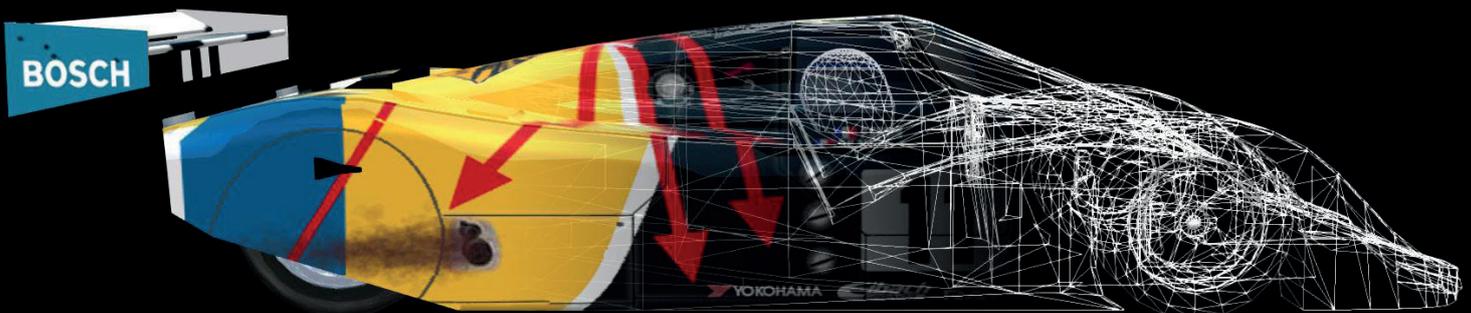
Some kites needed repair and so my sewing adventure started. First repair. Building my first own kite (compound cody). and I was hooked. Later I told myself that I will try to build everything myself. I made few more kites and line laundry from images I saw online Found a lot of new friends along the way who helped me a a lot.

Buliding kites from plans is fun but I wanted to make something that was designed by myself. so the search for something to design started. Designing a kite was way over my head so this is what led me to linelaundry and that was the Killerwhale the is in front of you now.

My hobby history is in Photoshop and texture making. Before I started kite building I've been working on racegames and texturing. The object in the games are made in 3d. and for texturing they make a file that you can use to paint on. When you done that you can see the texture ingame. The file looks a bit like a sewing pattern and my quest was to use this for a template I can use for kitebuilding

The programs I use.

For the 3d models I use Blender.(<https://www.blender.org/>). Blender is a freeware program with a lot of import possibilities so you can load a lot of 3d formats. (NOT ALL!!) You need to see if the 3d object you used is useful to import. Obj files are mostly fine.

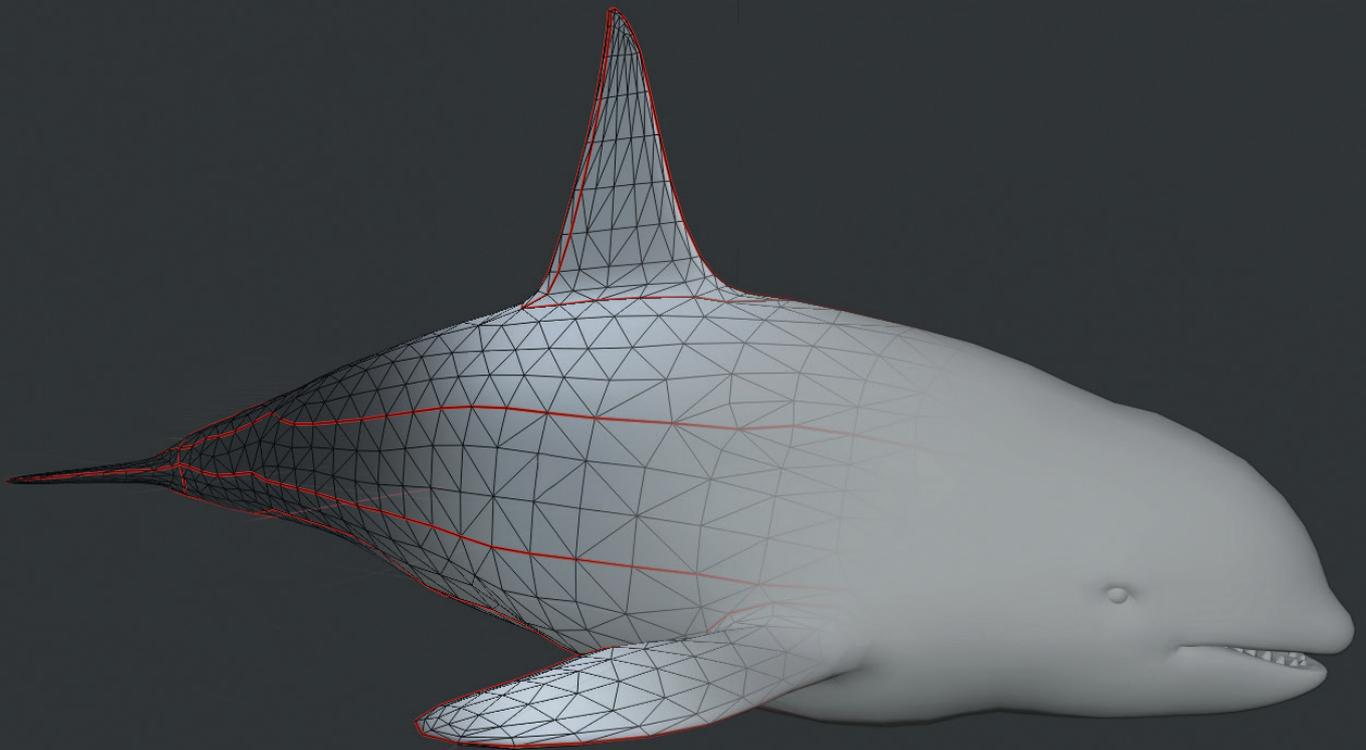


VirtualLM
SPORTCAR SIMULATIONS

Designing and making templates

So It all starts with 3d models. While you could learn to create your own you could start by finding free ones online. Lot's of free models of animals, figures and other things are there to grab for free. But please always read the copyright. Most of them are free to use non commercially only!

When selecting a 3d model you need to look if a model is good enough to inflate. So very thin legs could be a problem. You should also imagine that what would happen to a model when you inflate it. How will the details blow up. do I need internal reinforcements. A lot of that is eyeballing.



You can load/import a 3d figure in blender and you can see the 3d file is made by lines. These are the lines we use for making the templates. In the industry this is called UV mapping which is used by 3d artist to draw textures on the 3d file.

(search on youtube for "uv mapping in blender" to see some tutorials)

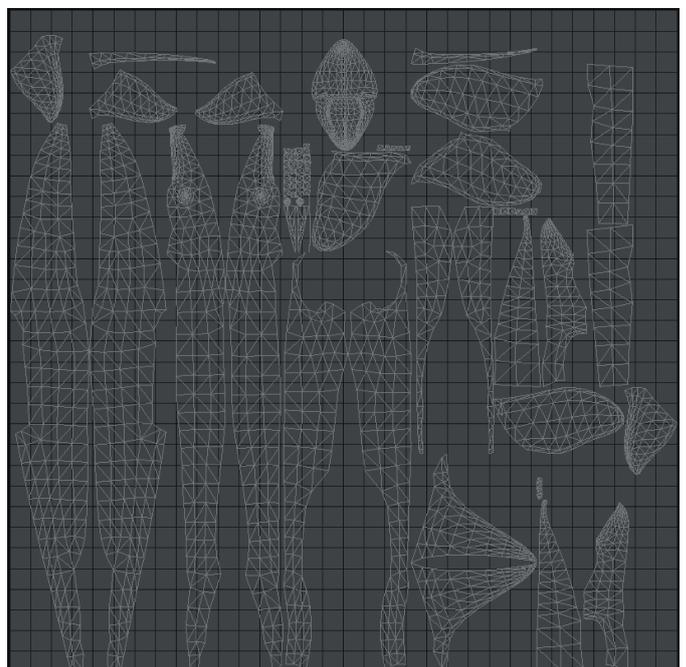
To be short. We need to add a seem to the 3d model so the program knows what parts of the triangles belong together. But there is a problem with UV mapping. Not everything is layed out correctly. there is still some thinkering to be done. Hollow an bold parts are not always correctly visibable in a UV mapping.

When you are able to make templates and export them to a usable file format for your drawing program (I use Adobe Illustrator eps format) you can check all part for errors. Combine parts or delete parts you do not want to use.

Building the killerwhale

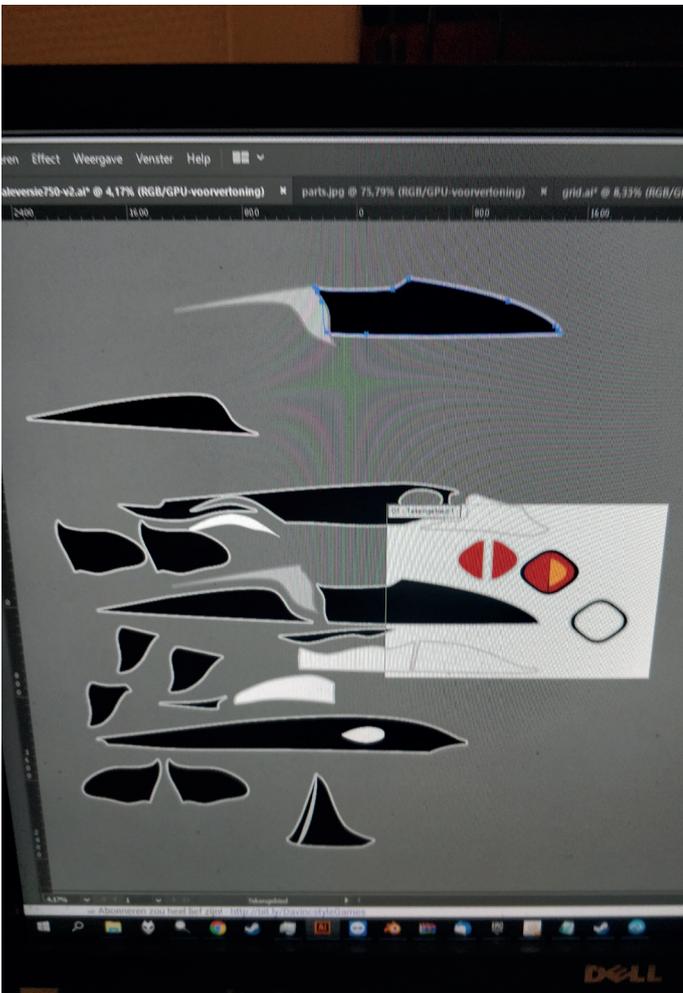
After I was able to make templates myself I needed to think how I wanted to build the orca. I decided to use 12mm sewing allowance that might be a bit big but as there are some tight corners to sew I wanted all help I could get.

UVMAPPING SAMPLE



Paper testing

After designing I printed some parts out on paper to see if the idea would work. Glued some parts and it seemed to work. So work started at the first prototype.



First prototype.

The first prototype was made in a bright yellow fabric I bought for 1 euro per meter. A bit stretchy but good enough to test if the design would work. Here I found out that the dorsal fin needed internal bracing or else the top body looked distorted.



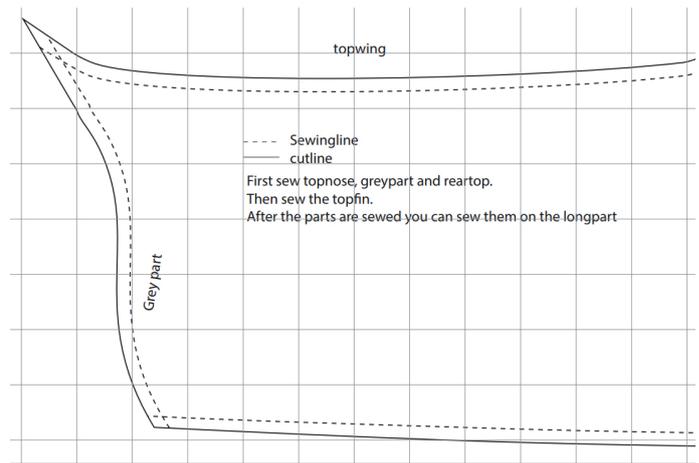
The files

I made template pdf files for every part needed to build the orca. The orca has many different parts which I tried to give logical names.

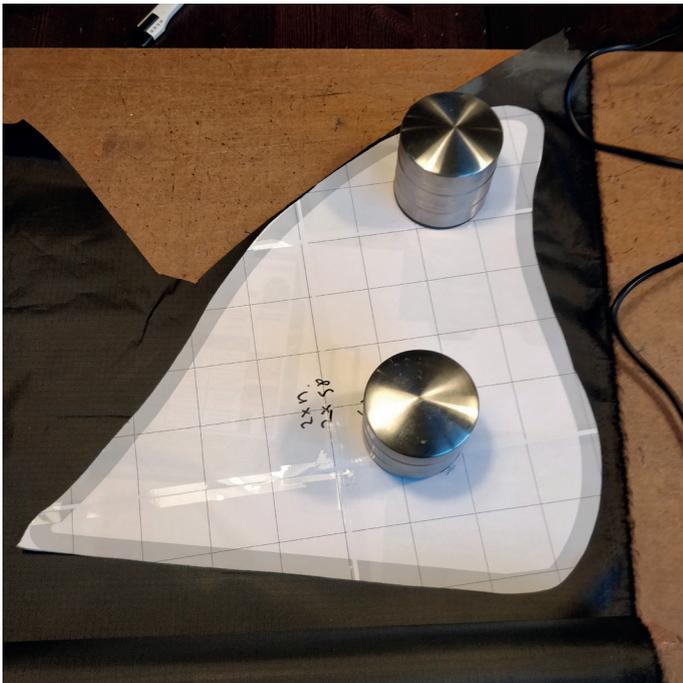
instructions.pdf is this file
00.killerwhaleoverview.pdf shows all parts.

other parts are:

01.topnose.pdf	09.whitebottom middle.pdf
02.greypart.pdf	10.whitebottom rear.pdf
03.reartop.pdf	11.Black tail body part.pdf
04.longpart.pdf	12.mouth.pdf
05.whitemouth.pdf	13.rearfin.pdf
06.sidefinbody.pdf	14.sidefin.pdf
07.tailbodybody.pdf	15.topfin internal.pdf
08.whitebottom front.pdf	16.topfin.pdf



On the pdf files I added a 5x5cm grid so you can measure if your printer is doing a good job. If you print this in poster format and at 100% you should be able to print this out and do not need to measure the grid at all. 9 out of 10 times that worked for me. I also added a cutline and sewing line also tried to add the names of the parts that need to be sewn around those parts. After printing the templates I glued them on cardboard and cut them out that works for me if I want to make more than one.

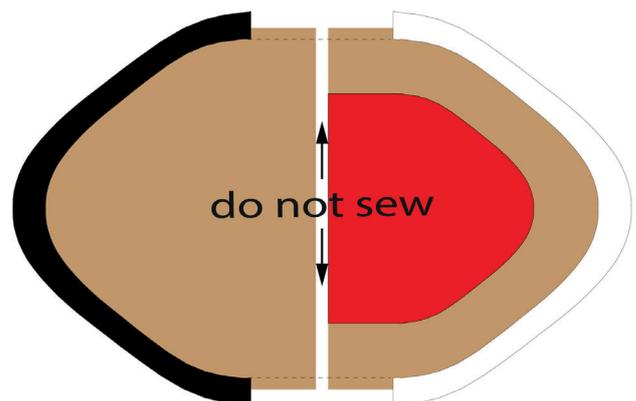


Sewing

I started with connecting all horizontal layers so I was left with a couple of bigger parts.

All stitching is done with a plain seam on the wrong side that in the end will be the inside of the killerwhale.

Also sewing the two tail parts together and last the mouth parts. Then I completed the two sides so then had two bodyparts, two tail parts and a mouth. Then I sewed the fins on the two bodyparts. putting everything together I started bottom up. So first his white belly and then worked my way up. Before closing the Killerwhale I added the mouthpart. The mouth works as a simple valve. Only the sides of the inner mouth are sewed together. when the killerwhale is full of air it will close the inlet due to inner pressure.



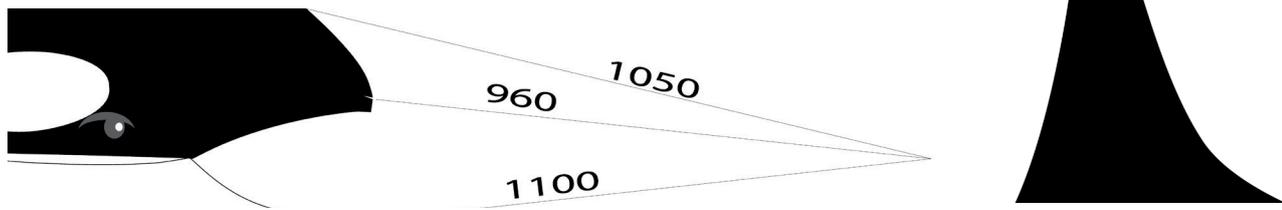
finalizing.

Before closing the whale up I sewed in a zipper for fast deflating. I locate the zipper in front of the dorsalfin. After closing up i sewed in the reinforcement for the dorsalfin.

Bridle

I also added loops for the bridle (make them strong enough if you make a bigger version). I made a mistake with that when I made the 8 meter version!

For stabilizing the small killerwhale you need a extra bridle on the dorsalfin. I added the middle bridle on the nose to keep the head in shape.



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