

# The Ship Builder

*By Arjan Oude Kotte aka Konajra*



As far as I can remember I have always liked ships. I can remember building more ships with my LEGO® bricks than cars and trucks. Don't ask me why, I don't live near a harbour, nor is any family member a sailor. As a kid (I think I was around 13/14 years old) I built a model kit of the Smit Zwarte Zee from Billing Boats. The version with the wooden hull. Nowadays that kit comes with an ABS hull (funny enough that's the same material LEGO bricks are made from). I would rather have built the Smit Rotterdam - the iconic ocean going tug from the '80 - which is even harder to build for a 14 year old. With a lot of help I managed to finish the Zwarte Zee. It sailed in a pool near my house but it was not completely waterproof. The finishing on the model was far from perfect too. By building the Zwarte Zee I found out I'm not the modelbuilder that can make great things from wood or plastic. A lot of the parts were skewed and there were many visible seams, but I was one happy kid. And so the years went by. I got rid of the Zwarte Zee decades ago and discovered LEGO about 5 years ago. I bought technic sets and build them so my sons could play with them. After a while I started to build my own creations, I started with minifig scale mining machines, but when I came across a minifig scale MOC of the Smit Rotterdam on the web, I knew I wanted to build a ship in LEGO too. And from one ship came another and another and...

Whenever I start a new creation I always start by surfing the internet. Because I don't live near a big harbour, the internet is the place for me to search for a ship to turn into a LEGO model.

Over time my ships are getting bigger and bigger. The first one I built was an 80 cm long beam trawler and I'm currently designing a emergency response and rescue vessel (ERRV) that will become 125 cm long and 35 wide. The ships I choose to build in LEGO depend on the fact if the

line plans and general arrangement plans are available on the internet.

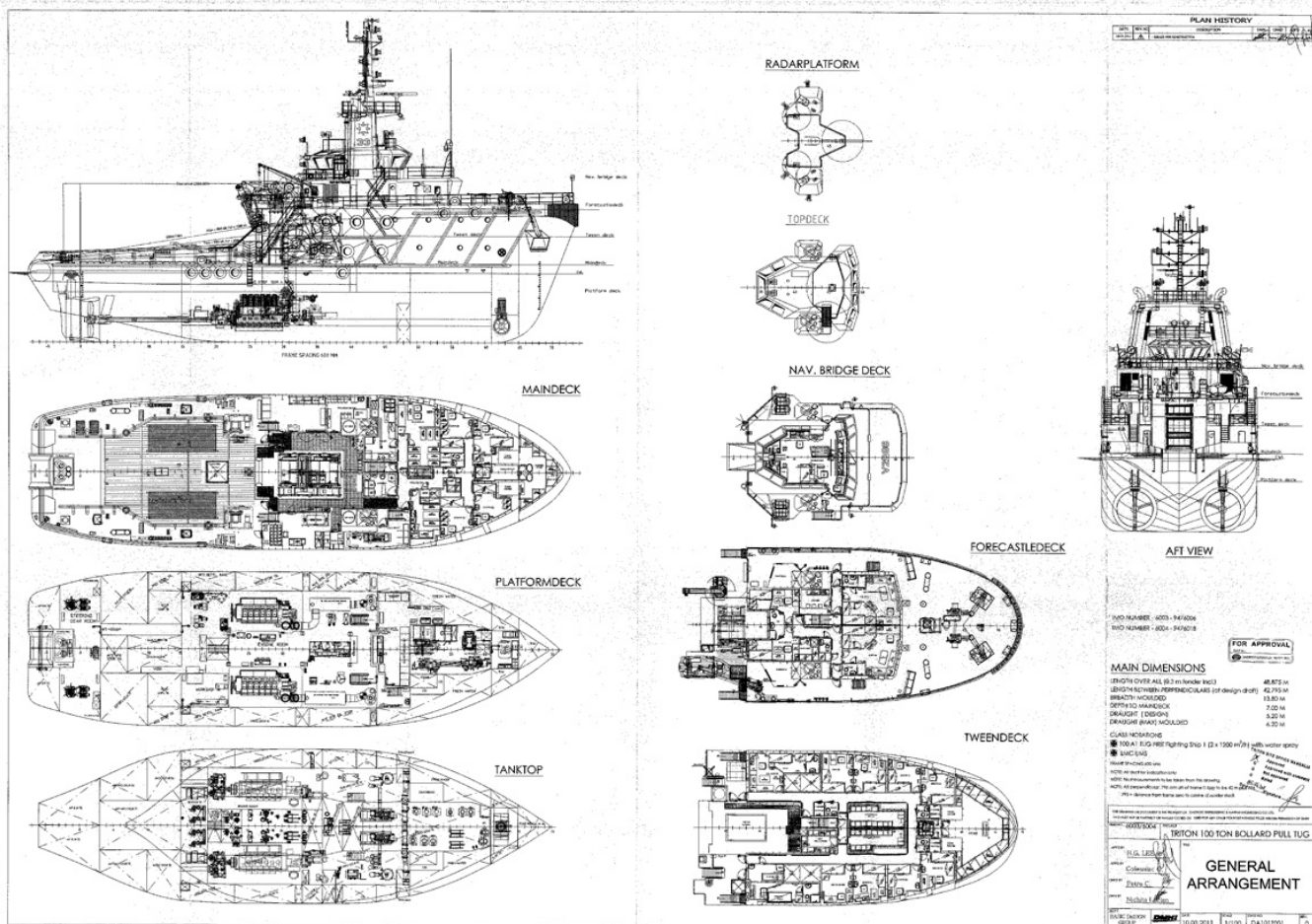
Unfortunately those plans are kept confidential for most ships by either the shipyards or the ship owners. Most of the times I send an email with a request for the plans but I hardly get any response to those emails. However there are a lot of plans available, mostly from older ships, through model building websites, but it is a sport for me to get my hands on plans without having to pay for them.

For every ship that I have build so far the plans were available for download on the internet or were given to me by the ship owner.

The ship shown in this article is a non existing ship, at least in the yellow/black livery I build it in. the ship itself exists in the colors of Fairplay Towage Hamburg, Germany. This model is a copy of my model of the FAIRPLAY-33 . That one was a commission built for Fairplay Towage. Due to the fact that the model turned out so great I decided to build a version for myself. I was asked by Fairplay to build my model in a different color, so that they would have the only FAIRPLAY-33 in LEGO. I searched the internet and ended up with the livery from Viking Supply Vessels AS, based in Copenhagen, Denmark.

I always design my ships in Ldraw first. Not because it is easy, but simply because my collection of bricks is not big enough to just start building or I just don't have the right parts in the amounts I need. At this point designing a ship with Ldraw is becoming easier and easier. With every ship I have designed in Ldraw I have learned new tricks, but I'm still not an expert with Ldraw.

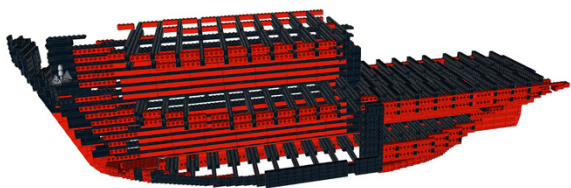
As mentioned earlier I was asked by Fairplay towage to build one of their tugs in LEGO. Until then the biggest ship I had



build was about 100 cm long and 22 cm wide. I started looking at their fleet list and found out they have a fleet of tugs starting around 25 meters and up to 49 meters. I was hoping I would have to build an average sized tug (around 30m), but of course it turned out they wanted their new flagship built in LEGO®: the FAIRPLAY-33

Because this was a commissioned build I did not have to search for the plans on the internet. Only the general arrangement plans were sent to me. The best, and easiest, way for me to build a hull that represents the hull of the ship is by using the line plans. Luckily with a good general arrangement plan it is also possible to build a hull that looks like the real one. For this the general arrangement plans must show all the decks of the ship. From the lowest (TANK deck) to the bridge deck.

I always enlarge the plans in photoshop to a 1:40 scale. I know it is not exactly minifig scale, but at this scale most of the doors of the superstructure measure 2 studs wide; still too small for a minifig to pass straight through, but if I make them any wider the overall look will be off. The doors will look out of place on the completed ship. The enlarged plans are printed on A0 paper by the local copy shop. Now I can copy the shape of the keel and each deck just by simply laying plates or bricks on the printed plans.



The best place for me to start a new design is the bow. I copy the shape of the keel from the bow to the stern with real bricks and copy the shape of the bricks in Ldraw. For my smaller ships I keep the keel one stud wide. for this ship I decided to make it two studs wide, just for the strenght of it. Of course a lot of times I have to use slopes upside down. At first I used the old 1x2 hinge plates to achieve that, but since I found a snot construction with cheese slopes, I no longer have to use those plate hinges. It is not as strong as the hinge construction, but it works well.

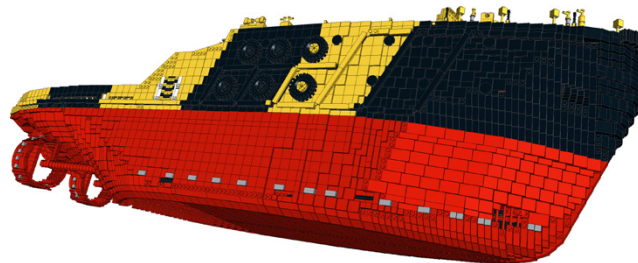
After copying the keel I start on the shape of all the decks. I always copy either the left or right side shape of a deck (Later when one side of the hull is finished I copy the completed side and mirror it. That way I know for sure that both sides of the hull are the same.) When placed at the correct height on the keel, the shape of the hull appears in Ldraw.

Depending on the size of the ship I divide the keel and decks in at least two sections. That makes building and transporting it a lot easier.

The inside of this ship consists of a frame, constructed with a lot of Technic bricks 1 x 16. On the outside of the frame bricks 1 x 4 with studs on side are placed. Those bricks are obviously for connecting the plates and tiles of the hull.

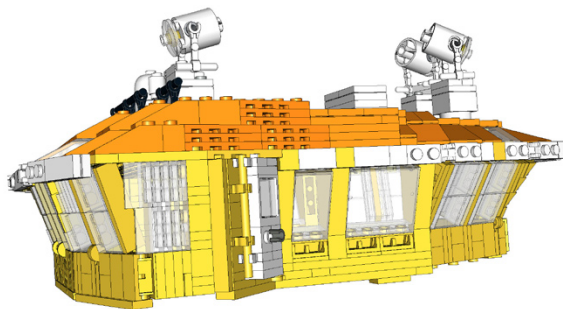
Next is the bottom of the hull. That is the only important part of the hull that is not shown on the general arrangement plan. so the shape is a complete wild guess. I used 2x8 bricks for strength, and created the shape I thought fitted perfectly with the tank deck shape. The bottom shape together with the

shapes of the decks is enough for me to build the hull that represents the ships hull. Now it's just a matter of filling up the gaps between each deck with slopes and tiles to get the desired shape. That means a lot of trial and error. By using all possible slopes in any direction, you eventually will end up with a hull that represents the ships hull in the best possible way.



Some builders say that most of my hulls are too pixelated, but for me it is good enough. Besides that I don't even like designing the hull. It's just that it is the biggest and most important part of a ship but I do not enjoy doing it a lot. I prefer spending my time on all the little details on deck or the superstructure, but without a hull there is simply no ship. I must say though, that I think my hulls are getting better which each ship I build.

The bridge of this ship was a challenging one. I had never build a bridge with so many angles and tilted windows like this one has. For designing the bridge I reversed my method. For once I started out with real bricks. Just to see what angles were possible and to find out how I could close the gaps between the windows. It turned out that this way it was also very easy to find the points where the windows could be connected to the studs of the deck below, so that the whole structure would become strong enough to hold the roof of the bridge. Once I was happy with the result I copied the whole bridge in Ldraw. All that is left now is to just put in as much detail of the real ship as possible without making it too detailed so it doesn't get in the way but looks like the real thing.



The Tyr Viking consist out of apr. 18.000-20.000 bricks and is 125 cm long. It is 35 cm wide and from the bottom of the keel to the top of the mast it is about 70 cm. Designing this model took around 165 hours. Building the model took another 85 hours.

I started out building mining machines, but since I built my first ship I am hooked on ships. The variety in the naval world is just so big, that I can continue to build them without getting bored. However I will never build a cruise ship, luxury yacht or battleship. The reason for that is that I think that large cruise ships are a lot of repeating work, yachts are simply too sleek and I don't like the grey color of battle ships.

The ships I like are the ones that are used to transport heavy things, that get abused, rusted and dirty. In short: work vessels like fishing boats, tugs and all sorts of offshore vessels. I hope someday I'll have collected enough bricks to build the Smit Zwarte Zee, a 200 cm long model. I have already designed the wheelhouse in Ldraw...  
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