Nord Icelandia - from Supply ship to Scientific Support ship

Mark Wilkes

Purchased for the sum of £30 off a member of the Model Boat Mayhem forum, all I had was a hull and a bridge cabin that needed some sanding down, and at the price it was offered it was rude to turn it down. After watching a program about exploring undersea wrecks, the idea for creating something similar came about, and so project Nord Icelandia was started.

The Hull is flat bottomed about 30" long and in the region of 6" in beam, with construction being of balsa and light marine ply which has been fibre glassed, which makes for quite a durable construction. At the bow, rather than sheet material, shaped blocks have been used to give extra strength, I presume. Just at the point where the hull steps down, there is a good vertical bulkhead, forming two main compartments within the hull, with a small opening cut in it to allow wires to pass between the two compartments of the hull.

Apart from a small twist in the hull, the construction is pretty sturdy. The twist in the hull is probably because the two sides have been cut differently, requiring butchery and surgery to put right, which as the twist is minor and only affecting the aft portion of the hull, isn't really worth the effort and cost.

← Left Nord Icelandia as purchased originally.

Painting

The colour scheme for Nord Icelandia was planned to be simple, grey decks, red hull and cream superstructure, something that wouldn't look too out of place. The hull had a good rub down, though to start off with, the initial rub-down was not totally satisfactory, though the second one seemed to do the trick. To do the painting, the hull was coated in Plasticote™ Red-Oxide primer, (3 coats) followed by 3 coats of Plasticote™ Bright Red. This was done outside a couple of days before the Blackpool Norbreck model boat show, hosted by Traders "A MODEL WORLD" and the Blackpool and Fylde Model Boat Club. With the superstructure already painted, I chose to leave that superstructure as it was and added just her windows, which annoyingly fogged up with the application of Cyanoacrylate glue. Despite this, the superstructure didn't look too bad from a distance, so until the second superstructure was built it remained the main superstructure.

Right: Nord Icelandia after hull painting →

Blackpool Norbreck Model Boat Show

At the model boat show in Blackpool's Norbreck Castle Hotel, fitting out and construction got underway. Initially the plan was to have a working A-frame on the stern. However, that problem was sunk when the taper in the hull did not give sufficient room to allow for a swing-arm off the deck. The A-frame still went ahead as did the installation of the other running equipment such as motor and ESC (Electronic Speed Control) as well as the receiver for the radio. The Initial motor was a Vision 400 HT, similar to what is in my Graupner Neptun coaster, and as a result I thought it would do the job. Only when I powered her up for the first time in the bath I found I had made a bad purchasing decision.

First thing to be installed was the propeller shaft, using Araldite epoxy adhesive to secure it, and an elastic band to hold it in place as the adhesive cured. Whilst the adhesive cured, I spent time getting other bits together such as styrene sheet and sections, along with some other fittings from warship supplier *PS SHIPS / Sirma.* These fittings were two boat cranes, RIB Boat and a SCOTT-antenna.

Once the prop shaft was installed and the epoxy cured, the time came to move onto the next phase, installing the motor mount. The Motor, a low-rpm high torque version of the standard Mtroniks Vision 400, shares its can size with regular 380/385 sized motors. As a result it can use regular 380 motor mounts, and indeed that's exactly what I used. In short terms, the 5 in 385 signifies it as a 5-pole motor as opposed to the 3-pole 380, making for lower current draw. The motor mount sits on two pieces of ¼" timber, required to raise the motor mount above the raised keel to protect the integrity, and also reduces the chance of the mount screws penetrating the hull, something that would really ruin your day if it happened.

With the prop shaft installed, the servo was installed, mounted on its side on the right hand side of the hull, the linkage to the rudder being two linkages joined together with an electrical connector, the type that normally comes in strips and has a screw in each end. This method of connector, as opposed to using a double-ended threaded bar and two screw-on connectors enables fine adjustment of the rudder without the need to disassemble the mechanism. The connector slides over both bars and the screws apply the gripping force needed to keep them in place where, this setup makes post maintenance setting up much easier.

Stern Frame

← Work at Blackpool show

Located at the stern of the boat is a large A-frame, similar to what helps launch small submersibles craft, such as Ifremer's *Nautile*, and the Woods Hole Oceanographic Institute's *Alvin.* Both vessels are capable of diving to around 3km. The initial A-frame was made of an I-beam on each side with a pair of telescopic arms, which in mark 1 format were quite long. And made some comments were made indicating that the frame may be a tad out of scale. This was later rectified after the show. After the A-frame at the stern came the hangar box, which is after all nothing more complicated than a plastic box glued to the removable deck, construction of this part took a couple of hours, and altered the appearance of the model quite substantially.

At this stage, the ship began to look more like an ocean survey and scientific support ship, though building a model at a model boat show, I felt like a big brother housemate, as I was doing the work in front of several thousand people, so if anything had gone wrong, it would have been VERY public.

The telescopic rams were quite simple, a piece of aluminium tube sat inside a piece of styrene tube, giving the impression of a thick walled hydraulic ram.

Once the box was made, because of a lesson from a sinking of someone's model slipway "*Aziz*", I also added a bulkhead at the aft end of the fantail, just ahead of where the airframe sits.

Arriving home, Nord Icelandia got ballasted out and wired up. First to be done was the wiring one suppressor across the contacts. Wire used in this case was nothing more than 13amp domestic wiring, perfectly adequate for this kind of boat. The wires that I chose to use were 12" long and were fed through the small hole in the bulkhead. The Speed controller, a Viper15 made by Mtroniks, had the bullet connectors cut off, and the motor wires and ESC wires joined in a strip connector. Experience from my Yamato has led me to believe that these connectors, for light amp loading, are perfectly safe for the job. In the front section, the ESC and 7 channel receiver sit in the cheek pockets in the bow, formed by a bulkhead and the keel. Once wired up, the ESC was set up. This in itself is a simple task, taking only a few seconds.

ESC Setup The Viper15, just like its Marine15 forebear, has a small button on it marked "set", which turns on the transmitter. The task is then to turn on the radio by turning on the ESC, as the Viper15 sends power up the 3-wire servo lead to power the receiver. As soon as it's turned on, the two lights on it flash in rapid succession and it's during this time that the set button must be pressed. After pressing set, push the throttle stick all the way forwards and back to neutral, then from neutral, pull it all the way back and then return it to neutral, making sure that if you have any trim on throttle that they are set to full centre, and if you have a computerized radio, the EPA or End Point Adjust, is set to 100%. Once this is done you have set the ESC up and will have a steady green and red light on the ESC.

Ballasting

This is the critical stage of the model as it is here that she gets her hull wet for the first time. The trick here is to put her battery in its final position then apply lead or steel to where ever needed until the model is stable and drawing about the right amount of water (in this case, around 2 inches). This took less ballast than I expected. Just 4 small strips of lead, perhaps a little bit more than the Neptun but not a great deal. Fully ballasted Nord Icelandia tipped the scales at 4kg, just 1kg heavier than the Neptun, which is made from ABS, not fibreglass coated timber.

Power and sea trials

Nord Icelandia was now ready so, in the bath just after ballasting, the first test of her motor was given, and yes, it spun up. However, such was the low RPM of the motor, the 5 bladed propeller did not even move her, so the decision was made to re-motor the ship, using in this case an MFA380 (as it's what happened to be available at the time) and fitted the motor mount, which just required some soldering on of new wires. At this point she was ready for the water. Initial testing was done with a coarse pitch 3-bladed propeller used on my E-boat.

Nord Icelandia on the water for her sea trials

The sea trials for Nord Icelandia went well, and it was during this phase that I set up the end points. During turns the hull tended to lean over, which if such a manoeuvre was done at maximum speed, the hull could tip and sink. The EPA is set around 30% for forwards and 50% backwards, to give the ship the ability to stop in an emergency.

I did find that the double Universal joint, made by Roebesch tended to growl quite a lot, detracting from the overall performance of the model. I also found out that she tended to wander, even with this low-front superstructure.

After sea trials with the original superstructure came the building of her final superstructure, which takes it now to what would be a more realistic size. This was done totally freehand. To start it all off, a piece of 2x1 pine was used with two slots cut into it to act as locating keys, from there the ship began to take shape. As with the Blackpool show, the tools used were a Stanley knife and a steel rule, with a telescopic pencil used to mark lines out because of its 0.5mm nib.

At this stage the ship is beginning to take shape, though her A-frame is still large, and would soon be cut down. The sides and front of the bridge are made from double-layer styrene, the first layer acting as the window layer, with the outer layer forming the actual walls. The recessed area became black and formed the windows.

New Superstructure

Much like the aft bay hangar, the new superstructure was made from ABS, and is little more than a big box, to make my first semi-scratch as easy as possible. After cutting down the A-frame, rather than throw the scrap away, the crossbar sections were recycled and re used in the new version

In the image to the left, the individual framed windows of the bridge can be seen; also the reduced height of the A-frame can also be made out. Sailing with this new superstructure has increased windage but not significantly affected the ships centre of gravity.

Over the next few days, the ship progressed further, taking on its colour scheme of cream and red, with orange band above the windows. After sailing with her universal joint, I made the move to cut down a propshaft that I had spare and a silicon coupling to make my own coupling, the net result is one that is much quieter than the original Universal joint.

The Verdict

Conversion from a simple off shore supply ship to a survey ship may not be everyone's cup of tea but as a first semi scratch build, it is a challenge that I have come to enjoy, and now with just minor detailing and tidying up to do, I am happy with the results. Would I do it again? The answer is, probably

Mark Wilkes, for Model Ship World