



Sailing the seas

Interview with Anders Gaasedal and Johan Sahlström

By HispaBrick Magazine®

Pictures by Anders Gaasedal, Johan Sahlström and Rick Tomlinson

In this issue we have interviewed Anders Gaasedal and Johan Sahlström, the architects of this fantastic project that has brought our beloved bricks to sea, but with style.

It doesn't exactly float, but we can sure imagine it doing so.

HBM: Tell us a little about yourselves, your name, where you are from, what you do for living...

Anders is from Denmark, is 34 years old and work for LEGO as a model coach. Johan is from Sweden, is 47 years old and work for Volvo Trucks.

HBM: How did the idea of this project come up?

Anders and Johan: Well, we've known each other for a few years now. Anders had previously built a 1:10 scale model of the Volvo Mean Green race truck, and together we had been instrumental in getting the Volvo L350F Technic Model project started. So we thought - what do we do now? We both enjoy sailing, and so we came up with the idea of a Volvo



Ocean Race boat. The idea for the project started in mid 2013.

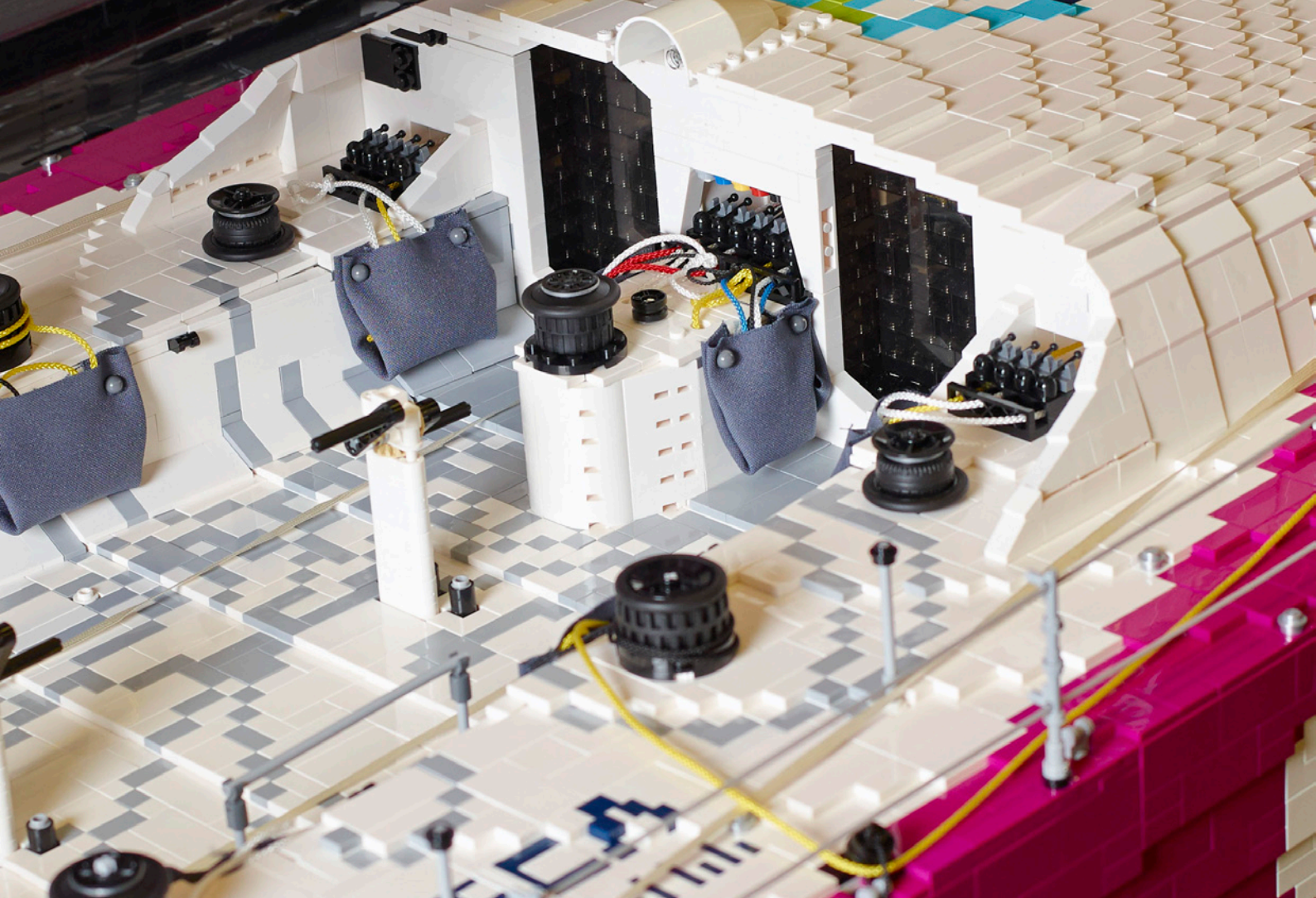
HBM: How did you choose the boat to build? And the scale?

Anders and Johan: When we started out, there were about 4 race teams that had officially applied to be in the Volvo Ocean Race and one of them was Team SCA. We chose that team because we think it was the best looking design and the rare color would give it a special touch.

About the scale, Johan actually had the idea to make it into a scale 1:20 Technic model at first – sort of a wire-frame style model so that you could see all the movements and technology inside the boat. But Anders said “no, no.... bigger is better....and we should do it in System”. And he was right. Bigger was better; at least when you want to make a statement and build something really challenging.

HBM: We know it does not float but, what functionalities have you introduced in the model?

Anders and Johan: Well, it does float....for 3 seconds or so. Seriously though – the entire hull and internal frame is modelled exactly like the real boat. We figured that at one time some clever boat engineer of the real boat had put



the frame sections in exactly the right places to achieve maximum stability. So we just copied that. Naturally everything became heavier and sturdier compared to the real boat which is all carbon fiber and titanium, but the basic structure is the same.

As for functions, one of the really cool things about the real boat is that it has a canting keel, that can be swung +/- 40 degrees to either side. And the keel is also put on a 5 degree incline, so when it's position in the side/up position it displaces its weight a bit backwards for stability, and it glides through the water with a 5 degree upwards lean, giving the boat a slight hydroplaning effect. So naturally we made this exact function in the LEGO® model. Besides that all other feature also work – dual steering rudders, grinders and winches, sails that can be hoisted etc.

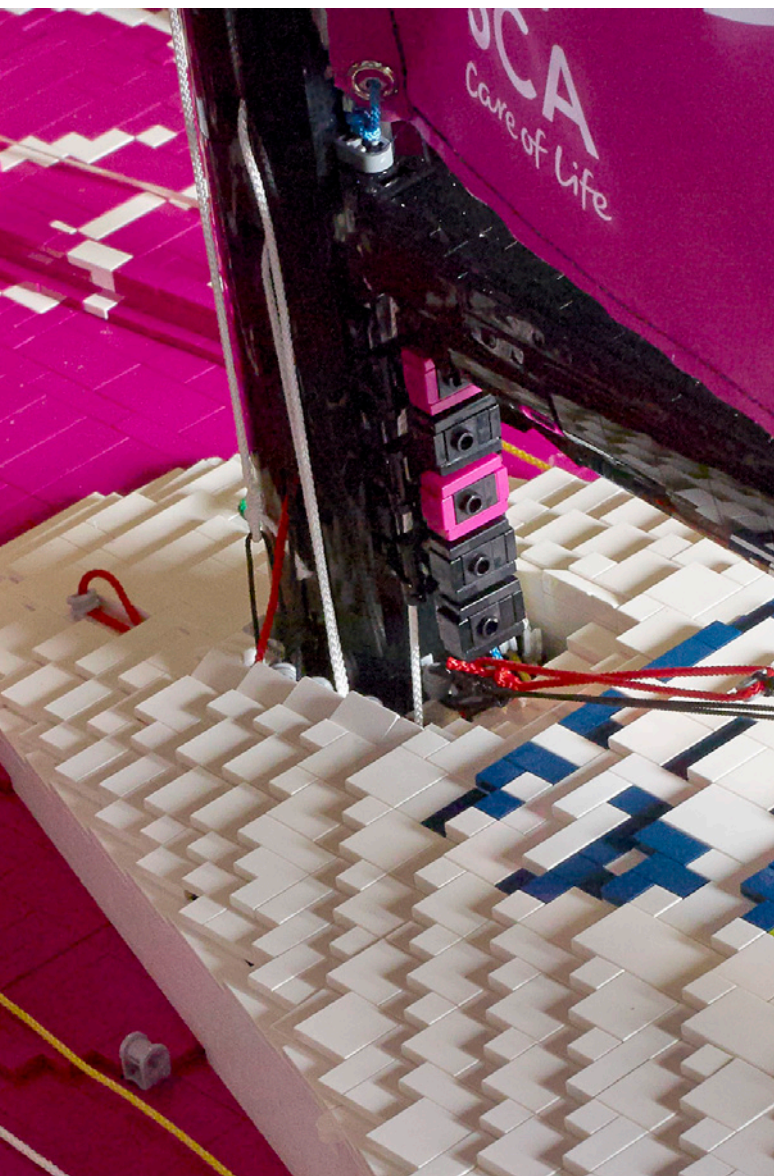
HBM: What are the main difficulties you have met?

Anders and Johan: Making the sail was quite difficult. At the beginning we had an idea to get the sails made by North Sails in New Zealand, and they were interested at first, but it ran out in the sand. And at the same time we thought that maybe it would look a bit odd with a real sail with “carbon fiber” look on a LEGO brick model. So after some time we decided to make the sail from normal cloth and we were fortunate enough to get some help from Anders colleagues at LEGO to print and sew the sail.

Another difficulty was creating the hull shape. We didn't have access to any 3D models of the boat, so everything had to be “hand built”. We did have a few technical drawings of frame sections and hull views, but from there it was all interpolation and manual labor. It probably took us 200 hours just to design the shape of the hull...a huge amount of iterations and test builds. To be honest, at times it felt almost like we had taken water over our heads. Then, to add to the complexity, we decided to do the bottom of the hull studs down, the sides stud-out, and the deck studs-up.

Perhaps just as cumbersome was to get the graphics right. All the logos and text on the boat is brick built, and some of them took 40 hours to design and build. For each side. It was actually so fiddly that we'd almost like to forget about it now. (both Johan and Anders laugh).

And being a bit stubborn we decided to make the entire boat with standard bricks, in standard colors.



Finally, we have to mention the rig. It is also made with standard bricks; no metal rods or similar. The strength comes from the combination of interlocking plates within the mast and the rig lines. The rig lines themselves are also standard black LEGO® lines (the kind that comes in longer lengths). The only problem we had with them is that they tend to stretch slightly after some time being under heavy load. So we had to re-tighten those several times to get them to “stretch out” fully. But they are surprisingly strong those thin lines.

HBM: How have you divided the work?

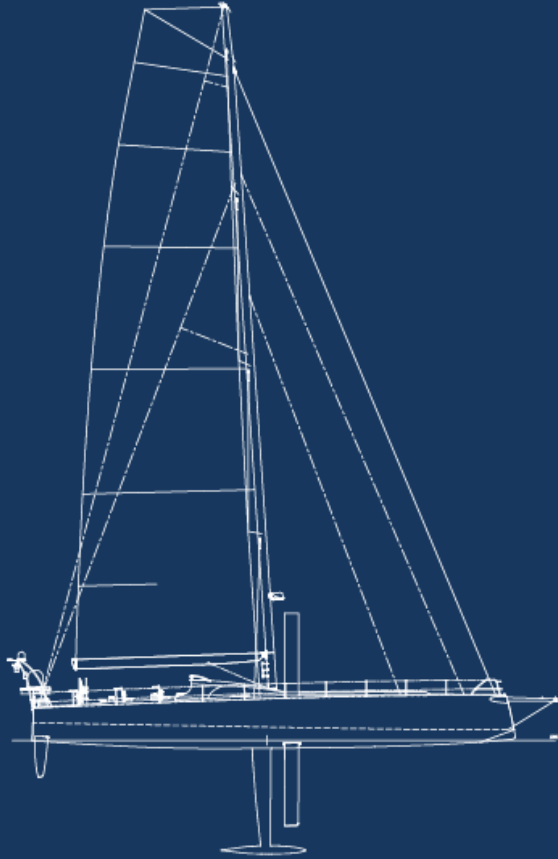
Anders and Johan: Well, we divided it so that Johan did most of the design work in terms of hull shape and placement of the frame section, and getting all proportions right. All the work was done in LEGO Digital Designer, which is a great tool for cooperative constructions like this. Naturally it helped that Johan is a bit of an authority of LDD, says Anders, because we really stretched the capabilities of the tool to the max on this project.

LDD files were then sent (sometimes daily) to Anders who was building the boat with physical bricks in Billund. Anders also did most of the technical solutions around the working features in the boat so he should have most cred for that.

HBM: What are the main technical figures of the model?

Anders and Johan: Well, we actually made a small information sign, so the easiest would be to just copy that in here:

Volvo Ocean 65 in LEGO bricks



Model specifications

Scale.....	1:10
Length Waterline.....	2.00 m (6.5 ft)
Length Overall.....	2.32 m (7.5 ft)
Hull Beam.....	0.56 m (1.8 ft)
Max Draft (Keel on CL).....	0.48 m (1.6 ft)
Weight.....	52 kg (125 lb)
Mainsail Area.....	1.63 m ²
Working Jib Area.....	1.33 m ²
Rig Height.....	3.03 m (9.9 ft)

Working Functions

Canting Keel.....	+/- 40 degree with 5 degree incline axis
Daggerboards.....	Twin forward daggerboards
Rudders.....	Twin rudders
Pedestals & Winches.....	Foot buttons, drive shafts and bevel boxes
Rig Arrangement.....	Twin topmast backstays and checkstays with deflectors
Running Rig.....	Main: Sheet, Halyard, Traveller, Cunningham, Outhaul, Kicker Jib: Sheet, Halyard, Twing, Inhaul

Project details

LEGO Bricks used.....	100.000
Work Hours.....	1200
Designed and Built by.....	Anders Gaasedal - Denmark Johan Sahlström - Sweden

HBM: Where we will be able to see the model?

Anders and Johan: The model will follow the race around the world. If you want to, you can come by the Team SCA pavilion and have a look at it. The ports and dates are as follows:

Alicante, Spain – Oct 2, 2014 to Oct 11, 2014
Cape Town, South Africa – Nov 1, 2014 to Nov 19, 2014
Abu Dhabi, UAE – Dec 12, 2014 to Jan 3 2015
Sanya, China – Jan 24, 2015 to Feb 8 2015
Auckland, New Zealand – Feb 27, 2015 to March 15, 2015
Itajaí, Brazil – Apr 4, 2015 to Apr 19, 2015
Newport, USA – May 5, 2015 to May 17, 2015
Lisbon, Portugal – LEGO® boat not displayed
Lorient, France – Jun 9, 2015 to June 16 2015
The Hague, Holland – LEGO boat not displayed
Gothenburg, Sweden – Jun 21, 2015 to Jun 30, 2015

More about Volvo Ocean Race: <http://www.volvooceanrace.com/>

Small YouTube video about the project also: https://www.youtube.com/watch?v=4iGAVJU_7q0

#

