



The Final Return: A U-Boat Diorama

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Accurate Model Parts

Models by Julian Hoyes and Dougie Martindale



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Part I - Introduction

Some models take longer than others to complete. A few are fun little “weekend builds” chucked together with haste before the next working week begins. Others are super-detailing projects, crafted with attention to accuracy over several years. Then there are two-metre long U-boat diorama projects. You start as a reasonably young man with the world stretching in front of you but by the time you finish you are a middle aged man with grey hairs in all the wrong places. This build - The Final Return diorama - is the latter, built in stages over about 14 years. The original dockside was built by Julian Hoyes, to which I added additional parts, the U-boat and the water.

The project began with the purchase of Accurate Armour's 1/35th scale waterline Type VIIC U-boat. This resin and white metal kit was designed by Jon Bottomley in 1996, some seven years before Revell's seminal 1/72nd release brought hordes of interested modellers into the world of U-boat modelling. In terms of accuracy there are several issues of concern to U-boat fans. With the exception of the inaccurate deck pattern these are mainly correctable. Despite these niggles the 74" resin kit can make for an impressive build when completed.

The advert

My initial intention was to build the kit as U 94 and design custom decals for the little rodent tugging at the British bulldog. I knew of Accurate Armour's companion piece D14 - advertised as “the complete European Quayside” - but had no plans at that time to purchase this kit. At this point my project swerved in a different direction when I happened to spot an online advert by Julian Hoyes:

“A beautifully detailed and painstakingly constructed quayside to accompany a U-boat for static display. Ideal for U-boat enthusiast with own model, or to add to new project. Built to a very high standard, using a modified Accurate Armour quayside and 65 [sic] 1/35th scale figures. Painted very accurately, this diorama depicts the last days of U 96. A medal ceremony, more young sailors arriving, threat of aircraft overhead, etc. A detailed radio room with lighting, moving crane with interior detail. A labour of love, and an unusual piece, it got major interest at the show in Birmingham 2002 and got a silver award. The boat, which is a radio-controlled model, is on Ebay as well as a separate sale item.”



Above (1): Within Accurate Armour's premises lies their 1/35th scale waterline Type VIIC U-boat next to their modular European Quayside kit. These are the two main kits which form the basis of The Final Return diorama. Although the conning tower can still be purchased, the final production run of the U-boat and quayside took place in late 2018.

Around the time the advert was posted I had begun work on a comprehensive book on U 47. At that early stage the plan was to include an appendix section on how modellers could convert a range of model kits into U 47. I thought that the centrepiece of this appendix section could be a U-boat diorama, consisting of an updated version of Julian's dockside with a U-boat which I would build as U 47 at Lorient on the 6th December 1940. Rather than U 94, the U-boat would need to be converted from a Type VIIC into the VIIB U 47.

I managed to buy the item on Ebay for a reasonable price that was less than the total cost of all the parts. If I remember correctly, the builder, Julian Hoyes, was moving abroad and needed to sell a few of his models. I was fortunate enough to purchase his dockside while someone else paid a substantial amount for his U 96 U-boat model. What made me decide to purchase was the scratchbuilt crane, which is the true star of the dockside. As we will see, there were other items such as the multiple figures (at that point 51 rather than 65), four vehicles and several large storage crates.

The standard of Julian's work was very high. My own input was going to be in adding a U-boat which would be corrected and improved to make it accurate. Additionally I would add details of my own while trying to keep to his high standards. Although my own modelmaking standards fall below Julian's, my hope was that an accurate rendition of U 47 (which required modification from VIIC to VIIB) might make it worthy of placing next to Julian's very fine dockside.

Historical accuracy

Although the U 47 model is a reasonably accurate rendition of the boat on the 6th December 1940, the dockside scene is, without question, inaccurate in terms of historical truth. There is a contradiction here. Why strive for an accurate U-boat and place it next to a diorama scene which takes liberties with historical accuracy? The answer is, I guess, because depicting a real scene would not have been so much fun. Planning the scene and adding more details was the truly fun part. The fact that there was no railway track next to U 47 when it docked on that cold day is freely admitted. But adding the railway element was great fun and visually appealing.

The date chosen - 6th December 1940 - was the final return of U 47 to European shores before her loss on the final patrol. There is a poignancy involved given that the majority of the crew would be lost three months later. Choosing a real date and location might be regarded as a mistake because it showcases the deficiencies in terms of historical accuracy. However, I always advise U-boat modellers to choose a particular boat at a precise time and am too well versed in this mindset to adopt a different approach. Despite my usual approach of striving for accurate models, I fully acknowledge that this project has major limitations in terms of the reality of the dockside scene.

Finally...

In this article I would like to relate how the project was completed, with particular emphasis on the U-boat element which may interest U-boat enthusiasts more than the diorama scene. I dipped in and out of the project over an extended period, my lame excuse being writing five books, various articles and stories, a 5-foot long radio-controlled submarine, research and design for AMP and a magnetic attraction to the modelling table which saw me build around 50 other models. As with the book, I finally got there, completing the U-boat diorama in December 2018. The U 47 book - *Günther Prien and U-47: The Bull of Scapa Flow* - was completed a year earlier and published in 2018 by Frontline Books in the UK and US Naval Institute Press worldwide. The appendix section on models had to be cut as the word count of the finished book was already substantial. The U 47 model therefore did not feature in the book, hence why it instead features within this article.

Acknowledgements

Obviously I would like to thank Julian Hoyes for his dockside, which is undoubtedly the centrepiece of this project. I only hope my accompanying U 47 model does justice to his work. Furthermore I would like to thank Accurate Armour for producing the kits and for allowing me to visit their premises.



Above (2): The completed dockside diorama of U 47 at Lorient on the 6th December 1940. Although care was taken in terms of the accuracy of the U-boat, a wide degree of artistic licence was taken in regard to the dockside diorama scene.

Part II - Julian's Dockside

The original dockside

The original dockside, as built by Julian, is of modular construction and consists of six modules plus two quay end defence modules totalling 197cm in length. Julian bonded the dockside modules to an aluminium girder to avoid warping and to ensure the whole piece is sufficiently strong. He found that the fit of the modules was inaccurate off the shelf and had to return three sections for repair. They were then a perfect fit and were bonded together with lots of resin adhesive. Texture was added to the road sections as they were previously deemed to be too smooth. Interesting elements that were incorporated includes bomb damage at the right hand side, a scratchbuilt crane, a radio room with working light, a blocked toilet, washing facilities and 37mm anti-aircraft gun.

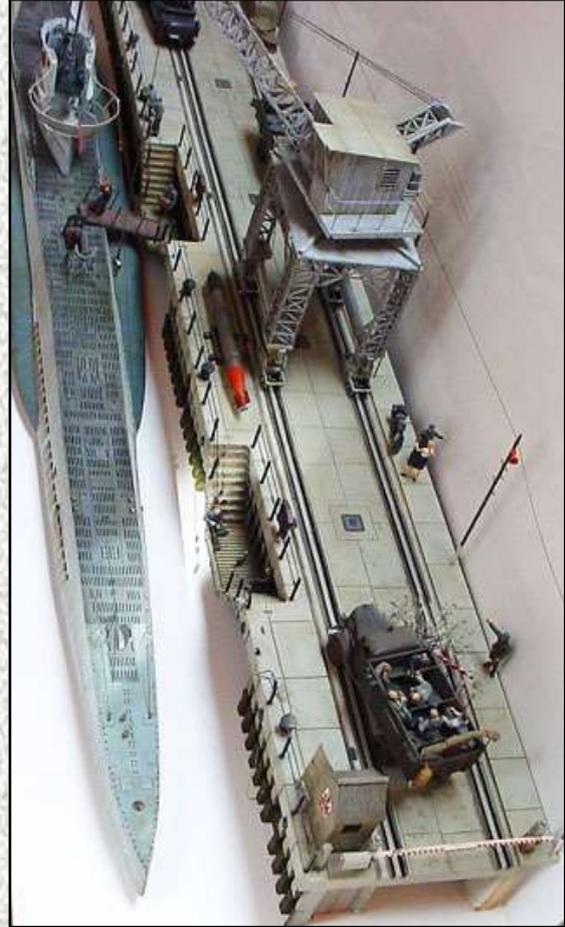
Brainless courier

Usually you can hide models under your jumper when sneaking them up the stairs. Not this one, evidently. Given the length and weight (increased due to the aluminium girder underneath) this was not going to be posted in a parcel. Julian built a solid box sheeted with plywood and secured the dockside to the base. Then he added appropriate signage with markings such as "Fragile" and "This Way Up". All the items inside were bubble wrapped and packed extremely well by Julian. There was nothing more he could have done to prepare the dockside and associated parts for a safe transit. Unfortunately the courier took it upon themselves to ignore the markings and decided it was good form to drop the box, turn it upside down and then boot it with steel-toecapped Doc Martins and other such behaviour as befitting a Neanderthal rather than professional courier. Crucially there was nothing that could not be fixed (other than the irreversible brainless stupidity of the idiot courier).

Despite the initial disappointment in regard to the breakages, I now had a ready-made dockside which I could repair and add to in the years to come.



Above (3): The left hand side of the original dockside section, as built by Julian. Compared to the final version, this area is presently devoid of colourful rubble and has no pavement section behind it.



Above (4): This shows the original dockside next to Julian's U 96, which went to another buyer for a large price. This side of the original dockside is also more barren, having fewer figures and no welding repair team. The guard hut in the corner was eventually removed and placed at the other end of the scene. Another difference is that I moved the barrier to an upright position as I thought the guard would not yet have the opportunity to close it.

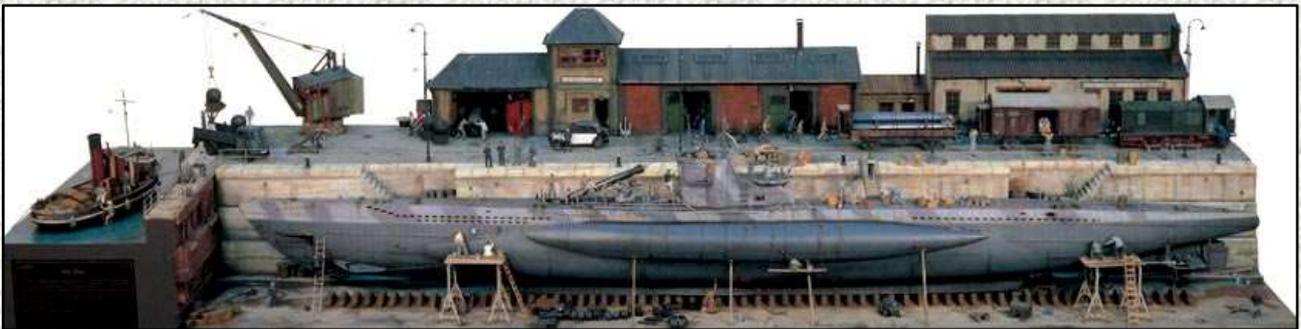


Above (5): The most visual difference between this original version, as built by Julian, and the final version is the area above the green on the sides of the dock. This was later painted in a deep rust colour and adds colour which changes the overall look markedly. Additionally, I removed all but one of the telegraph poles. When I added a railway track section I thought that poles would be in the way of the crane when it was moving items to and from the railway trucks.

Part III - The Final Dockside

Inspiration: Andrea Miniature's *Das Boot* diorama

Once the dockside arrived I began to think of elements to add so that the diorama would tell a story, or indeed many small stories. I bought a book which became a real inspiration in terms of taking the project forward. *Das Boot: The German U-Boat in History and Diorama* was published by Andrea Press in 2002 and includes lavish photos of a 1/32nd scale dry-dock diorama built around their 1/32nd VIIC kit. The diorama is simply stunning, with dry-dock, locomotive, buildings, crane, street, boat, vehicles and 74 figures all bringing the scene to life. Over 12 modelmakers took over a year to complete this hugely impressive model. Elements such as welding repairs, mines, red and white guard hut, torpedoes on a railway truck and WR 360 diesel locomotive all found their way from the Andrea Miniatures masterpiece to my very modest effort at taking Julian's dockside forward. This was such an inspiration that I seriously considered adding an OTW 1/32nd VIIC in dry-dock. However, sanity prevailed as a dry-dock could not realistically be added alongside an Accurate Armour dockside kit. As discussed, I wanted to keep the dockside diorama fun and was taking liberties with historical accuracy. But there is only so far this can be pushed before accuracy becomes too compromised. A dry-dock, even at right angles, was therefore dismissed.



Above (6): The stunning Andrea Miniatures diorama, which featured in the *Das Boot* book by Andrea Press.

Completing the project

There were over 100 breakages when the box arrived. Over the next few weeks and months I set about repairing the dockside. All the railings were completely replaced on the two quay end defence modules, and the railings along the end of the dockside were all repainted in fresh black. Although dockside are often very messy and rusty, elements such as railings do get freshly painted periodically. I then moved a few figures around and began added stores. Julian had included a Tamiya Sdkfw 251 short wheelbase halftrack which was introduced in 1943. The introduction date was reason enough for me to remove it from a late 1940 scene. Additionally, the thought of a halftrack on a U-boat dockside stretches the imagination a bit too far.

As will be seen in the photos to come, the main additions by myself were the railway and pavement sections. Julian built 51 figures but in time I would add 24 more to bring the total to 75. Having to repair and repaint so many parts had a benefit in that I began to feel like it was my dockside. This said, it is always the case that Julian built the dockside and I am merely a custodian who has looked after it, repaired and updated it.

A model diorama is designed to tell a story, with each of the figures in the scene relating their own little part in the tale. Some of the figures I added complemented the story told by Julian's original figures. These include the workman clearing away rubble created by the bomb blast and the

three men deciding how to repair the dockside railings damaged by the bomb. Other figures added new dimensions to the story, for example the diver next to the rowboat and dinghy and the crewmen clearing stores from the boat at the end of the patrol.

Most of the dockside was completed before work commenced on the U-boat in 2017. In late summer 2018 the mostly completed U 47 model was secured to a wooden base measuring 202cm by 56cm. Without the dockside in position, the U-boat could be painted and weathered without obstruction. The dockside was then added in place, with large screws on the underside securing it to the wooden base. A problem due to warping became evident in regard to a comparatively large gap between the right hand side of the dockside and the wooden base below. This would cause a potential major problem as the simulated water would run underneath the dockside walls and not set. The right hand side of the dockside was clamped in order to correct the warping of the wooden base.

A railway section and a pavement section were both added to the wooden base behind the dockside. Now that the boat and other sections were in place next to the dockside, the final elements could begin to take form. Rope was added between the U-boat and bollards and then the two wooden platforms and rowboat were glued inboard of the U-boat. Fenders, diver and planks at the edge of the deck were all added. The final stage of the project was in adding the simulated water and the brass nameplate. This involved considerable issues, which will be described in due course.

The Final Return: A U-Boat Diorama

The following set of photographs show the dockside after completion in December 2018. The photos are not presented in the chronological order in which the parts were completed. Rather they show the diorama from right to left so that the reader can appreciate the storyline aspect. The U-boat is presented separately as it was completed in the final year of the project after the diorama had been mainly completed.



Left (7): We start with the right hand side of the dockside. I added the wooden platform which Accurate Armour used to produce for their dockside kit. I then added the diver figure (Andrea Miniatures S5-F44), a rowboat (Verlinden 2164) and a German Rubber Raft (Bronco Models AB3578). These were the final additions to the diorama before the simulated water was added.

Right (8): Near the right hand side of the dockside is a seated figure opening a tin can to feed his cat.





Left (9): The bomb damage added by Julian to the right side of the dockside included broken and bent railings. I decided to add workmen (Tamiya 35180) discussing how to repair the railings. I also added a compressor, welding gear and tanks, a table with tools laid out (Tamiya 35220), an anvil and a toolbox.

Right (10): Julian had scratchbuilt a guard hut which was originally positioned at the right hand side beside the barrier. After consulting period photos and the *Das Boot* book, I removed the original hut and added a white metal guard hut from Andrea Miniatures. This was painted in the red, white and black stripes used by German forces. Note the small rusty chains and sand-filled buckets lying next to the hut.



Left (11): The bomb damage was gouged out of the resin dockside by Julian. He also added broken crane rails.

Right (12): Julian's Opel Blitz, to which he added three French workers, a German guard plus a driver in the cab. The workers will be repairing the bomb hole in the dockside. I added an extra worker who can be seen carrying a wheelbarrow full of concrete rubble and is about to tip the contents onto a pile at the side of the road. His shovel is lying on the road while an extra wheelbarrow is to his left.





Above (13): The worker is moving to the side to make way for the Opel Blitz truck. His pile of concrete rubble lies beyond the two other figures in this shot. One large stone is still present between the feet of the prostitute, who is busy soliciting for business. The French worker with the wheelbarrow is leaving the stone where it is as he does not want to talk to the young lady just in case he is persuaded to part with his morals and pay packet. The rust inside the crane rails, the steel colour on top of the rails, and the purple-red rust colour of the drainage panel were all repainted.



Above left (14): A dockside requires the ability to deliver fuel, water and electrical power. On the left is a water hydrant which is part of Accurate Armour's Water / Fuel Industrial Set (D40). The middle horizontal stanchion has been removed to make way for the hosing which would be necessary to connect the hydrant to the U-boat. In the centre of this image is a scratchbuilt electrical power box. Both stanchions have been removed to make way for the electric cables. A similar hydrant, this time for fuel, is painted with a red top and is present out of shot to the left.

Above right (15): The scratchbuilt electrical box was based upon this image of a real electrical box on a dockside next to a U-boat. The curved shape towards the bottom is present on the scratchbuilt box but cannot be seen as it features on the side away from the U-boat. The shape of the roof in this period image was replicated on the dockside's box.

Accurate Model Parts



Above (16): Julian had originally used Accurate Armour's Mooring & Gangway set (D15). When I added the U-boat I found that the aft deck railings were in the same position as the gangway. Therefore I needed a narrower gangway plank which can be seen here. Given that the U 47 patrol is complete, some supplies are being removed from the boat. All supplies had to be moved by hand in and out of the cook's hatch on the aft deck. This was a time consuming process as all supplies had to be broken down into small enough packages to fit through the hatch. The red marking "Kai nummer 3" is in genuine German typeface.



Above left (17): Julian's scratchbuilt crane was made using railway parts.

Above right (18): A period image of a band playing near the edge of a dockside. Notable here are the crane rails and the large crane itself.



Above (19): The interior of the crane features a diesel engine and crane operator. My own input was very limited in repainting the wheels and bogeys and adding rust.

Below (20): One workman is lifting assorted pieces of wood into the high sided truck. He will then help to move the last of the rusty steel girders from the dockside into the truck. In the railway truck already are three steel girders, seven oil drums, two naval mines and a welding trolley. The mines and the welding trolley are items which Andrea Miniatures produced for their *Das Boot* diorama.



Left (21): The crewman who remains on U 47 is talking with two men, one of whom leans on the dockside railings and the other sits with arms crossed. On the dockside one man is taking a break while another is carrying supplies from the docked U-boat to the pile of stores. The figure at the top is directing the crane operator on his progress in moving the steel girder to the railway truck.



Above left (22): Another vehicle built by Julian can be seen in the centre. Behind are cardboard boxes with “Biskuite”, “Rotwein” and “Menage” markings. In the foreground is a motorcycle also built by Julian. I built the motorcycle and sidecar and added Red Cross markings; this is the transport for the nurse figure who is attending the medal ceremony.

Above right (23): Real supplies with “Menage” markings.



Left (24): The staff car for BdU (Commander-In-Chief of U-boats) Admiral Karl Dönitz, who stands at the bottom left presenting a medal to a crewman. His driver remains in the staff car impatiently looking at his watch. Julian added a cane, briefcase and pair of boots inside the car plus the Admiral’s markings above the front wheels. Note the vicar figure looking on somewhat detached from proceedings.

Right (25): The brass band plays while Karl Dönitz presents medals on the dockside. He often welcomed his commanders and men back after a war patrol. The man with the camera is Wolfgang Frank, a propaganda journalist who was a guest on board U 47 during the patrol. Directly behind the crewman receiving the medal is Günther Prien, commander of U 47. I changed his head to have a cap that he wore on the real day and added a beard. The only other figures I added were the nurse (Custom Dioramics CDS4043) and the office girl (Junior Town JGF005). All other figures were built by Julian.





Left (26): Another view of the medal ceremony. Here we can see more supplies, green bottles and various vegetables in crates. The telegraph pole has an air raid siren on top.

Right (27): After visiting the Accurate Armour premises I took a trip around the nearby dockside area in Port Glasgow. This image shows the sides of the walls which are very similar to that found in the Accurate Armour quayside kit.



Below right (28): Another image in Port Glasgow. Julian had done a very good job of the weathering in a adding the green colours near the bottom. However, I wanted to remove the black colours at the top and also the concrete colours at the top. As can be seen from this image, the sides are typically metal which can turn purple when heavily rusted. There is also a slight white colouring above the green.

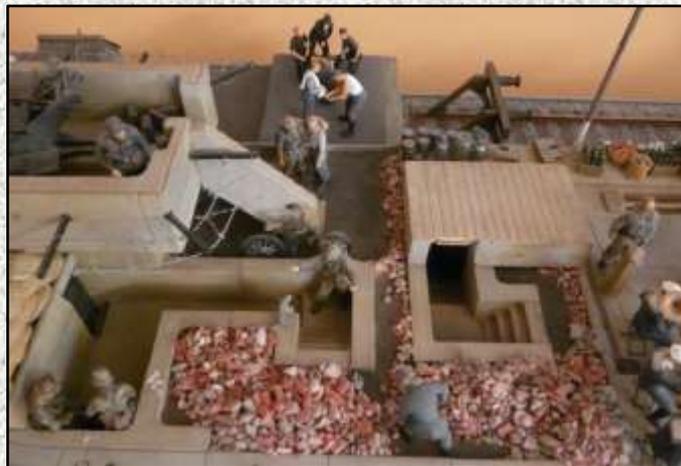


Left (29): I kept the green colours at the bottom but added white above. Then I added various rust colours which range from red-orange to purple. This took many hours as there are 105 rectangular-shaped areas which protrude and a similar number in the background. The various colours were all dry-brushed upon an area of around seven feet to cover. It was well worth the effort as it changes the look of the dockside markedly. Note also the platform with rusty anchor and chain.



Above left (30): I also took a walk around the dockside and harbour area to take photos. These areas are typically messy, dirty and rusty, with objects lying around in haphazard fashion. Here we can see a rusty chain lying partly on a pallet.

Above right (31): A real dockside scene with supplies lying on the forward deck of a Type IX U-boat ready to take below for the impending patrol. We can see wooden platforms next to the same style of dockside walls used in the Accurate Armour kit.



Above (32): The *Funkraum* (radio room) - which we will see later - is hidden under the roof within this area of the dockside. When I visited a real dockside I found rocks and sand lying around in piles for no apparent reason. This inspired me to add piles of rubble and rocks in this area which was previously rather barren. The soldier next to the 37mm gun is looking directly at the workman who is tidying up the rubble into neater piles. The French workers who are arriving in the truck next to the barrier will help this man clear away the rubble. Julian added the two figures with arms around each other. He suggested they are brothers, one of whom is a soldier and the other a U-boat crewman. I kept them in place as I like this element of the story. He also added the two soldiers playing cards and another soldier pointing to them. The purpose of the pointing soldier was unclear so I added a dog and positioned it on the edge. The idea is that the third soldier is telling to dog to go play with his comrades playing cards.



Above (33): Julian's 37mm gun dominates the left side of the dockside. I particularly like this end as Julian used his imagination very well when designing and constructing it. Towards the finish of the project I added a pair of seagulls (Langley L28) to the faraway end. Below the front side we can see a sleeping soldier in an area enclosed with sandbags. We can see the spent shells next to his small calibre gun. The bomb damage at the other end of the dockside was inflicted by the RAF in a recent attack. Since he has been so dozy he has yet to clear away the shell casings since the attack. Wake up sleepy head!



Left (34): One of the areas damaged in transit was the barbed wire on short stanchions pointing out over this end of the dockside. I completely removed all the stanchions and added new longer versions. Then I added two rows of barbed wire plus two more rows on a similar arrangement around the main gun emplacement above. This area was previously barren.

Right (35): Julian built this area at the left hand side of the dockside. He added a figure shaving, a urinal stained with urine and a lovely blocked toilet with corrugated roof. I added the figure (CMK35033) who is busy relieving himself. Yes, that is what he is holding with his left hand. Every good dockside needs a soldier with his willy hanging out.





Above left (36): When I added the railway track this added 11.5cm to the width of the dockside. This meant there would be 11.5cm extra water and some form of addition required beyond the railway buffers. To deal with this I added a pavement section using parts within Italeri's Long Dock (5612). This kit also had the walls we see here plus the wooden post. This had to match the green and white areas near the water on the rest of the dockside. Given that Julian had added extra material to bulk up the plantlife, I also had to do the same. I added granulated sugar and glued it with Humbrol plastic glue. To my surprise this seemed to work. All I had to do was carefully paint and weather this wall section.

Above right (37): I built this pavement section as a box made out of plasticard and topped it with two cobbled sections within the Italeri Long Dock. In between is a different style of pavement from a part I bought at a model show. At the end I added bashed oil drums fully rusted and a car wheel which is also rusted. Then I added two little rats, one scurrying around and another sitting up looking at me. His name is Roland.



Left (38): In this area I added the hut which Julian had originally used as the guard hut at the right hand side of the dockside. I then added a figure reading a book inside the hut. I then added two sand-filled buckets and a ladder which has splashes of paint on it.

Right (39): Julian had added a large wooden barrel in this area. Next I added a small barrel and rucksacks belonging to the various soldiers. Beside them is one figure pouring water on the hands of another dressed in a vest. Next to these two figures are the final four men which bring the total to 75 figures. These four are playing cards with a few sitting on jerry cans.





Above left (40): A photo with the roof removed from the *Funkraum* (radio room). This was entirely built by Julian, who used the Clint Eastwood film *Where Eagles Dare* as inspiration. There are period posters on the walls and the radio operator is wearing headphones. The only additions I made were a code book plus a hardback book. The hardback book in front of him is the wartime book *Mein Weg Nach Scapa Flow* by Günther Prien, which had been released a few months ago. I sandwiched plastic between a piece of brass curved to simulate a hardback book. Then I painted it the same blue colour used on the real wartime book, a copy of which I bought years ago on Ebay.

Above right (41): The *Funkraum* with roof in place. Beyond can be seen railway buffers at the end of the track. In between are aluminium cans of various sizes.



Left (42): Aluminium cans on a real German U-boat dockside.

Right (43): An overhead view showing the placement of various elements at the left side of the dockside.





Above (44): The Trumpeter WR 360 C12 diesel locomotive (00216) was built straight out of the box and finished in dark grey with red for the lower areas. Trumpeter Railway Gondola (high sides) (01517) was used for the truck directly behind the locomotive. All the railways items were fully weathered but this does not show up well in the images.

Below (45): Trumpeter Railway Gondola (low sides) (01518) was used for the torpedoes. Two trucks were used, each carrying three torpedoes each. The torpedoes are from Accurate Armour (S03). The supports upon which the torpedoes sit were modified from the wooden transport trolleys included in the Accurate Armour kit.



Right (46): The Germans used wooden transport trolleys to move the torpedoes around. This is a period photo showing a torpedo on a trolley on the rails built into a dockside. This is the system in Accurate Armour's torpedo set (S03). I did plan to build trolley rails and position them in between the existing dockside and the railway section. However, with space being tight, I decided against this and had the torpedoes being able to be loaded onto U-boats directly from railway trucks. The Germans also conveyed torpedoes on the back of road trucks, with the torpedoes hanging out the back.



Part IV - The U-Boat

Hull corrections

In this section I would like to cover the building of the U-boat. This coverage will be more detailed as the information will be more relevant to U-boat builders, especially those who might undertake a conversion from VIIC to VIIB.

Although the Accurate Armour 1/35th scale Type VIIC is currently out of production, there are plenty of modellers with one stashed away in a cupboard ready to build. The kit can make for an excellent model but some details do need to be corrected. This is perhaps a reflection on the age of the master, which was completed prior to the release of the kit in 1996. Back then knowledge of VIICs was more primitive than is the case now.

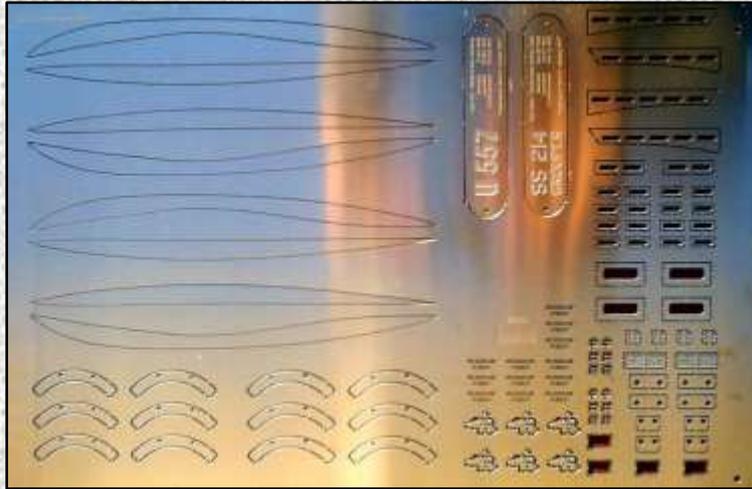


Above (47): Again, not my model. This is the VIIC model which resides a 25-minute drive away at Accurate Armour's old premises in Port Glasgow, Scotland. The main flaw which is evident is the colour of the deck, which in this model shows brown patches through a grey colour. As we now know, the real boats were stained with a black wood preservative. The other issue is the top of the saddle tanks, which on the real boats were always painted with the dark grey anti-fouling paint rather than the lighter upper grey paint.



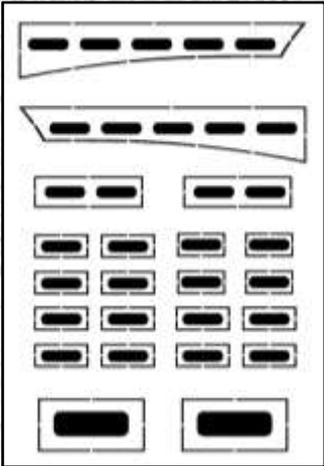
Above (48): The three main resin pieces in Accurate Armour's VIIC kit negates the requirement to add a separate photo-etch deck. Unfortunately the slots within the resin are not crisp or perfectly aligned and may be considered as a principal flaw of the kit. The pattern of slots on the deck is also poor and requires improvement.

Free-flooding vents - The first task was to convert the VIIC pattern of free-flooding holes in the sides of the hull to that of the VIIB U 47. One identification feature between VIIBs and VIICs takes place in the hull casing just above the front of the saddle tanks. On VIIBs there were extra holes in this position. Rather than drill an extra five vents on each side, I decided to add these as parts as brass. I had previous experience of drilling U-boat vents in resin when building Amati's 1/72nd scale U 47 kit. The results were less than impressive so I now prefer to avoid drilling where possible. Correcting the vents with brass is advantageous as it results in crisp holes which are perfectly aligned.



Above (49): It is always fun when you get a large custom designed bit of shiny brass to use on your model. This was designed along with my Accurate Model Parts colleague Wink Grise around the time of our first project, U-Brass. With the exception of the nameplates for Wink's U 557 and SS 214 models, this one was designed solely for this project and not for customers. Parts for converting the free-flooding vents to a VIIB can be seen on the top right hand side. Miscellaneous parts for the tower feature below. The oval shapes at the bottom left were for the one-piece tower seats found on early *Germaniawerft* boats. Lastly, the large curved pieces were for the breakwaters.

Right (50): The two top pieces in this drawing of the custom brass design were for the extra five vents just above the front of the saddle tanks. Other pieces were for individual or double vents, with a number of extras added in case of mistakes being made. The two bottom parts were for the large oval diesel exhaust outlet.



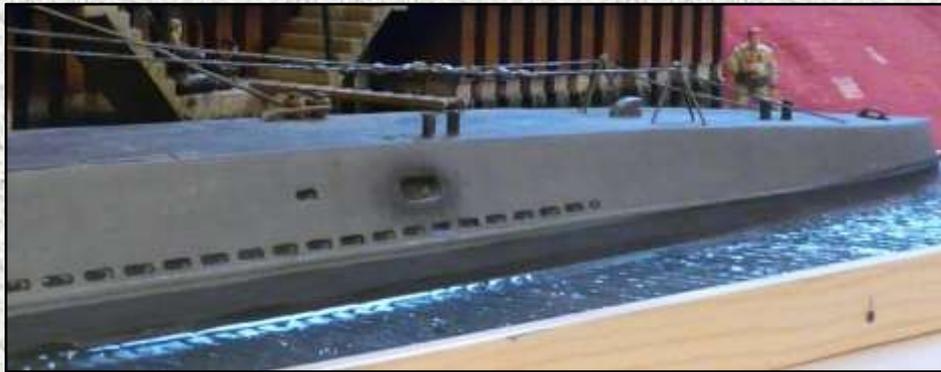
Other smaller vent corrections were made using single or double vents. Again, rather than trusting my poor ability with a drill, I preferred to correct these with the addition of brass pieces. This was not a difficult process as the resin can easily be drilled and gouged away to allow the brass parts to be fitted. In regard to the medium-sized slots in the hull casing above the saddle tanks, some were filled to fit the pattern which featured on U 47.



Left (51): The area within the red box shows the extra five vents replicated using photo-etched brass. This change is essential for modelling a VIIB rather than a VIIC. The black pieces above are the breakwaters, which helped to reduce water splashing up on the crewmen operating the 88mm deck gun.

Curved line - Another flaw in the Accurate Armour kit is in regard to the curved line of small holes which featured on the hull sides outboard of the 88mm deck gun on some VIIBs and VIICs. Only some boats had this feature and the pattern varied between boats. The pattern on the kit was not correct for any VIICs but in any case U 47 did not have this feature. Consequently all these holes were filled with Humbrol model filler.

Diesel exhaust outlet - One obvious mistake in the Accurate Armour kit is the small round diesel exhaust outlet which features on the same level as the rear free-flooding vents. This was only found on the VIAs and the earliest VIIBs and not on any VIICs. When problems were being experienced at the end of 1939, boats such as U 47 had the small round outlet removed and a large oval hole added in the area above the main pattern. As the diorama is set in December 1940, the large oval hole was present on U 47 at that time rather than the earlier smaller round hole. To correct the Accurate Armour kit I added a pair of vents from the brass sheet in place of the round hole. Then I added the large newer-style oval outlet, which had also been designed for the brass sheet.



Above (52): The main set of rear vents can be seen here. There is now an unbroken line of vents, as per U 47 in late 1940, with the large oval outlet above. The area around the outlet tended to become dirty with diesel exhaust gases, hence the weathering around the hole.

Wooden deck slots - A central flaw in the kit is the basic pattern of slots on the wooden deck. In some areas, such as around the 88mm, there were wooden supports underneath the deck which resulted in shorter slots. These are not replicated on the model kit and detract from the overall look of the model. I spend a few weeks improving the pattern by filling in some slots, shortening others using Humbrol model filler, extending some by gouging our resin with a knife and adding new slots. Although this improves the look of the deck, the final result is still rather poor. This is because the kit slots are not perfectly shaped and are often slightly out of alignment. I did consider replacing the entire deck with photo-etch but the outline on the kit did not match the edges of the AMP 72-02 VIIC deck for the Revell 1/72nd kit. Completely reworking the AMP deck design to fit

the Accurate Armour kit would have been a major project in itself, which was certainly not worth the financial cost and the opportunity cost in terms of time which could be spent on other models.

Tower outside

Conversion to VIIB - The process of converting a Type VIIC to the VIIB U 47 would require careful attention to all aspects of the conning tower. With the date of the diorama being set as 6th December 1940, this meant that I would need to depict U 47 after the early style of tower was converted during the cold winter of 1939/40. Prior to this refit the mount for the 20mm anti-aircraft gun was mounted on the aft deck. This was removed and a 20mm mount (with barrel permanently in place) added to a rebuilt rear tower. Crucially, on the VIIBs the slope of the trailing edge now undercut the rear of tower. The trailing edge of the VIICs, on the other hand, did not undercut. The result is that the trailing edge of the Accurate Armour VIIC tower would have to be reworked so that it undercut in the style integrated within VIIB towers. This is a fundamental difference which must be addressed in any conversion. In the summer of 1940 U 47 also had large L-shaped air trunks added to the outside of the tower and this feature would also have to be incorporated into my tower.

Dream Arts tower - When considering the tower conversion, Andreas Mock of Dream Arts was offering resin replacement towers. Several products were available: an early VIIC tower with the mast antenna housing on the port side; an early VIIC without the mast antenna housing; a Mittelmeerturm; a Turm IV tower; and a VIIB with L-shaped trunks. The latter option would save me time but only if it was the correct scale. The towers were advertised as being in 1/40th scale and suitable for the Robbe U 47 semi-scale dynamic radio-controlled kit. Resin towers are not desirable for radio-controlled boats since the weight high up can result in a tendency to roll. At the time, discussions on forums asked whether the Dream Arts towers were in 1/40th or 1/35th scale. Despite the advertised scale, it would seem that the Dream Arts tower was in 1/35th scale. When I bought a VIIB tower from Dream Arts, a comparison between it and the Accurate Armour showed that they were essentially the same size. There were a number of features which looked identical such as the direction-finding housing being too far aft on both the Accurate Armour tower and Dream Arts VIIB tower. These similarities were pointed out to the staff at Accurate Armour when I visited their premises with my Dream Arts tower.

Air trunks - As there was no standard design, slight differences existed between the L-shaped trunks fitted to the early VIIBs. The style which was unique to U 46, U 47 and U 48 had rounded edges and an intake grill positioned on the vertical sides. Using a file I began rounding the edges of Dream Arts trunks to the shape found on U 47. Then I fashioned a grill using photo-etch parts found in my spares box. I drilled away a large hole then glued the grill in place. For extra realism I added a thin piece of plasticard over the join between the front of the trunks and the tower. This was to replicate the steel sheet added in this area to improve hydrodynamics and allow water to flow better over the large trunks. I am pleased with the results of the trunks, and in particular the grill, because these make the model look specifically like U 46, U 47 and U 48 and not any other U-boat.

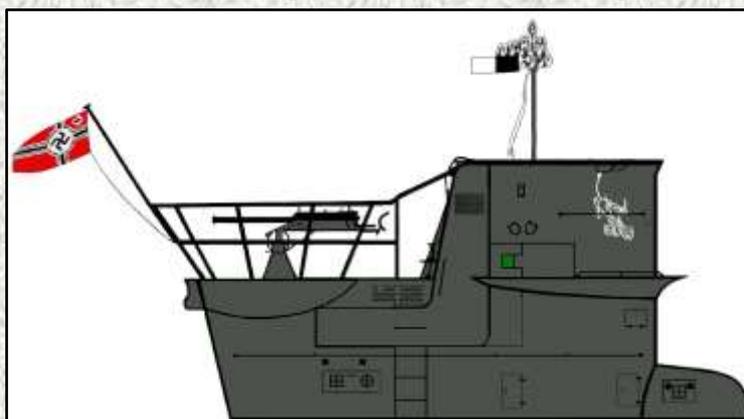


Left (53): A side view of U 47 departing on patrol which illustrates an L-shaped air intake trunk on the starboard side of the tower. This makes a huge visual difference to the tower so care was taken to profile the resin trunks as best as possible.



Left (54): Here can be seen the finished model from the port side. The reshaped trunks, plate at the front of the trunk, railings, ladder and grill at the top of the trunk can all be seen. The small group of ventilation holes above the rear of the trunk were added via a part within the custom brass sheet. They could have been drilled but experience has shown that a brass part produces a much neater result.

Right (55): The commander is climbing up over the bulky external trunk on the starboard side. This required grappling with the grab bars and railings which were added to each trunk. Note how the rear of the top of the trunk is rounded whereas the top of the horizontal part has a sharp edge. The intake grill, which was replicated from brass mesh, can be seen near the top of the trunk. The coping which can be seen curving around the rear edge was also added to the model with brass rod.



Above (56): A side profile of U 47 when returning to Lorient in December 1940. Note how the spray deflector merges with the front of the L-shaped intake trunk. This was another feature replicated on the model.

Side railings - When detailing a model it is essential to have sufficient research material to refer to. Sometimes it is easier to deliberately choose a boat because you have enough photos rather than the other way around. Having researched U 47 fully for my book, I had around 380 photos of the boat to refer to and I had drawn side profiles of the entire boat. This meant I could refer to my own drawings so I could recall exactly where all the railings and grab bars were on U 47. All the railings were added using brass rod.

Rear tower railings - Looking from above, the top railing on the rear of the tower was circular in shape. I used hollow aluminium rod for this as I found it could be curved into shape much easier than brass. This top rail is a larger diameter than the rest of the railings, as per the real boats. The exception is one of the vertical stanchions, which is notably thicker than the rest. Rather than glue, the railings were soldered for strength.

Rear tower seats - The early *Germaniawerft* boats (VIIBs such as U 47 and U 48 as well as early VIICs such as U 69, U 96 and U 201) had a one-piece wooden seat on each side. This was drawn and included within the custom brass sheet. For each seat I sandwiched together two brass parts to provide the desired thickness of the wooden seat. On each side two vertical stanchions go through the seat. Holes were therefore added into the custom brass design, with care taken to add the foremost hole slightly larger in diameter to match the thicker stanchion.

Lifebelt holders - The horseshoe-shaped lifebelt on either side of the tower was only visible in pre-war photos of U 47 and not in place during wartime photos. Although the lifebelt was not required, the two cup-shaped holders and retaining clip at the top were necessary. For the holders I cut away the horseshoe itself to leave the two resin holders and then drilled them away to the correct shape. The clip at the top was fashioned out of brass.

Outside details - The following changes were made to the outside of the tower -

- Filled in panel lines which were overdone on the kit.
- Reshaped lights to that found on the early VIIBs such as U 47.
- Added custom brass for the ventilation holes on either side.
- Filled in the VIIC foghorn hole below the spray deflector.
- Added the insulating conduit for the aerial above the spray deflector (offset to port). A thin wire was added from this small hole up to the jumping wire above.
- Drilled six tiny holes arranged in pairs to the front of the tower.
- On the side of the tower, towards the rear, was a rectangular access panel with a square and circle marker (both with crosses within them). The panel was scratchbuilt with plasticard while the markers were added via custom brass.
- Access panels with two square holes were added using custom brass.
- Custom brass used for the square marker on the magnetic compass fairing at the foot of the front of the tower.
- Custom brass used for the raised edges around the rectangular hatch on the magnetic compass fairing.
- Short ladder added to the underside of each L-shaped trunk. Each ladder was added using brass rod.
- Scratchbuilt the jumping wire attachment points.

Tower inside

Top of tower - At the top of Type VII towers, there is an outboard sheer to help deflect wind away from the crew in the tower. Modellers need be aware that there was a crucial difference here. On the VIAs and early VIIBs the top of the tower curved outboard at a shallower angle than the late VIIBs and all the VIICs. The Dream Arts tower (and indeed the Accurate Model Parts tower) has the top edge as per the later VIIBs and VIICs. U 47 was an early VIIB with the shallower angle. This being an issue that could not be ignored, a modification was required. It was not the easiest change to get correct but I began by filing the top to make a shallower angle. The difficulty comes in respect to the coping at the inboard lip. When the top of the tower was re-profiled the coping disappeared. I then had to add new coping using brass rod on the inside edge of the tower bulwark. The coping was only added to the front end. On the early VIIBs (and even the very early VIICs such as U 94) the coping was not in place around all the sides but it was on the vast majority of VIICs and the later VIIBs such as U 86. Care was taken to make this feature as per U 47.

Small holes were drilled near the top of the tower bulwark for the hooks for the safety harnesses. The old ones were filled in and new ones drilled in the correct locations.



Above (57): A view of the D/F housing, which was completely rebuilt using plasticard. The brown areas are the wooden slats (again scratchbuilt in plasticard) with wooden extendable seats below.

D/F housing - The VIIs had a housing for the direction-finding (D/F) loop) on the inside of the starboard side of the tower. The main correction required to the Dream Arts VIIB tower (and indeed for the Accurate Armour tower if that had been used) was repositioning the housing farther forward. The entire housing had to be drilled away and then a new horizontal top was scratchbuilt out of plasticard. Next the vertical walls were scratchbuilt, taking care to correctly depict get the curve at the rear.

Wooden slats - The VIIs had wooden slats added to the inside walls of the tower so that the lookouts' clothing would not stick to the steel walls in freezing temperatures. On the earliest boats there were only two slat areas on each side and this is what featured on U 47 in December 1940. I scratchbuilt each of the four slat areas and scribed vertical lines into the plastic to replicate each individual slat. There were also foldable wooden seats which were square in shape. Positioned underneath the slat areas, these were normally vertical but could be extended horizontally when in use. These were also scratchbuilt using thin plasticard. Both the slats and wooden seats were painted a wood colour and weathered.

Dashboard area - The "dashboard" area at the front of the tower is frequently hidden in many photos of U-boats. As a result even devout enthusiasts have difficulty deciphering exactly what was present in this frontal area. Corrections had to be made at the top on the starboard side. On the kit, the solid resin at the top area had to be drilled away. I then added a shelf at the top and a voicepipe sitting on top of the shelf. Between the shelf and the area below there was a void in which the vertical pipe leading to the voicepipe could be seen. This was also added using brass rod.

Air filler hose - In the centre a semi-circle was cut out of the rear edge of the shelf. This was to allow the tube upon which a feature which has been discussed on internet forums sat. It has been suggested that this may be the housing for a weather balloon bottle and filler hose. The end was bracketed to the front of the tower bulwark (on the port side), with a hose leading from the end back to the top of the housing. All these items were scratchbuilt additions to the front of the tower.

Compass repeater - A magnetic compass repeater was added to the port side, with a curved support bar leading to the port bulwark. A black wire was added from the underside of the repeater to the tower below.

Central features - A sky periscope housing was added, as was the UZO column directly behind. Behind the UZO was the tower hatch. This is depicted in the open position, with a latch from the top leading to the front of the attack periscope housing. A ladder was added below the tower hatch on the starboard side.

Attack periscope housing - The housing on the early VIIBs such as U 47 was completely different to the style found on later VIIBs such as U 99 and all the VIICs. The style on U 47 was quite a bit wider at the bottom, with the angle between the top and bottom being more pronounced. The sides were flat rather than a complex shape. This early style is not available in any kit and had to be completely scratchbuilt using plasticard. Once the basic profile was built it was filled, filed and sanded to achieve the exact features present on the early boats. Great care was taken to add the railings in brass rod in the positions they are seen in photos. The large holes near the bottom were drilled and then the semi-circular hole at the very bottom was added. The metal bars at the bottom held a horseshoe-shaped lifebelt, though in practice this was only present occasionally in the pre-war period (and not in any photos of U 47 at all). The small foldable wooden seat on offset to port was added in the extended position. The magnetic compass repeater was added in front of the housing, at the top, with a wire added below. The bendy wire around the top of where the attack periscope comes out the top of the housing was then added. This was different to that seen on VIICs so care was taken to achieve the correct shape.

All these features, particularly the semi-circle at the bottom, gives the tower a distinctive early VIIB look (and screams U 47 to me).



Above (58): Many details can be discerned in this photo. The two magnetic compass repeaters - one directly in front of the attack periscope housing and the other near the front of the tower - can be seen, Below the front repeater is a cable to the boat below and a black and white dial. Over the right hand side of the “dashboard” area is a brass voicepipe on a scratchbuilt shelf.

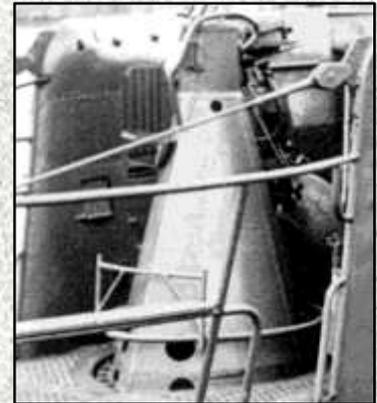
Right (59): An eagle eye view of the attack periscope housing, clearly showing the wooden shelf in the extended position.





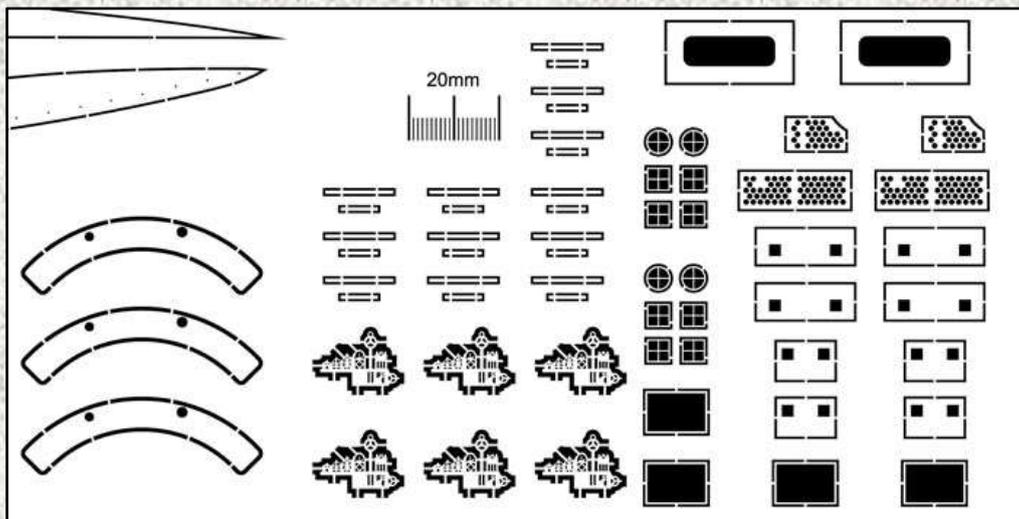
Left (60): All the features in the photo of U 47 are replicated in the scratchbuilt housing. The bars which could be used for a lifebelt can be seen at the bottom, as well as the large hole and semi-circular hole below. The seams at the side and rear are evident here.

Below (61): This photo of U 47 was taken on the 8th October 1939 at the moment when the boat left on the historic Scapa Flow mission. It clearly shows the shape of the housing and the vertical seams at the side and rear.



Other features - Other small features were added to bring about a more precise representation of U 47 -

- Small oval shaped holder at the foot of the starboard bulwark added using brass.
- Very small wooden square added on the port bulwark at the rear.
- Steps added on the tower floor in front of the sky periscope housing.
- Some of the square holes filled in towards the front of the tower, with more filled in on the port side.



Above (62): A drawing of part of the custom brass sheet. From left to right are: seats for the tower (X3), Pillkoppen pennant (X6), circular and square markers (X12), ventilation holes for tower sides (top, X4), square holes for tower side (middle, X4), access panel for magnetic compass fairing (bottom, X4). The four rectangles are for the raised edges of the access panel on the magnetic compass fairing.

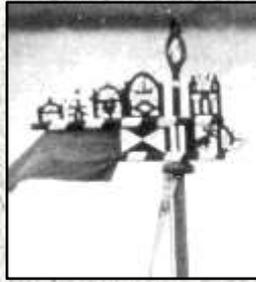
Pillkopen pennant - The Pillkopen pennant can be seen for the first time in the photos of U 47 on the 6th July 1940. The pennant was associated with Pillkopen (today Pilkopiai in Lithuania), a fishing village on the Kurische Nehrung (Curonian Spit). The Kurische Nehrung is a spit of land 60 miles long which lies on the coast of the Baltic Sea, just to the west of Lithuania. Several of the fishing villages on the Kurische Nehrung had decorative flags. These flags had been merely decorative but in 1844 an order was given to use these flags to identify which village a fishing boat belonged to. The half-metre long recognition flag was attached to an elaborate woodcarving, with each fishing village having its own combination of black and white colours. The Pillkopen decoration consisted of two white triangles (with their points facing towards each other) upon a black rectangular background.

The Kurische Nehrung used to be part of the region known as the Memelland. In 1919, the north became Lithuanian and the south Russian. The loss of this land to the terms of the Treaty Of Versailles was one of the demands which many Germans believed to be unjust. Given that Günther Prien was a patriotic German, the use of the Pillkopen pennant upon U 47 is likely to have been linked to the separation of the Kurische Nehrung from Germany by the despised Treaty Of Versailles.

Deck

Main hull sections - The corrections to the three large resin hull sections were made early in the build process. After this and the tower were completed, the three sections were added to the wooden base using car body filler. The two gaps were filled using car body filler, which is very much stronger than normal Humbrol filler used on plastic kits. After a few days gaps began to appear between the sections. Plasticard was then added to fill the gaps again. For some reason this also did not work. The main flaw in my build is, without question, the gaps which have reappeared between the main sections after painting.

Lifebuoy plates - In the pre-war period U 47 had a red and white lifebuoy on the foredeck and another just behind the tower. These were removed in August 1939 when the Germans knew that hostilities were going to take place. This left a metal plate underneath with a pattern of small holes on the surface. These two plates were left in place until the boat was lost in March 1941. To replicate this, the hatch in place in this region on VIICs had to be drilled away from the model and filled in to leave a flat surface. The rearmost lifebuoy plate was then fashioned out of plasticard and holes drilled as per period photos.



Above left (63): The Pillkopen pennant on the real boat. The white strip of material fluttering from the commander's flagstaff is the commissioning pennant.

Above right (64): The drawing used for the custom brass sheet.

Below (65): The brass pennant flying from the top of the commissioning flagpole on the finished model. Careful painting in black and white was required. Material used in AMP flags was used for the thin commissioning pennant and the black and white flag on the Pillkopen pennant.



20mm plate - When launched, U 47 had a 20mm mount on the deck behind the tower. This was positioned in between the aft lifebuoy and the cook's hatch. The 20mm mount was removed in the refit which took place between December 1939 and February 1940, during which a 20mm was added permanently upon a newly-rebuilt rear tower area. When the old 20mm mount was removed, all that was left was a round plate. This plate was fashioned out of plasticard and glued to the deck in the correct location.

Aft deck details - Amendments were made to the aft deck as follows (from stern to bow) -

- Fairlead added beside stern.
- Tripod supports for aft jumping wire made from brass rod.
- Cook's hatch detailed, with correct holes cut out and two brass rods added.
- Two wooden poles (of 128mm and 165mm length) added at the edge of the deck.

Right (66): The rear of the model, with the rear jumping wires on top of the tripod supports. Note the difference in colour between the steel area at the stern and the wooden deck farther forward. The water surface can be seen here.



Aft deck railings - The aft deck railings were made from brass rod and soldered together. The style found on early VIIIBs such as U 47 were very different to that found on VIICs. The aft railings, in particular, were very different as they allowed crewmen to sit on a wooden seat on the middle bar. The wooden seat had been removed in 1940 and was therefore not added to my U 47 model. The top bar of the railings was bent outboard to allow crewmen to rest their back on the top bar.

Forward deck railings - The forward deck railings were also made from brass rod and soldered together. My own side profile drawings of U 47 were used as a reference guide to the position of the stanchion and the shape of the top rail. Note that these were significantly different to the forward railings on VIICs. Another difference is the extra two bars (plus vertical stanchion) which was fitted to U 47 in 1940. This was added to the rear of the forward deck railings.



Left (67): Supplies being delivered out of the boat by hand through the cook's hatch. The two black areas towards the left are the plates where the 20mm mount and lifebuoy had been in the pre-war period. The fender in the water can be seen suspended by rope to the aft deck railings. Only the top of the fender is required on a waterline model. I added a small brass hook at the top to tie the rope through.



Above (68): The deck railings on the real boat, seen here departing on the ninth patrol on the 3rd November 1940.

Breakwaters - One feature which has to be added to any model of U 47 as she appeared at the end of the ninth patrol in December 1940 is the breakwaters. Also called splashguards, these were added in 1939 to the top of the hull in the area around the 88mm gun. Their purpose was to help reduce the amount of water splashing on the three crewmen operating the deck gun at sea. I designed these as part of the custom brass sheet, including the small round drainage holes along the edge. For some reason I messed this up (the Small Brain Syndrome thing was prevalent that day) and as a result they did not fit the Accurate Armour hull at all. Having discarded the brass parts I redrew them on paper. Once I had the correct shape for the horizontal surfaces I used the paper template to cut them out of plasticard. I then drilled the small drainage holes near the edges. The process was then repeated for the vertical surfaces and both were glued in place. The real boat had a smooth curve between the vertical and horizontal surfaces. I started by gluing plastic (with a cross section which was square in shape) along the underside on the edge of top of the deck. Then I added lots of filler and sanded the surface into a smooth curve. To finish I added a lip using plastic rod along the edges of each breakwater. The results were quite satisfying and well worth the effort involved.

From some angles the breakwaters look to be angled upwards but in other photos they look flat. I have not found as yet found the answer to this riddle.

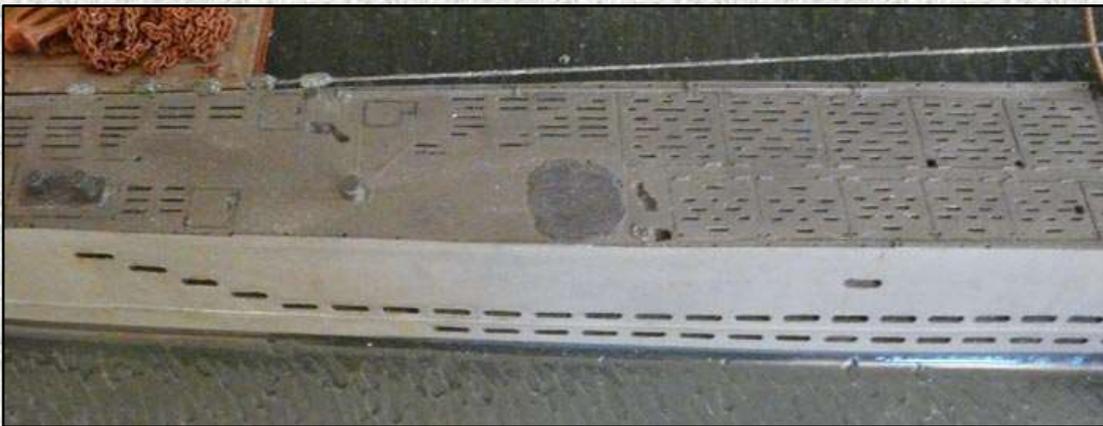
88mm deck gun - The 88mm deck gun in the kit was assembled, with a sight added on the port side. The kit instructions were far from satisfactory so consultation with period photographs was needed throughout the building process. The one addition I made was the wire wrapped around the barrel.

Forward deck details - Amendments were made to the forward deck as follows -

- Wooden pole of 165mm length added to the starboard side of the deck.
- Lifebuoy plate added on the port side.
- Capstan added on the port side, including strips around.
- Three fairleads added.



Left (69): The black areas at either side of the forward deck are the breakwaters. The two crewmen bring an aspect of storytelling into this area of the model. Both men are holding a length of rope, the idea being that the man on the deck is about to secure the rope around the bollards of the port side of the deck. The forward section of the rowboat was scratchbuilt from plasticard.



Above (70): The black area is the forward lifebuoy plate. The misshapen holes allowed crewmen to put their hand through and release deck hatches. As with the aft deck, these were all drilled and cut to the correct shape.

Net cutter - The net cutter in the Accurate Armour is completely inaccurate and therefore unusable. On the kit the five white metal supports are flat surfaces (whereas the real supports were round in cross section) and there is an inaccurate number of teeth. The top part with correct number of teeth was scratchbuilt from plasticard, as was the flat piece underneath. The five supports were made with brass rod and glued at the correct angle. The entire exercise was quite easy and well worth the effort involved.

Right (71): The scratchbuilt net cutter on the bow of the U 47 model. The water surface can be seen, as can the brass nameplate. This was part of an AMP brass sheet produced for tower floors in 2018, using spare space on the sheet.



Jumping wires - The two rearmost wires had been added before the rear hull piece was added in place. In the position where the rear jumping wires met the stern, two vertical holes had been drilled all the way through the rear resin section. The wires were pushed through the holes and tied together before the stern section was glued to the wooden base. The result is that both rear jumping wires will not come away from the rear deck. As for the three jumping wires themselves, these were added with string and painted with gunmetal paint.

The porcelain insulators are always a tricky part to get right on U-boat models. Given the 1/35th scale, this aspect of the build is so much easier than a 1/72nd build. The quality of the resin insulators in the Accurate Armour kit also helped greatly. Once all the insulators and tensioners were added, extra wires of thinner diameter were added between the main wires and the rear tower. The same was also added between the front wires and the front of the tower bulwark. As mentioned previously, a small wire was also added down to the insulating conduit at the front of the tower.

U 47 featured an extra cable on the port side of the rear jumping wire. This feature was only present on the earliest *Germaniawerft* boats produced in that shipyard; this included the early VIIBs such as U 47 and U 99 as well as the very earliest VIICs in the batch U 93 to U 98. This additional cable was added using thin metal rod, with a number of connecting wires securing it to the port jumping wire.



Above (72): The extra cable can be seen on the port jumping wire of the completed model, as can the bottle green insulators.

Painting

Upper hull - After the summer of 1940 photos of U 47 show the boat in a darker grey upper hull paint. This may have been as a result of the move from a home base of Kiel in Germany to Lorient in France. It is impossible to determine with certainty what the darker grey paint was but *Schlickgrau 58* is one of a few possibilities. The Colourcoats range of enamel paints is my preferred option for Kriegsmarine paints as they are accurately matched to the Short & Snyder paint cards. Paint within several tinlets of KM11 *Schlickgrau 58* was mixed together within a larger tin and used for the upper colour.

Lower hull - Although a waterline model does not include the lower hull, around a centimetre of the darker grey lower hull colour (*Schiffsbodenfarbe II Grau*) is present at the waterline area as well as the top surface of the saddle tanks. One tinlet of Colourcoats KM05 was sufficient for the *Schiffsbodenfarbe II Grau* paint.

Weathering - Rust tends to start with a dark rust patch of rust at the top, with rain or seawater washing down particles of rust below. When simulating rust I add what I call the rust residue effect, whereby I add a small blob of a red-orange colour and sweep this downwards with a small paintbrush. Once this is dry I add the actual rust using a dark rust colour at the top. General dirt was then added either with drybrushing or black washes. The weathering was kept to a modest level as

befitting a boat which had been at sea for just over a month. The exception was the area around the diesel exhaust outlet, which gets dirty quickly due to the diesel exhausts flowing out of the outlet hole.

Wooden deck - As with my other U-boat models, a dark brown was mixed up as the base of the wooden areas of the deck. Lighter brown was added in some areas, with salt staining and dirt also added in places. Black was added to the metal hatches and the metal sections at the bow and stern. Salt staining was also added to these metal areas plus some very modest areas of rust.

U-boat colours - For more details of U-boat colours please refer to the article *Kriegsmarine U-Boat Colours & Markings* which begins on page 13 of the AMP downloadable pdf *The Wolf Pack: A Collection Of U-Boat Modelling Articles*. This can be downloaded from https://amp.rokkt.biz/lib_uboats.shtml

Final details

Waterline draught markings - All U-boats had six sets of waterline draught numbers (three sets per side). AMP produces decals for these draught numbers for the Type II, Type VII and Type IX in different scales. I used AMP's 1/32nd scale waterline decals (I-32W) as the distance between the numbers in 32nd and 35th scale is negligible. Since I was making a waterline model I only required a few of the numbers at the top rather than all the numbers.

More details of waterline draught numbers can be found within the article *U-Boat Waterline Draught Marks*, which is part of the AMP downloadable pdf *The Wolf Pack II: Another Collection Of U-Boat Modelling Articles*.

Snorting bull - Given how integral the snorting bull emblem is to the legend of Günther Prien and his boat U 47, it was essential to get this right. The bull on U 47 changed after each time in port, becoming much neater over time. AMP produces snorting bull decals but these are specifically for the 7th U-Flottille version rather than any of the versions present on U 47. The version used upon this model was custom designed and printed many years ago.

Flag - Naturally an AMP fabric flag had to be used to provide a finishing touch. In this case DK-KMNE-80X135-035 was used.

Water

Choosing a product - The final major task was adding simulated water to the diorama model. This has the potential to make or break the whole project so I was somewhat apprehensive prior to embarking upon this task. Although I have made waterline models I had never, until this point, made simulated water. There are many products which modellers can choose from. I opted for Deluxe Materials Aqua Magic as it is odourless, requires no mixing and provides a highly reflective finish. The videos on the Deluxe Materials website made the application look easy in that it is simply poured out and left to settle.

Base colour - The Deluxe Materials website tutorial advises using acrylic paint but I used enamel paint for my base. I mixed up a very dark colour with a hint of blue. In the Pacific Ocean the water tends to be blue but in a cold French port overlooking the Atlantic Ocean in December there are no sunbathers with skimpy bikinis. Instead there are hairy arse blokes with machine guns (soldiers) or smelly bearded lads (U-boat sailors). In that environment the water would not be blue but a very dark grey.

Setting time - The key with Aqua Magic is to know exactly how long to leave it before trying to make the water surface. To determine this I tried out a test run on a spare piece of wood. This test took 13.5 hours before the water surface was ready to work upon.

Making the waves - To simulate the waves I would need some form of tool to upset the water surface. I used the wider end of the plastic mixer within Araldite's two-part epoxy glue as that has the correct size and shape to make waves. I simply dabbed the plastic tool in the water at regular shaped intervals, thus allowing the wave pattern to be built up easily and quickly. I did not find myself able to simulate tiny wavelets (which I would have preferred) using this method. But from a distance it does look acceptable in terms of a moderately-sized wave pattern. Since the material tends to dry out, a good proportion of the total area had to be completed in a short space of time. The window where I could add the waves and they would remain was around 45 minutes. Prior to this they would settle back into the water and after the window the water material would be too hardened.

First attempt - I *almost* managed to get everything correct the first time. The only problem was that the very corner at the right hand side was not deep enough. This set within a quicker time and did not allow any wave pattern to be simulated. Stripping back ALL of the water surface would be a nightmare as the area next to the dockside walls had some areas which protrude and others which do not. Shedding the hardened water would rip away some of the green surface of the dockside and wreck it.

The answer to avoid this calamity was to keep the majority of the water and only replace a smaller section. I did this by adding a rowboat in front of the U-boat and a dinghy just behind the stern. The water area in between was to be completely stripped away and redone while in all other areas the existing water could remain. After I added the dinghy and scratchbuilt the rowboat, I ripped away the hardened water between these areas, which came away easily. Unfortunately it took away some of the paint on the waterline of the U-boat. This required sanding down and repainting the port saddle tank of the U-boat. The starboard saddle tank was also repainted as it was important to ensure both sides looked the same. This was a real pest as I had fully weathered both saddle tanks already. Following this task I painted the base again.

Second attempt - During the second attempt I added one full 250ml bottle and most of a 125ml bottle to the area between the rowboat and the dinghy. Unfortunately this second effort was an unmitigated disaster. Firstly, when I added the material I quickly realised that the dockside was not perfectly flat and the Aqua Magic was flowing slightly towards the rowboat. This slight amount of flow was resulting in the material failing to set. Another problem - or so I thought - was the 125ml contents were milkier than the 250ml contents. At that point I thought it was a quality issue between the 125ml and 250ml bottles. If the materials set like this it would be a disaster. Rather than waiting for the material to set, I took out all the water before it had set. I then began the not inconsiderable task of repairing the areas where the material had touched once again. This involved sanding and repainting the wooden base and then sanding and repainting the saddle tanks (again). I also had to sand down the waterline and repaint the dark grey anti-fouling paint along the majority of the port side of U 47. Crucially I used the very last of the base colour paint, meaning that I had no more base paint available. There was one last chance to get it right...

Third attempt - While the base and U-boat were prepared for the final attempt, I bought two more 250ml bottles of Aqua Magic. For the third attempt I used a spirit level to make sure the dockside base was dead flat. I then added one 250ml bottle and then poured out part of a second 250ml bottle to fill up the remaining space. To my dismay the same problem occurred, one being notably milkier than the other. This had not been a problem at all in the first attempt but for some reason it was becoming an issue in this and the prior attempt. The time required for the material to set enough to

simulate the waves was 12.5 to 13 hours this time, the slight difference being perhaps due to a slight variation in temperature.

I was getting somewhat stressed and began to think that building a dockside diorama was an incredibly stupid thing to do. At this time I discussed the problem with a friend and together we decided that the milky colour might not be a problem at all. Once the material had fully dried we thought there would be a chance the milky colour would go away. If this was not the case I would have to rip up everything and somehow start again with different materials. A few hours later the penny dropped. The milky colour did indeed go away once the material began to dry out.

The problem had not been the Aqua Magic but my stupidity. I should simply have left the material to set during my second attempt and this would have saved a great deal of hassle and repair tasks. I would have beat myself up with a big branch to punish myself but I was just so relieved that it had worked.



Above (73): I took photos of water to study the ripples in the water under various wind conditions. I also studied the colour, which often looks more of a very dark grey than blue.

Aqua Magic - The milky issue was not, in the end, a problem so I would like to make it clear that this was my mistake and not an issue with the product. I would not like to state whether fellow modellers should use this product as I have no experience with other products on the marketplace. Building up waves with Aqua Magic is quite easy, though simulating small wavelets is beyond my skill level. Care needs to be taken to ensure a corner is deep enough for waves to be simulated. Furthermore, the window of opportunity in making waves should be carefully considered and one should always work as quickly as possible when making the waves. These issues aside, I am reasonably pleased with the overall result.

Right (74): A 250ml bottle of Aqua Magic.



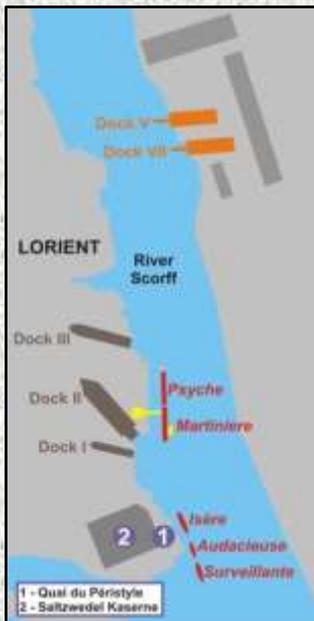


Above (75): The dockside and U-boat when completed in late 2018.

Part V - The Real Final Return

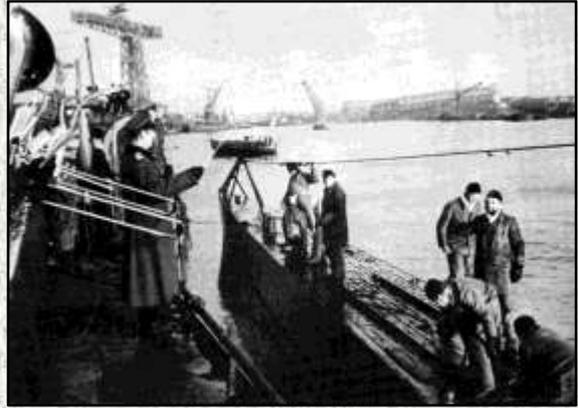
To conclude this article I would like to present real photographs of U 47 at Lorient on the day depicted, 6th December 1940. This does tend to illustrate deficiencies in the diorama. However, although a real date and location was chosen, and attention has been paid to making the U 47 model reasonably accurate, it is freely acknowledged that the diorama itself is fictional. For example, if a French prostitute had tried to solicit business on the quayside on that date, she would have probably have frozen her lovely bottom while doing so.

When U-boats returned to Lorient, they did not tie up next to the style of quayside as depicted in the Accurate Armour modular kit. Rather they moored next to one of three pontoons (*Isère*, *Audacieuse* and *Surveillante*) tied up to the *Quai du Péristyle*. These pontoons were directly beside the Saltzwedel Kaserne, the barracks used to house U-boat crews. Another option was to moor next to either the *Psyche* or *Martiniere*.



Left (76): A map of Lorient naval base showing the pontoons which U 47 tied up next to. To the north is Dock VII, which was a very distinctive feature in the background of period photos due to its sloping roof. The yellow square is the 150-ton crane which towered over the base.

The real final return



Above left (77): Kapitänleutnant Günther Prien stands on the tower as he brings his boat into Lorient for the very final time. The date is the 6th December 1940, the time 1117.

Above right (78): Having climbed down to the forward deck, we see Günther Prien waving to the military band playing *Engelland Lied*. On this cold, frosty morning U 47 is being moored next to a pontoon beside the *Quai du Péristyle*. The large 150-ton crane in the background was situated beside dry-dock 3 and dominated the skyline of Lorient naval base. Beyond the River Scorff we can see the sloping roof of dock VII.



Left (79): The bearded crewman, who has not shaved when U 47 has been at sea for just over a month, is pulling a thick rope and is preparing to wrap it around one of the bollards. Note how the port breakwater seems canted up at an angle.

Wolfgang Frank

The diorama depicts a fictional scene within an hour or two after U 47 returned from the penultimate patrol to Lorient. U 47 had a guest on board for the duration of the patrol. This was Wolfgang Frank, a *Kriegsberichterstatter* (KBE, propaganda journalist), performing the same duties as Lothar-Günther Buchheim undertook when he was on U 96's seventh patrol at the end of 1941. This was used as the basis of the classic novel *Das Boot* and subsequent movie of the same name.

U 47's ninth war patrol was blighted by inclement weather and heavy seas. There was mounting frustration as the days passed without any contact with the enemy. Prien's aggravation at their lack of success was heightened by the knowledge that his fellow ace Otto Kretschmer was overtaking him as the leading ace in the Tonnage War. Given the presence of his guest on board, it

must have been particularly annoying that the patrol did not bear fruit like the previous three patrols. Another facet of the patrol was the high proportion of torpedo misses, which harked back to the earlier period when shot after shot resulted in failure. Of twelve torpedoes fired, only two hit the target.

After the patrol ended, Wolfgang Frank wrote the article *Ich Fuhr Mit Prien* (I Went Out With Prien). Frank continued to write about Prien in several publications, most notably in his 1942 book *Prien Grieft An* (Prien Attacks). In 1950, he penned *Was War Nun Wirklich Mit Prien?* (What Really Happened To Prien?) with Hans Meckel. In his 1958 book *Der Stier Von Scapa Flow* (The Bull Of Scapa Flow), Frank once again focused upon Günther Prien's career in command of U 47. In addition, several chapters of his 1955 book *The Sea Wolves* (a translation of *Die Wölfe Und Der Admiral*) deal with U 47. One of his major contributions to the understanding of Prien can be found in the English language translation of *Prien Grieft An*, which was released under the title of *Enemy Submarine: The Story Of Günther Prien, Captain Of U47* in 1954.

Right (80): Given Wolfgang Frank's importance during and after the ninth patrol, it was considered essential to include him. He is the photographer taking photos of the fictional medal parade in the diorama. In this real image we see a rare shot of Frank with Prien on the dockside on the 6th December 1940. The men were on friendly terms and appear happy upon their return from patrol. Prien has changed out of his leather coat but still wears his white scarf and gloves. The U-boat in the background cannot be U 47 as it has a wind deflector at the top of the tower.



The very last photo



Above (81): Farewell! This poignant photo is the very final image of U 47. Taken on the 20th February 1941, we see Prien's arm waving goodbye to all. It was the very last time U 47 and her crew were to be seen in port. The last radio message sent by the boat to BdU was made at 0454 hours on the morning of the 7th March 1941 in the area around Rockall Banks. Nothing more was ever heard from the boat again.

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