

Preussen

German 5 masted full-rigged ship 25'=1"

By
Robert A Wilson



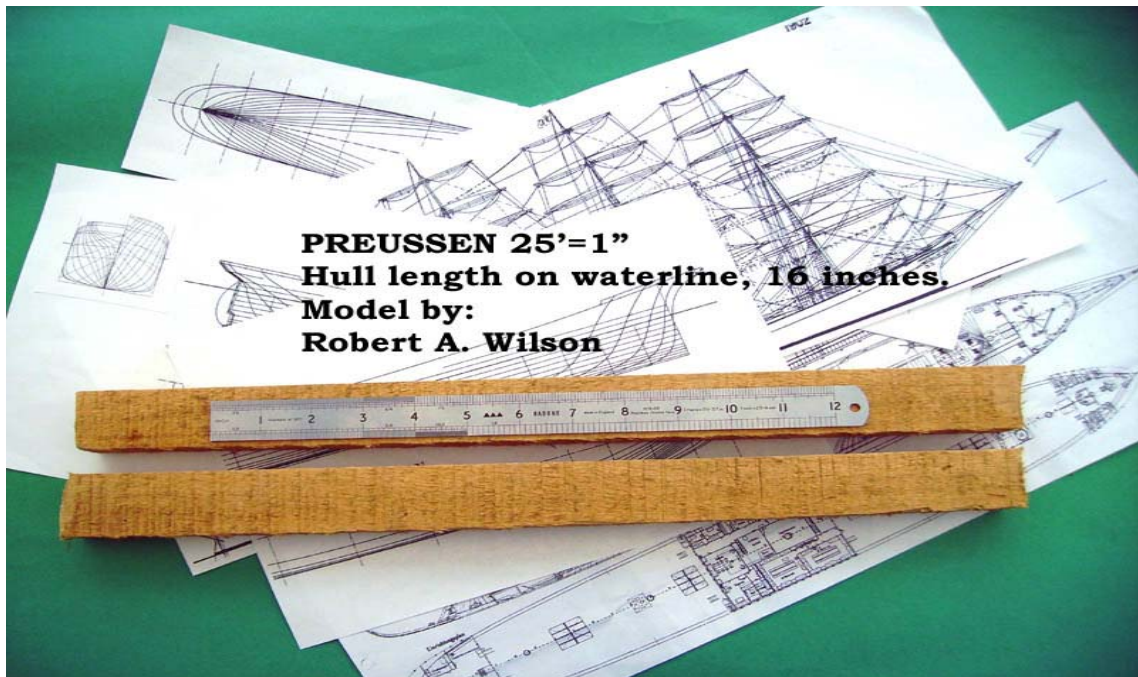
Introduction.

This article is the record of the ship build originally recorded in the Building Logs forum of Model Ship World. The original with associated discussion and comments can be viewed at <http://modelshipworld.com/phpBB2/viewtopic.php?t=1069>. The *Preussen* was launched in 1902 in Gestemunde Germany. She was steel built specifically for the nitrate trade with Chile. With a waterline length of 124 m and a total hull length of 132 m. The hull was 16.4 m wide and the ship had a displacement of 11,150 tons, for an effective carrying capacity of 8,000 tons. The five masts were fully rigged, with courses, upper and lower topsails, upper and lower topgallant sails, and royals. Counting staysails, she carried 46 (according to other sources 47) sails with a total sail area of 4,600-5,600 square meters. Not only the hull was steel: masts and spars were constructed of steel tubing, and most of the rigging was steel cable. Under good conditions, the ship could reach a speed of 17 knots. The *Preussen* was manned by a crew of 45, which was supported by two steam donkey engines powering the pumps and the loading gear.

Ship Build

Most of my models are of ships in the 8 to 10 thousand ton range and with my normal scale of 32'=1", they are usually about 16 or 17 inches long. The last two models, ARRAN MAIL & ISLE OF JERSEY were both small vessels. I used 16'=1" for ARRAN MAIL which gave it a length of 6.2". For ISLE OF JERSEY, I moved back to 32'=1" which gave it a hull length of 9.6". It would have been just as easy (probably easier) for me to build PREUSSEN at that scale (32'=1"), but I felt that such an imposing ship should be built a bit bigger than usual. Even so, many modelmakers will think it is a bit on the small side. There is nothing complicated about it though, the biggest problem is repetition in the sails & rigging.

The hull is wood, but it is plated over with paper plates (normal writing paper). The decks are 1/32nd marine plywood scored to represent planks. The sails are white airmail paper & I print the seams on them using the computer. Because I don't want prominent seams, I print them in grey rather than black. The sails are moulded round an ostrich egg whilst wet to give them a wind-filled effect. The masts, spars & rigging are 100% metal. The lower masts are brass tube whilst the remainder of the masts & rigging are brass rod.



A bit of progress has been made. The two pieces of wood have been glued together & the sheer & profile cut out.



Raised forecastle, amidships and poop sections added. Scored planking on all upper decks, bow & stern inserts fitted.

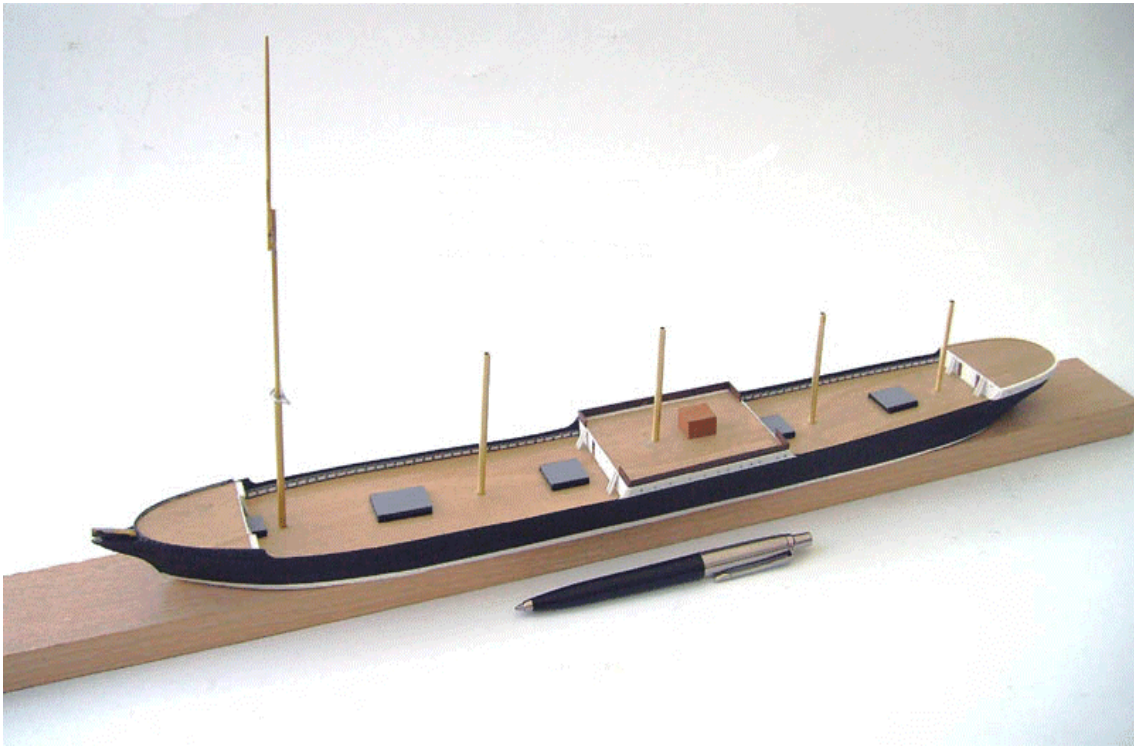


That is a piece of brass tube soldered onto the brass stem insert. The bowsprit will eventually be fitted into it. Fitting the bowsprit too early usually results in it getting broken off, but the socket is safe enough!

The bulwarks are now fitted & the hull has been plated after a final smoothing



The hull is now painted & the bulkheads fitted to the three raised islands. Also the amidships bulwarks have been fitted & the cargo hatches plus the ladders to the three decks. The chartroom has been cut out. In order to break up the tedious work of rigging once the hull is complete, I have made a start on the five masts. These are made from brass tube & rod soft-soldered together. The display case has been assembled apart from the top panel & I am about to make the base & tray for the sea.



Progressing quite well now. The bow decoration has been added. All five masts have been made from brass rod & tube. The chartroom has been fitted a couple of the winches are in position. The mooring bits & capstans are also in position. The donkey engine-house is in the process of being built. The long brown items alongside the hatches on the foredeck are "spare spars," although their length does not match any part of the five masts. I assume that these spare spars are simply long wooden poles which could be shaped to act as temporary masts should any of the upper masts be lost through accident. Although I am not 100% certain, I think that all the PREUSSEN's masts & yards were of steel. The bow decoration is brass wire tightly twisted together & then beaten flat with a smooth-faced hammer on a piece of smooth steel. It is then bent & cut to shape & stuck on.

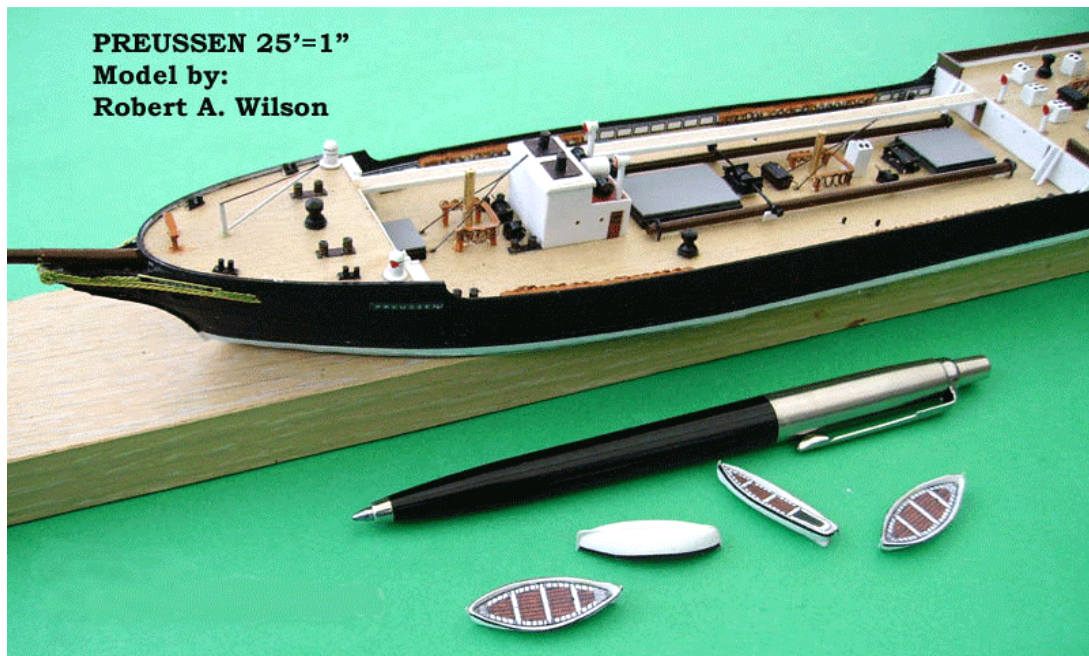


More progress on the fine detail on deck has been made. Mostly brace & halyard winches and the donkey-engine room top. Also five rails & skylights. I felt that the mooring posts were rather too thin, so I pulled them off & fitted a fresh lot - much better. The masts & bowsprit have also been completed. Quite a lot left to do on deck including catwalks, lifeboats, more skylights, ropes on the five & pinrails, wheel etc

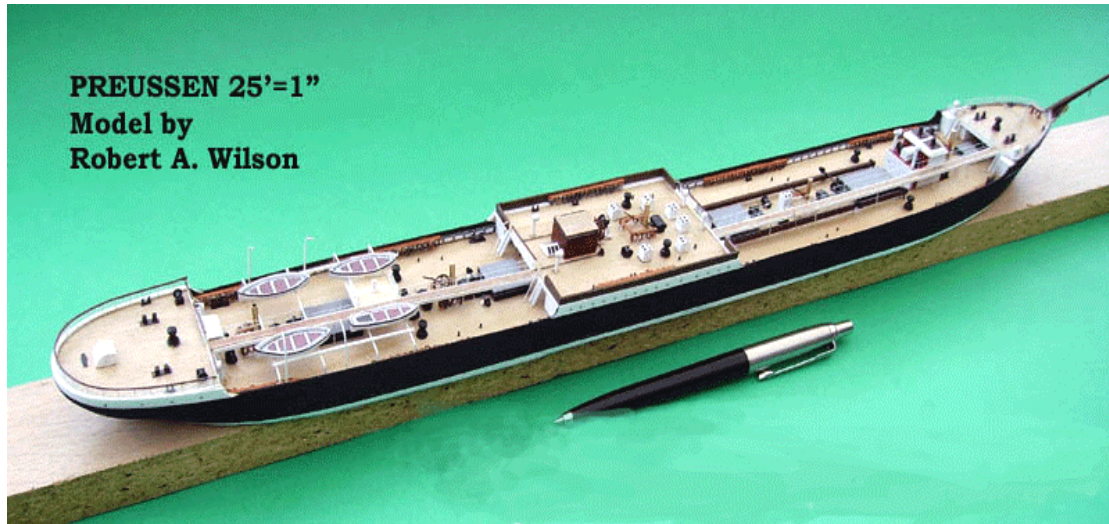


Incidentally, for those of you familiar with the PREUSSEN who may be thinking that the twin donkey engine funnels were rather longer, you are quite right, but the PREUSSEN was a sailing ship & the funnels fouled the main topmast staysail whilst at sea. because of this, the tops were removable & because of this I am showing the PREUSSEN under full sail with the funnel tops off!

I have now made quite a lot more progress. The four boats are completed & most of the detail on the foredeck. Rope coils have been fitted to fore & main pinrails & fiferails. The flying bridge has been fitted between 'amidships bridge deck & forecastle head, but the supports are not yet in place. The guardrails will be the last items to go on before I start the rigging.

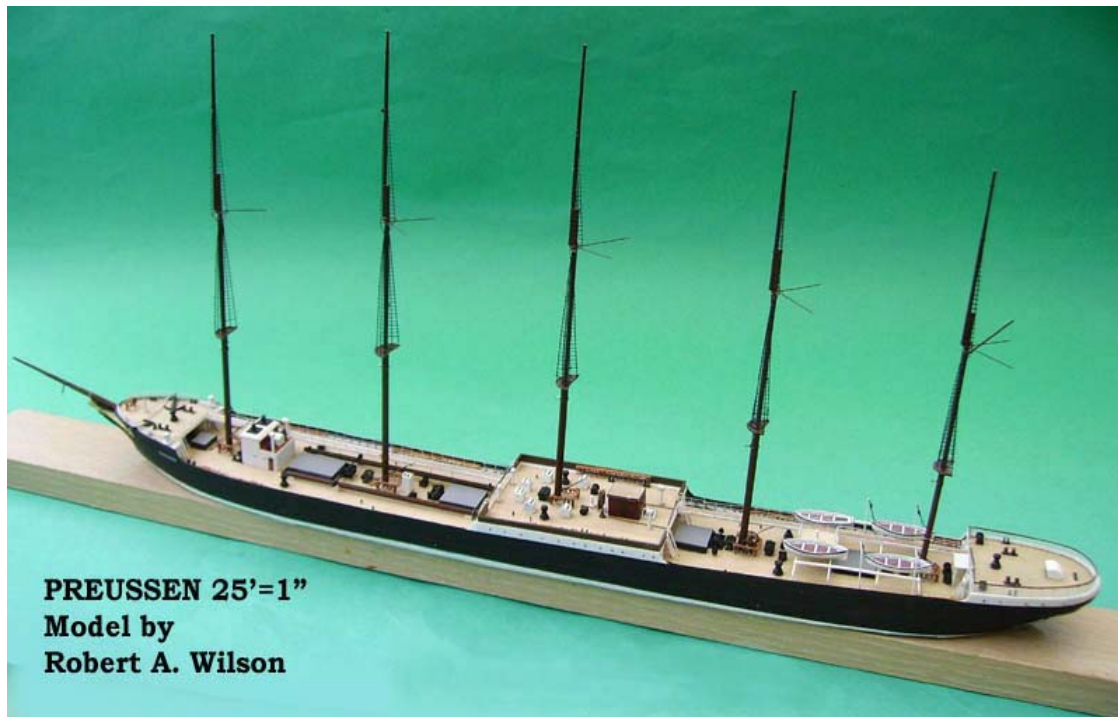


I have now completed the hull & it was hard-going towards the end (was getting tired of it!) It is now ready for the fitting & rigging of the five masts & I will probably start that task next Monday as I have some work to do on the display case & base etc, & need a rest from the fine work to allow me to recover my enthusiasm for the mammoth task of rigging.

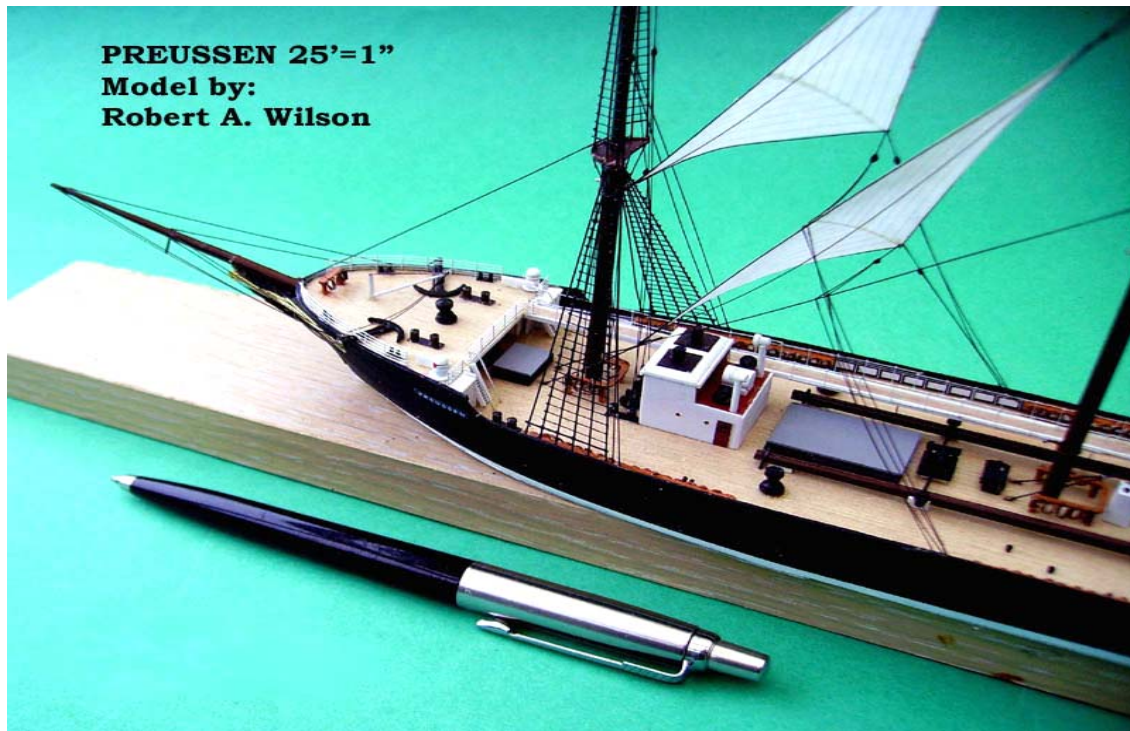


In preparation for starting the rigging, I have fitted the five masts. I also completed a few items which I had missed on the hull such as anchors & cables, rigging the anchor crane & lifeboat davits & the stern decoration.

Whilst I was building the hull, I was slowly fitting the topmast & t'gallant mast shrouds & ratlines to the masts so that is one tedious job out of the way. On Monday, 8th Jan. I will begin the rigging proper. This will commence with the inner lower rigging such as lines down to the fiferails & brace winches. I will then move on to the lower staysails before making & fitting the lower shrouds & ratlines. Sequence is extremely important in miniatures and things should be done in the correct order. The yards, booms & gaff will be made from brass & copper rod whilst all the rigging, including ratlines will be of fine copper wire. The sails will be white airmail paper with grey seams printed onto the using the computer. I use grey so that the seams are not too prominent. At the moment it all looks rather bare & seems quite a daunting task, but things will quickly begin to progress as the rigging goes on.



By 1500hrs Sunday afternoon, I couldn't wait to begin rigging, so abandoned my intention of waiting until Monday. I fitted the lines from the top to the fife rails, then made & fitted the lower shrouds & ratlines. These were followed by fitting & rigging main topmast & main t'gallant staysails. Then the four capstays were added, followed by the forestay & bowsprit rigging. For the moment, I will leave the foremast & move onto the mainmast, leaving the main royal staysail until later. The names of the masts in German five masters are fore, main, middle, mizzen & jigger.



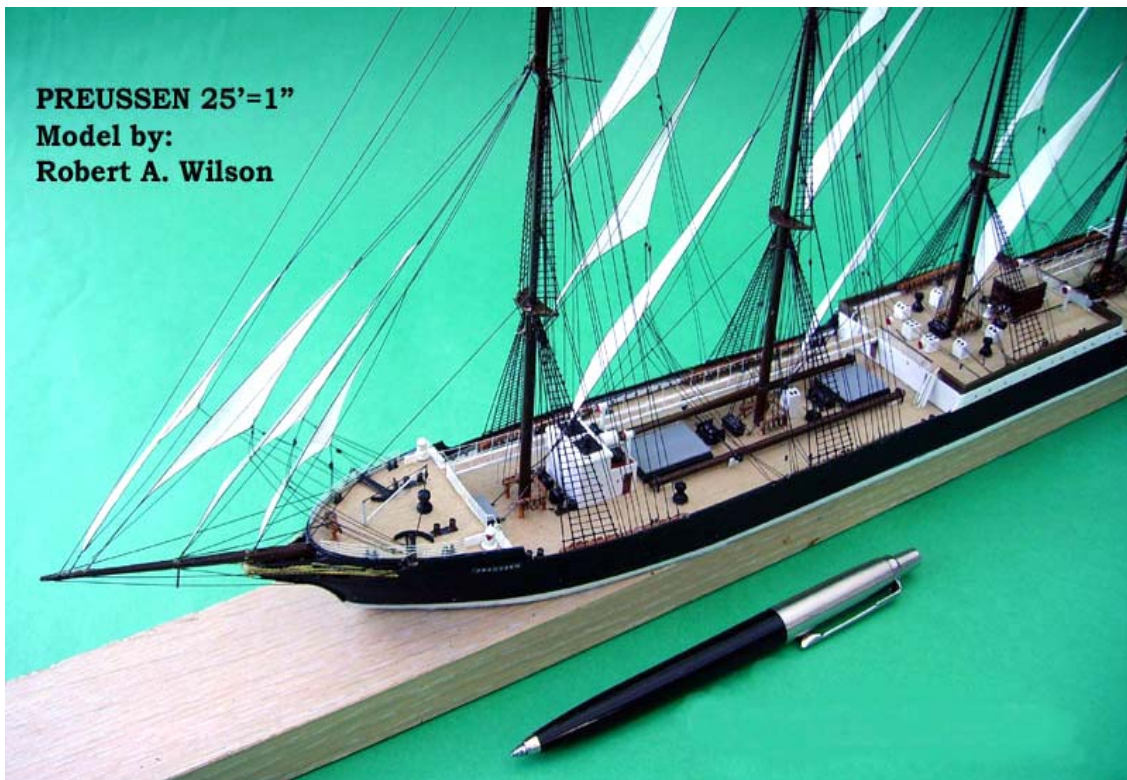
Thanks for further comments & thanks Uwe for picture & other links which I have looked at closely. PREUSSEN was certainly a magnificent looking ship, but I feel the square-rigged fifth mast was more for publicity than anything else. Probably she would have sailed just as well (or better) as a five-masted barque. Lots of British three-masters improved their performance when cut down to barque rigs. I have gone through her voyages & daily runs & found that only occasionally did she exceed 300 miles per day, which indicates a maximum speed of about 14.8 knots at the most on very rare occasions when she made about 350 miles. This was compensated for, of course, by the enormous cargo capacity of about 8,000 tons. Work is still "flowing & I will now be moving aft to the middle mast.

The advantage of rigging with wire is that you can make it hang in any curve you want & it certainly adds to the effect. All the lower, topsail & t'gallant shrouds & ratlines have been fitted. The brace winches & lines from the mast tops to the fife rails fitted. The lower mast capstays have also been rigged and a total of 8 jibs & staysails have been set & rigged. A further 8 more jibs & staysails have yet to be fitted. Then after the spanker is fitted & rigged, I can complete the remaining backstays before moving on to the 30 square sails. The masts & rigging are 100% metals (brass, copper & fine copper wire)



PREUSSEN 25'=1"
Model by:
Robert A. Wilson

Next I fitted the main & middle royal staysails & then completed all the standing rigging on fore & mainmasts. Then I set & rigged the flying jib. As I was adding the paint blob blocks to the flying jib, my brush inadvertently deposited a big black spot on the outer jib lying just below. Aaargh, screams of anguish! Impossible to clean it, so I had to remove the outer jib, damaging the rigging on the flying jib & jib which lay on either side. After making a new sail, I had to fit another outer jib stay & fit the new sail to it & then repair the damaged rigging adjacent. All sorted out now. I am about to move onto the middle & mizzen masts.

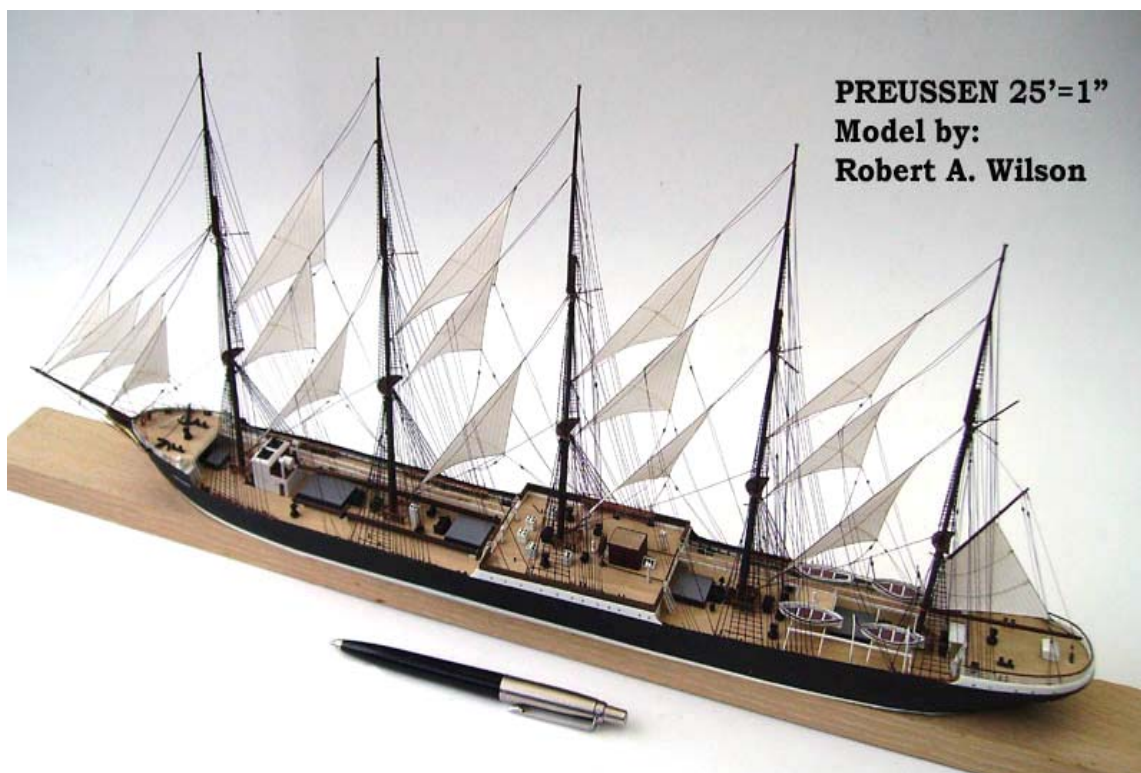


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The problem with sailing ship rigging is that although it is quite easy, it is also immensely boring. Larger scale modellers will no doubt agree when they tackle the enormous job of putting the ratlines on with individual knots. At least I can escape that by soldering them on in bulk.

By building miniatures, I can take on the largest sailing ships, but even then it can be hard-going. I am now getting really fed up of PREUSSEN's fore & aft sails, but now only have the spanker to put on. Then I have to make the 30 yards & sails & fit & rig them all. I will probably be quite tired of it all by the time it is finished & looking forward to getting back to a steamship which, although more challenging, is less boring. However the PREUSSEN is giving me a great deal of satisfaction despite the repetitive nature of its construction. There already is someone standing by who has asked for "first refusal" when it is complete. The sea is already made & is awaiting painting.

I have now completed all the standing rigging & set & rigged all the fore-and-aft sails. I will probably begin setting & rigging the 30 square sails on Monday. So far there is approximately 80 feet of wire rigging on the model. The spanker looks rather strange because it is a lot smaller than the boom & gaff, also the foot of it is not secured to the gaff apart from the clew. This is how it was & I have no idea why



I took time off from setting sails & rigging today & have just completed veneering the display case - a task I have been putting off for weeks. I don't suppose there will be as much rigging on the braces etc as there was in the standing rigging (about 80 feet), but I will probably add it all up once it is complete. It is closer to completion than you would imagine, because the higher the sails are, the simpler the rigging. No doubt Christine will have painted the sea by the time the rigging is complete & it will all go together very quickly. The beauty of miniatures is that they take up little space, materials don't cost much either & not many tools are required to build them. I wish I had built the PREUSSEN to 32'=1" instead of 25'=1". Building a 16-inch-long steamer is a lot easier than a 16-inch sailing ship because it doesn't have the tall masts & yards sticking out all over the place. Making the display case required some effort as well.

Incidentally, when the PREUSSEN went ashore at Dover in 1910, Christine's late father was taken to the cliffs by his father (who had served over 30 years in ocean-going square-riggers) to see the sad site of the great PREUSSEN lying on the shore partly dismasted. 70 years later, he still remembered it all vividly.

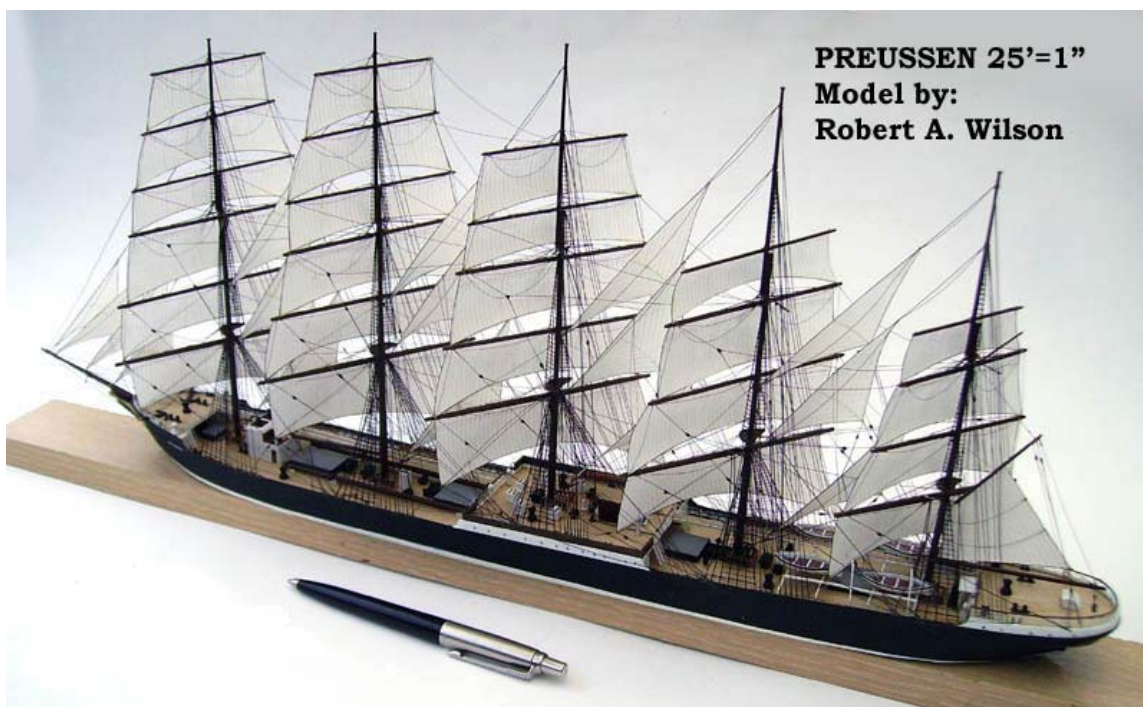
I have now set all the topsails but so far have not put much rigging on the upper ones. Before completing the upper topsail rigging, I now need to make & paint the remaining 15 yards which comprise the lower & upper t'gallants & royals. Here is progress at the moment



With 22 of the total of 30 square sails set, I feel that at last the finishing line has heaved in sight. The sails currently set have not been completely rigged as I stopped in order to get a photograph before the light went. With only eight square sails left to cut, fit & rig, it should be finished within a few days.



I am now plodding along towards the finishing line with only five more square sails to set & rig. There is also quite a bit of rigging remaining to be done on the sails that have already been set. Hope to be complete by Monday.



We both worked from dawn to dusk yesterday, me rigging & Christine preparing & painting the sea. Still some work to do on the display case & carrying case as well as a bit of tidying up on the rigging.

It became hard-going towards the end, but we are very happy with the result. Must tidy up the work desk now & recover ourselves for the next model. Thank you all for the comments & observations. For those of you interested in miniature paintings, Christine now has her own little website www.miniaturepaintings.blogspot.com



Here is another view taken from a lower angle



Footnotes

Bob maintains his website at <http://www.miniatureships.blogspot.com/> on this you may view many wonderful examples of his work.
He also has available a CD disk detailing the methods he employs for those interested in trying their hand at this exquisite area of our hobby (see below)

MINIATURE SHIPBUILDING, SHIPS & SHIPMODELS
CD disk e-book

This e-book is contained on a CD disk and is produced in ACROBAT PDF format. It will run on computers with Acrobat Reader installed. This is a very common programme and if your computer does not already have it, free downloads may be obtained from a number of websites. A breakdown of the sections is given below:

Introduction and notes on building miniature model ships. Tools & materials required.

Constructional notes on building a miniature model of the steel-hulled full-rigged ship CROMARTYSHIRE of 1879.

Notes on the rigging of a full-rigged ship.

Constructional notes on building a miniature model of the motor ship TRAFALGAR of 1938.

Odds & Ends including modelling seas, flags & funnel emblems, plan sources. Scaling of plans, sailmaking in miniatures.

On Deck – a photographic display of deck scenes on various types of ship.

A list of recommended books for further reading.

Plans of the motorship TRAFALGAR and plans of the full-rigged ship MEDEA (Similar to CROMARTYSHIRE) are also included on the disk.

The above section is about 22,979 words long (91 pages) and has 212 illustrations (Mostly colour photographs).

Front & back covers are included in case you wish to print the book out. Should you wish to print it out, it has been split into sections so that the whole thing may be printed in stages rather than one long print run.

The most economic use of this book is to simply study the techniques on the computer monitor and only print the sections you particularly want to use at that time.

In addition to the above, a second section, more of a historical nature is included. It covers the careers of the careers of 52 ships and each is illustrated by a photograph of a miniature model built by the author and is also split into sections:

1835 – 1894

1894 – 1912

1913 – 1936

1936 – 1947

1948 – 1962

This section covers the transition from sail to steam in the Merchant Navy and has 73 pages, 28,180 words and 72 photographs.

Total text of book 51,159 words approx. Total photographs 280 approx.

The CD is in a plastic case.

Bob has also written and published a book, **RMS St. Helena and The South Atlantic Islands**. Details of this can be found at <http://moo.whittlespublishing.com/whittles/item/4914> it contains

A record of an idyllic way of life on the last British passenger liner

In an age that takes air transport for granted, the British colony of St. Helena does not have the luxury of an airstrip - visitors or islanders must come or go by sea. When the Union-Castle passenger/cargo shipping service ended in 1977, the 6,500 inhabitants were left without a regular sea link. After a worldwide search, the tiny St. Helena was awarded the Royal Mail/Passenger contract and after refit carried passengers, Royal Mail and everything the islands needed on the long haul from Avonmouth in the UK to Cape Town, via the islands of St. Helena and Ascension. Finding himself at a low ebb serving aboard a cargo ship on the west coast of Africa, the author was invited to join the RMS St. Helena where he found the clock had been turned back to an idyllic lifestyle. It was not long before this unique service gained international recognition and passengers came from all over the world. In scenes reminiscent of Conrad, additional passengers were also carried on deck between Ascension and St. Helena.

However, early in 1982 the vessel was requisitioned by the Ministry of Defence as a minehunter support ship to the Task Force for the Falklands War. Uprooted from the comfortable passenger cargo service, the author and his shipmates sailed into the dangers and discomforts of the South Atlantic where they were employed on mine-disposal and wreck location as mother ship to HMS Brecon and HMS Ledbury. On completion of minesweeping operations, the St. Helena returned as a mini-troop/storeship running between Ascension Island, Port Stanley and the island of South Georgia. In this area, wrecks of 19th century sailing ships littered the islands, many of which could be boarded, and the author took the opportunity to research and photograph these partially submerged or sunken ghost ships.

On completion of the MoD charter, the St. Helena returned to her normal service, adding the remote island of Tristan da Cunha to her ports of call. Following a disastrous engine-room fire on Hallowe'en, 1984, the vessel was almost lost and had to be towed to Dakar for repair. Early in 1991 she was replaced by a magnificent new and considerably larger vessel, also the St. Helena. However, life on board was not the same as in the old ship and after a career of 31 years, the author reluctantly decided to leave the sea. During his twelve years service aboard RMS St. Helena life was never dull, leaving him with affectionate and pleasurable memories of this fine ship.

What the reviews say:

*'...Written in a very easy style this book transmits in clear language what it is like to serve on board one of the world's famous ships... As a bonus, trips to South Georgia and Tristan da Cunha are vividly described. ...this excellent book. ... Highly recommended'. **Sea Breezes***