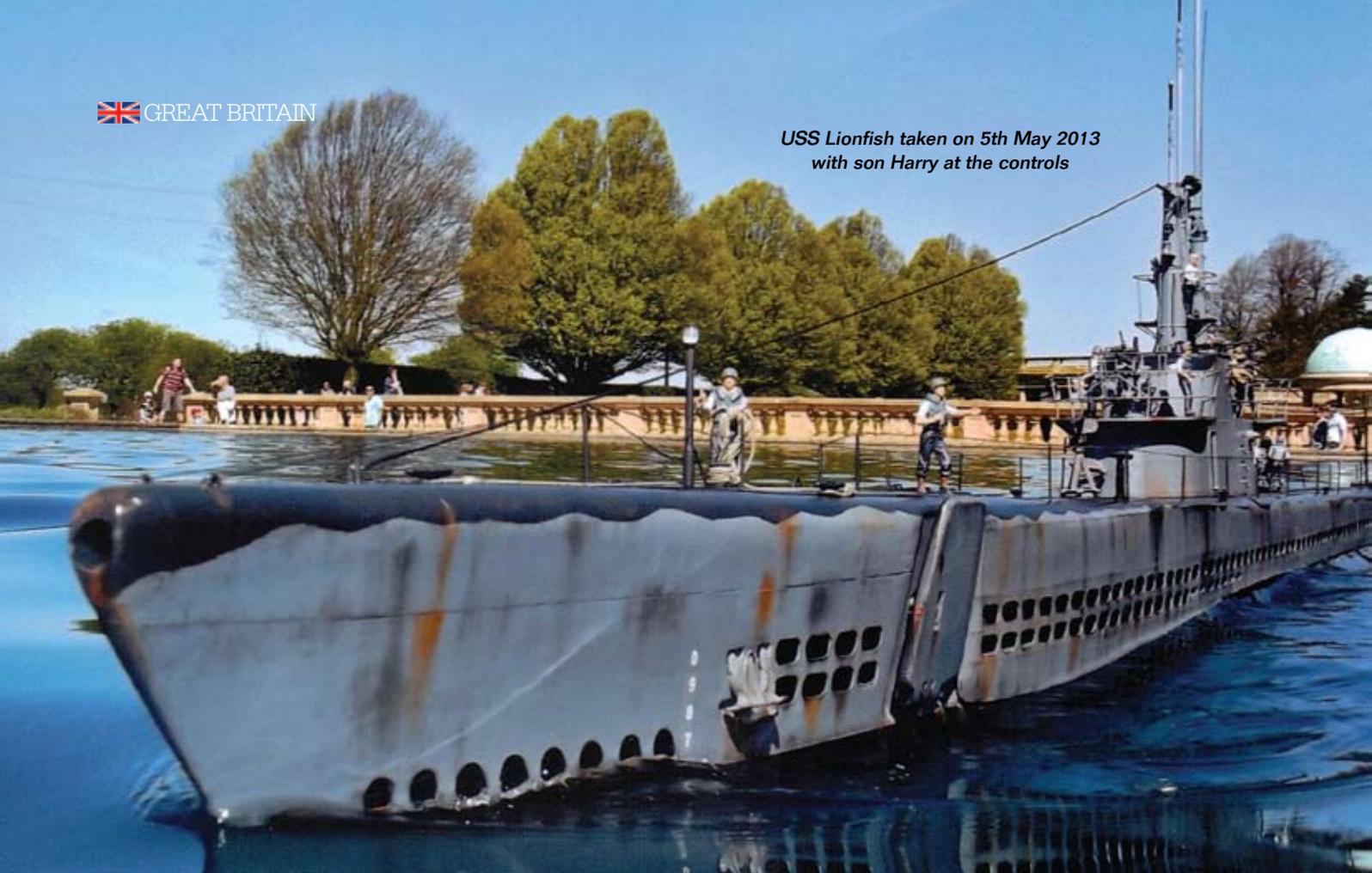


*USS Lionfish taken on 5th May 2013
with son Harry at the controls*



USS LIONFISH – PT 3

IN THIS THIRD AND FINAL PART, PAUL DESCRIBES HOW HE SOURCED AND ADAPTED MATERIALS FOR ALL THE FITTINGS AND THEN SAILS THE SUBMARINE

AUTHOR: PAUL COOK

SCALE FINISHING ((LF 33 TO LF 40))

Over the earlier months, while building the model, I had sourced various model boat fittings and odd parts to make into scale fittings for the model. Using bits and pieces of brass, Plasticard and commercial fittings the model started to transform. You will see from the photograph how these fittings were used on the very forward bow section of the deck. The familiar 'bull nose' on the Gato class boats was recreated by a tube through the very nose of the model up to the deck. Deck vents were created using tube and brass wire. The navigation lamp is a commercially available item from Graupner – the boat also has a fully working navigation light system. The anchor, as you will see, is mounted on the portside and this is very important if you're going to select a model built in a specific dockyard as different dockyards fitted such items in different positions. The USS Lionfish was built at the Portsmouth navy yard, which fitted anchors portside. Also in the photograph, on the very top of the deck, you will see more lithoplate used.

As I have already said, the main hull was plated with lithoplate; this was used to simulate the welded hull pattern on the main hull itself. The above waterline and deck section, however, were different as these were panelled and riveted. When Ron Perrot had plated the conning tower panels, he also riveted the panels. I could not leave the upper parts un-riveted, as it would have detracted from the rest of the superb job Ron had started and I would have felt that I only did 'half a job'! The next few weeks I spent measuring and cutting lithoplate panels to fit the upper sections; made by marking and scribing the lithoplate. Gentle scribing gives the effect on the front of a panel line. Next, following the pattern that Ron had used on the conning tower, I replicated the rivets down each panel line – I initially

made a small tool in order to do this job quickly and efficiently, however, after a couple of accuracy failures, when moving the tool to the next panel, I decided to do each rivet by hand, one by one.

As you will see in the photographs there is a 10.5 cm or 4" distance with hand stamped rivets on – count them and then imagine the boat has two sides, one deck and is 9 ft 9" long. Most of my model boating friends and work colleagues thought I was totally mad! To be a model submariner it does help to be mad in my view!

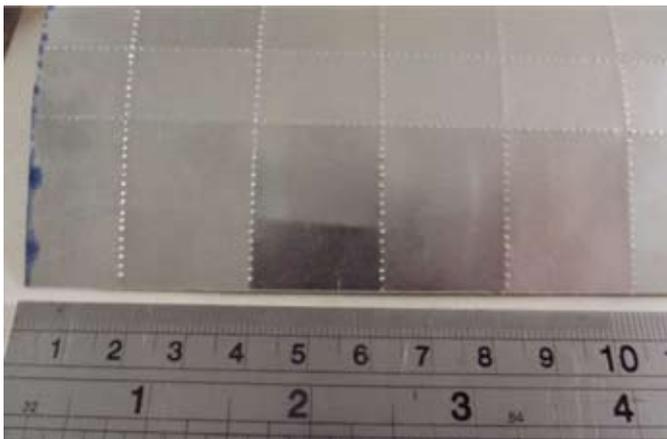
To complete this job took several weeks, doing it the odd evening here and there after work – my wife, Laura, offered to help too (I think it was to speed it up as she was getting bored by this point!). You will see in the photograph Laura is demonstrating the technique



Scale fittings to bow deck section



ABOVE/BELOW: Riveting by hand!



One completed panel with just over 2000 rivets



Cutting out the limber holes

used to do the rivets.

Another photograph shows a completed panel alongside the forward top deck, with a photo of the real USS Lionfish's bow section used as reference material. The panel in the picture has over 2000 rivets on it.

Once each panel had been scribed and riveted, the limber holes had to be cut away. This was done very easily by gluing each panel (containing 2000+ rivets!) very carefully into place. Care was taken to ensure that each panel and scribed line of rivets lined up with the panel next to it.

This, as you will see in the photograph, was done quite simply with a sharp scalpel type blade (and a glass of refreshment!). After several years of work, the model was beginning to appear in all its glory! The completed top forward deck on the forward section of the main hull can be seen on my driveway at home in the photograph.

The rear 'metal' deck section of the USS Lionfish (some full size boats are) is not planked with wood. These are simply drilled with holes. Once again using full size pictures, these were replicated on the model.



Completed forward deck section



My wife, Laura, helping with the rivets!



Aft 'metal' deck drilling



Close-up of the bridge, planking can be clearly seen, along with 50 cal guns



20 mm cannon deck mount, with diagram and crew

The completed conning tower and me



The three basic guns that Ron Perrot had made



Close-up of the 5" deck gun, once painted and weathered

COMPLETING AND PAINTING THE MODEL

Once the deck sections had been completed, I continued with scale detailing, finishing and painting of the model. The conning tower was the first to be fully finished with bridge controls and the TBT (Target Bearing Transmitter). This is the binocular looking device.

In several of the photos you will see that there is a pair of 50cal guns mounted on the side of the bridge. These were removable guns on the real boats and were taken down when submerged. There is video footage online to support this. On the model I have also made them removable, as are all the guns if needed. The removable bridge guns were Academy 1/35th plastic kit fittings commercially available from Hanants.

The planked wooden decking in the conning tower was completed by Ron Perrot when he had the model, before I purchased it. The photograph shows the size of the conning tower complete with 40 mm Bofors guns – the wiring you see is the main navigation light wiring and bridge Morse signal lamp wiring.

All that remained to be completed were lots of small minor scale details: 20 mm cannon, hatches, jumping wires, handrails, etc. The 20 mm cannon deck mounts made from brass and lithoplate are shown in more detail in the picture.

One of the things that I have noted over the years is a lack of crew on many model submarines when they are surfaced – my own included! For a U-Boat, German tank crew can be re-painted and modelled to suit. But my US Navy sub was going to be a different issue – or so I thought! Around the time I started this boat, Italeri released a 1/35th scale US Navy PT boat, along with a crew as a separate kit. What a godsend that was. I obtained two sets of ten US Navy gun crew figures, swapped around the arms, binoculars, and the shells they were holding on a few of them, so that way I did not have five sets of identical twins on the same model! I could at last crew the magnificent guns that Ron had made for the boat. Some of the Italeri gun crew were posed holding ropes and doing other jobs. My aim was to make the model look very busy when fully surfaced. I also managed to find a rare MB plastic kit set called War Waves from Hannant's of Lowestoft that contained two US Navy Ratings and two US Navy Officers, along with two female officers dressed accordingly all at 1/35th scale. The female officers were obviously not used. Unlike many model submarines, this one was going to be alive with crew.

A photograph shows the three guns Ron had made, with a coat of grey metal primer on. The main 5-inch deck gun to the left, with the two conning tower mounted 40 mm Bofors to the right. There is a close-up of the fully painted and slightly weathered 5-inch main deck gun. To Ron's credit I am going to point out that the gun tilts, rotates, recoils and the barrel is rifled out – yes rifled! This gun is a masterclass of a model, it weighs 314 g (or 11 oz in old money), heavy yes, but that is representative of the boat that it sits on. The 5" gun, when not in use, has its own case in the conning tower, which is also removable.

At this point, the time had come to see what the model could do – it was early May 2012 and the test run was due.

TEST RUN ON WATER

It was the 13th May 2012, the weather was good, and it was time for her test run. A photograph was taken that morning alongside the car just for posterity. Now I bet I know what you're all thinking, "How is that going in there?" Another photograph taken some weeks later shows you how!

I was hoping the test would be a low-key affair, with not many people I knew at Eaton Park. That way I could sneak home without people knowing it had gone wrong! This was only to be a surface trial run to see how she handled. The pictures show friends – Geoff Johnson, Dennis Pond and Neil Gunn – all looking into the hull and the initial launch, buoyancy of the model, and it powered up for the first time in water. The model did sit a bit high in the water, but bear in mind there was no deck or tower on at this point. It was always my intention to have this model sitting high – it shows its presence



The Gato and my car!



How the Gato fits into my car

the more of it you see. The rudder control on its own was superb, the mixing of the throttles was superb and she could spin on the spot. This I never actually expected to happen, but it does. The speed of the model on both throttles is brisk and can be very easily turned down. On one motor at full throttle she runs at a brisk walking speed. The handling was incredible!

As it was going so well I plugged in the 12 volt supply to the twin independent trim tanks to see what they would do. I flooded them both to full, which at 1 litre each lowered the hull down a bit as you would expect, as was my intention all along.

Emptying the stern tank, the stern rose up by 1 cm, bearing in mind she's just over 3000 cm long! Re-flooding the stern and emptying the bow tank gave me some very good options to play with.

At this point I decided to plug in the main ballast pumps from the 12 volt supply 'Y' lead. Flooding the main tank was going well, although I was not intending to submerge on this test. By this time most of the model boat club had appeared as many of them had heard that the nearly 10' beast of a submarine was on the water. Just as I had, they had waited several years for this moment. I continued to do various onboard tests – checking amp draw, voltage and power consumption. I had in fact dropped some of my electric flying onboard trickery into the model for this test.

After about 2-3 hours of testing, chatting to onlookers and club members it was time to call it a day. The model was retrieved from the water. The forward and after watertight lids were removed, the interior was bone dry, a very good start at least. The power supply from the main 6 volt 12 Ah batteries had hardly been touched according to the onboard electronics! The 12 volt ballast and trim batteries were the same – this model would be able to run all day long!

After this very successful test run, the model was taken home and given a thorough check over. On inspection I found that one of the main drive couplings was slipping on the grub screw that held it tight, this was cured simply by filing the flat that was already there a bit deeper and applying some thread-lock. I re-jigged a few components that I was not happy with and gave every rubber seal a good inspection. Over the next few weeks I completely finished the model, checked it and checked it again after having made a few fine adjustments. The last remaining job was completing the weathering on the entire model.



ABOVE: The first time at Eaton Park, Norwich

THE LAUNCH OF THE COMPLETED MODEL

The model was fully champagne launched on 1st July 2012. This time my family were there. I had worked on this model for the best part of six or seven years, doing a bit here and there.

The pictures show close-ups of the tower, deck and crews. You can clearly see the panelling and rivet detail that has come out so well. On subsequent runs over several weeks, the model performed very well. Submerged running is very docile and the roughest of water does not seem to affect it, as someone recently quoted, "The water moves around it, rather than it moving around in the water" as you would see on many light models. Bearing in mind that this model weighs in at 40 kg dry, it is a two-person lift to get in and out of the water.

Also shown is the finished and fitted 5" deck gun with crew at action stations with spent shell casings littering the deck behind the gun. These are simply fitted onto the deck with little pins as are all the crew to make them stay in place and are very easily removable in a short space of time. There is a close-up of the 20 mm deck



The Champagne launch of the fully completed USS Lionfish SS 298



ABOVE/BELOW: The tower fully crewed



ABOVE: Taken on 1st July 2012



Ron's superb 5" deck gun, with crew



The 20 mm deck cannon

cannon. I was quite pleased with how the mount came out on this model – the US Navy very oddly chose a different style mount for their guns to most other navies, which present a different challenge.

Over subsequent weeks, the model had been further refined. My son, Harry, who is now 10-years-old has had his hands on the transmitter and got to grips very well with all the controls – many of the Norwich Model Boat Club's members commented on his handling of such a large model at Eaton Park, Norwich on a less than nice September day. My newest, youngest son, Jamie, born in August 2012 is pictured at the September meeting at Norwich, giving you an idea of the size of this model when the conning tower is nearly as big as a 7 lb baby!

As the weather changed pretty quickly after the Norwich



My son, Harry at the controls



My wife, Laura, with youngest son, Jamie, and middle son, Harry giving scale to the boat



Submerged shots in the depths of Eaton Park

Warship day in September, I was not able to get any decent clear underwater shots – the pond being murky and the light being not so good does not help! Over the winter of 2012/13 I did a bit of tweaking inside the boat and got hold of some more crew by chance. On 5th May 2013, my club in Norwich held the first warship day of the year – it was bright and warm and the boat was ready! I managed to get a few decent underwater shots, although due to the slight murk had to get close in with the underwater camera.

My son, Harry, once again took the controls for me to get the bright and very clear shots on the surface. The model handled perfectly, in fact, Harry himself said it steered better as we had tweaked the computer mixing to give the inboard reversing motor a bit more power. We also mixed in a few degrees of down bow plane when flooding the main tank; this seemed to help force the air out from under the deck quicker. He also practised his Morse code by flashing the lamp on the bridge – we had not set this function up last summer!

CONCLUSION

All in all it's been a challenging but good model to build, it took its time but I got there in the end. I think in essence it pays not to rush such a project – research it, plan it and think about, long before you even touch it!

I would like to thank my wife, Laura, for putting up with me being in the garage at sometimes 6 am before going to work and then sometimes until 11 pm after work, helping with the rivets and putting up with often having the 'beast' in the house! My thanks to my son, Harry for his help and a pair of hands at the pond side, plus his superb handling of such a model at his young age.

Finally a big thank you to Ron Perrot for starting the tower and guns in the way he did.

Next to build: the 32nd Parallel U-Boat, but I need a rest!

Until next time, goodbye! **MMI**