The Model of a Screw Steamship from the Studio of Marine Painter Eduard van Heemskerck van Beest

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In 1877 the Nederlandsch Museum voor Geschiedenis en Kunst, which became part of the Rijksmuseum in 1927, bought eleven nineteenth-century ship models from the former naval officer and marine painter Jacob Eduard van Heemskerck van Beest (1828-1894). The various models, among them Indonesian proas, a Scheveningen fishing pink and a war galley, also included a nineteenth-century screw steamer (fig. 1).[1] It was a hybrid of a traditional sailing ship and one powered by steam. The model had been badly damaged: the rigging had become entangled, spars and clews lay on the deck, most of the masts and yards were broken and, like the deck, had been affected by insect damage. Due to the model's condition, its sparsely detailed and little refined character, it had not yet been prioritized in the conservation programme for the ship model collection.[2]

< *detail fig. 1*

Fig. 1
Model of the screw steamship before restoration, c. 1850-70. Wood, metal, rope, paint, 12 x 94 x 12.5 cm. Amsterdam, Rijksmuseum, inv. no. NG-NM-4162.

The recent restoration treatment prompted research into the form, function and dating of the type of ship it represented. The provenance and significance of the model in the setting of the painter's studio were also investigated. The broader context in which the model played a role can be found in Van Heemskerck's biography. The restoration of the model and the related research form the basis of this article.

Eduard van Heemskerck

Jonkheer Jacob Eduard van Heemskerck van Beest was born on 28 February 1828 in Kampen, where his parents went to live after his father, Dirk van Heemskerck van Beest (1779-1845),

had retired. His father had had a long career in the Dutch Republic, British and Dutch navies. His last posting was on Semarang in the Dutch East Indies, where as 'equipagemeester' (highest in rank responsible for the equipment of navy ships) he was responsible for the victualling of ships. In 1822, after his active service, twice widowed and the father of six children, he married Lucie Onno Zwiera van Ingen (1796-1870), with whom he had seven more children. Eduard was the third child from this marriage and went to sea, following in his father's nautical footsteps.[3] In 1837, when Eduard was nine years old, his father enrolled him as a pupil at the Royal Naval Institute (KIM) in Medemblik.[4] This was where naval officers were trained and in due course he had to take an entrance exam. He passed the exam on 15 June 1842, after which he was given a place there as a 'midshipman before actual naval service' on 1 October of that year. His parents contributed half of the training costs, the other half was provided by the State.[5] The training also included drawing with marine painter Petrus Schotel (1808-1865) as his teacher.[6] His aptitude for drawing and painting would have been stimulated by the Institute. It has been suggested that he was also given lessons by the landscape painter Dirk van Lokhorst (1818-1893) although there is no concrete proof of this.[7] Van Heemskerck completed his training and on 23 August 1846 was promoted to midshipman first class, after which his actual active service at sea could begin.

His first ship was the corvette *HNLMS Argo*, which in December of that year sailed from Den Helder (Nieuwediep) to the East Indies and in the years that followed would be the vessel on which

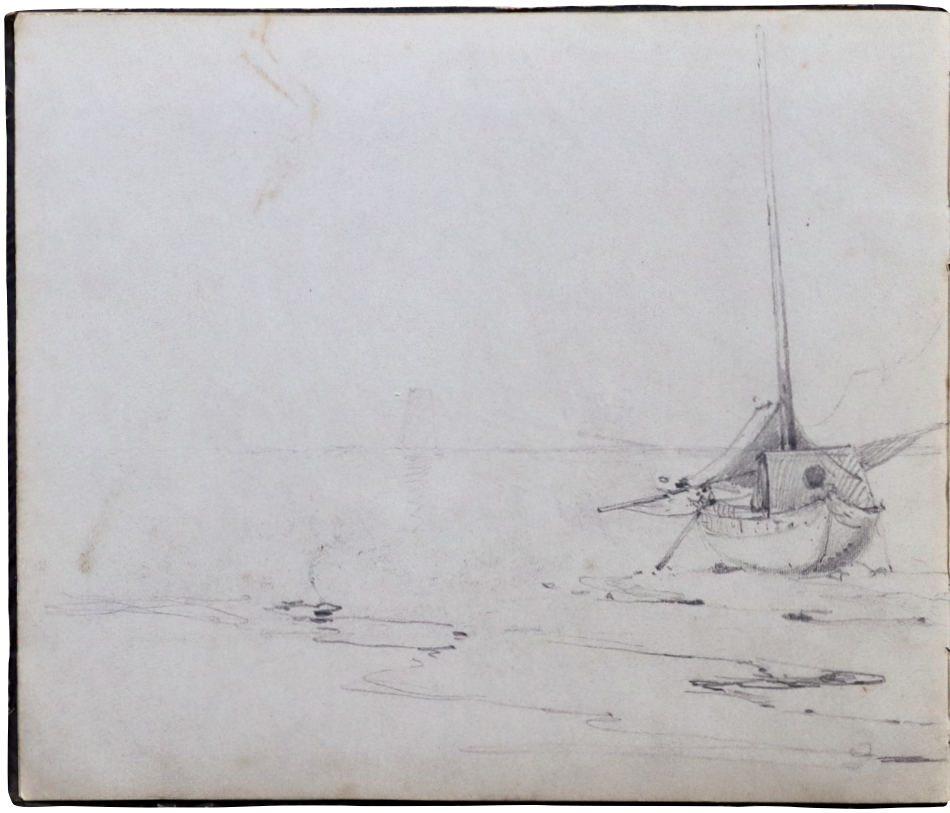

Fig. 2
JACOB EDUARD VAN HEEMSKERCK VAN BEEST, *Pirate Prahoe Bengaaij (Off the East Coast of the Celebes)*, drawing in a sketchbook.
J.E. van Heemskerck van Beest Collection, Naarden.
Photo: J.E. van Heemskerck van Beest

Van Heemskerck took part in the 'Third Bali Expedition' (1849). This colonial war, fought against various independent Balinese principalities that refused to submit to Dutch colonial rule, would last until the beginning of the twentieth century. On 31 December 1849 he received a knighthood in the Orde van de Nederlandsche Leeuw.[8] After the Fifth Bali Expedition in 1868, a special decoration was created for those who took part in the Bali Expeditions and on 28 August 1869, Van Heemskerck received his, with the accompanying diploma 'for the military operations witnessed and experienced by you … as a mid-shipman first class'. In 1878, thirty years after the First Bali Expedition, he again received an honourable mention with insignia.[9] During his travels his artistry developed further. His sketchbooks from that time contain various coastal views and seascapes and he also made a number of paintings there (fig. 2).[10]

On 1 January 1850, Van Heemskerck was promoted to Second Lieutenant, which required him to take another exam; the increased salary would only be paid after he had passed it. In April 1851 the removal of the *Argo* from active service meant that the minister had also made him temporarily non-active and this gave him the opportunity to take his lieutenant's exam later that month.[11] With his new rank he stayed aboard the schooner HNLMS *Atalante* from March to July, and was taken on a voyage to Suriname and Curaçao.[12] Whether he also made sketches in the colonies in the West Indies is not apparent from the available sketchbooks but he did make the lithographs for Second Lieutenant

Fig. 3
JACOB EDUARD VAN HEEMSKERCK VAN BEEST, *HNLMS Medusa Forces a Passage through the Straits of Shimonoseki*, 1864.
Oil on canvas, 68 x 107 cm.
Amsterdam, Rijksmuseum, inv. no. SK-A-2725; purchased by King William III, his gift to Admiral F. de Casembroot, by descent to A.T.J. de Casembroot-van de Poll, his gift to the museum.

G.W.C. Voorduin's loose-leaf book of plates published in 1860-62.[13] In connection with his upcoming marriage, he was accommodated in a barracks ship in Hellevoetsluis on 1 October 1852.[14] On 15 October he married Geertruida Berendina de Feijfer (1829-1901) in Dokkum.[15] His marriage and his longing to be an artist made him decide to end his naval career on 1 January1853. The fact that the steamship *HNLMS Sindoro* he had been transferred to on 1 December 1852, was about to be deployed to the West Indies would have hastened his discharge application.[16] After ending his military career, Van Heemskerck and his wife settled in Utrecht, where five of his six children were born. Like many artists at the start of their careers, he tried to bring his work to the attention of the royal family. Were a member of the house to purchase one of his works, after all, it would mean attention in the press and be an implicit visiting card. He succeeded with his painting of *HNLMS Medusa Forces the Passage through the Straits of Shimonoseki*, which was acquired by King William III in 1864 (fig. 3).[17] It shows the first-class *Medusa* manoeuvring under steam power while firing its cannons.

Van Heemskerck went on to have a good relationship with King William III for the rest of his life. He was a guest at Het Loo Palace in Apeldoorn on several occasions by personal invitation from his majesty, from whom he received three awards.[18] At the king's invitation, Van Heemskerck joined the 'Commissie tot bevordering van het werk van jonge kunstschilders' (the Committee for the Promotion of Work by Young Artists), a fund that annually awarded subsidies to fledgling artists 'for the continuation of their studies'.[19] After William III died, his widow and regent Queen Emma, and his daughter Princess Wilhelmina, also bought work by Van Heemskerck.[20]

Ship Models and Paintings

In 1867 the Van Heemskercks moved to a large house in Scheveningseweg in The Hague, where the artistic climate was more favourable and the market for seascapes was bigger than in Utrecht. A commission that gave him great pleasure and reached a wide public during this period was to make a large series of drawings for the book *La Hollande pittoresque: voyage aux villes mortes du Zuiderzée* (1874), which was reprinted several times and translated into English. He spent months on a small boat sailing along the Zuiderzee coast with Henry Havard (1838-1921), the French art historian and author of the book, Havard writing and Van Heemskerck sketching.[21] He frequently provided illustrations for books, in 1877 for example, for the publication of a romanticized Polar voyage *De Arpanjak* by the Amsterdam journalist and publisher Charles Boissevain (1842-1927).[22]

On 1 April 1876, Jacoba van Heemskerck van Beest, a late arrival, was born in The Hague. She followed in her father's footsteps and as an Expressionist painter would go on to achieve even greater recognition than he did. Van Heemskerck could not have experienced much of his youngest daughter's first year of life. From May to November of that year he was in Philadelphia as a member of the panel of judges of the international exhibition to mark the centenary of the independence of the United States (fig. 4).[23]

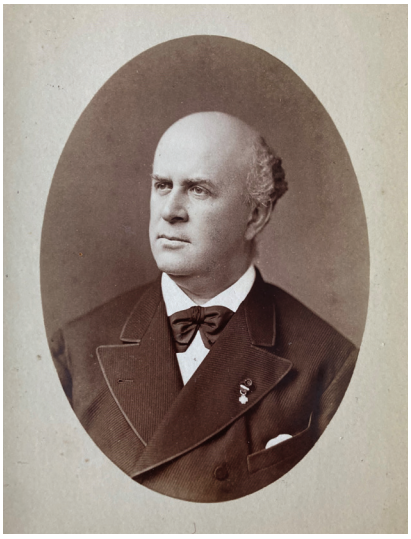

Fig. 4
F. GUTEKUNST, cabinet card of *Jacob Eduard van Heemskerck van Beest (1828-1894)*, 1876, Philadelphia (USA). A. van Heemskerck van Beest Collection. On his lapel the Decoration for Important War Services with the Bali Clasp.

Aside from painting, after the death of his in-laws, between 1867 and 1870 Van Heemskerck was also responsible for the administration of Doniazathe, the inherited agrarian complex in Nijkerk in Friesland.[24] The fluctuating sales of his paintings may have encouraged him to delve deeper into making money from farming. In any event, he bought the De Bese estate, in the Overijssel countryside near Dalfsen in 1878. He immersed himself in farming life. Not as a working farmer, but employing tenant farmers as producers of top-quality butter, which on many occasions won prizes at agricultural shows. He also tried to help farmers' businesses further by forming a local agricultural association.[25] The international agricultural crisis, caused by cheap imports from North America which began in that very same year, 1878, adversely affected his business. In 1886 he bid farewell to rural Overijssel, and the couple and their as yet unmarried daughters went to Scheveningen, where they moved into Villa Bella Duna in the Van Stolk Park. It was there that he made the drawings for the illustrations in the *Zangen der Zee* anthology published by Louise Nagel (1845-1913).[26] In 1890 he left Scheveningen and moved to a newly built house in Surinamestraat in The Hague.[27] 'After long suffering' he died there on 24 December 1894. High-ranking naval and army officers were present at his funeral, as well as a number of representatives from the art world and from the royal household.[28]

We have no detailed information about the studios at the various addresses, but a modest impression of Van Heemskerck's working environment in the house where he died emerges by studying his will of 25 June 1892[29] and the estate inventory of 28 January 1895,[30]

which was drawn up after his death. Appropriately, he had left all his painting equipment to his daughter Jacoba: his 'painter's easels', a 'painter's table', chests and his 'painter's chair', all of them valued at fairly low prices between four and ten guilders. These objects were also mentioned in the introduction to the inventory as located in what was referred to as the 'painting room' (studio). Strangely enough, the painting room does not feature again in the actual estate inventory. It was probably the space referred to as the conservatory, a light space on the ground floor ideal for a painter. The bequeathed objects do not appear in the inventory, but the presence of a 'painting stand' and a striking number of paintings (thirteen), etchings (four) and drawings (three) make this allocation plausible. The lack of other furnishings in this room, aside from the painting equipment mentioned in the will, also points to this. No ship models are mentioned in the estate inventory. Van Heemskerck had sold them in 1877 and it seems that he had not purchased any new examples.

Van Heemskerck van Beest's Collection

Eduard van Heemskerck must have built up a collection of antique objects during the years he lived in Utrecht and in The Hague, in part, perhaps, through inheritance. In December 1877, shortly before moving to Dalfsen, he sold this collection for the then huge sum of 20,000 guilders to the Nederlandsch Museum voor Geschiedenis en Kunst in The Hague, which would later form part of the Rijksmuseum. He had his house in Scheveningseweg decorated

Fig. 5
Compilation of the two room panels dating from 1617 and 1626 from J.E. van Heemskerck van Beest's collection in the permanent display. Amsterdam, Rijksmuseum, inv. nos. BK-NM-3931-A and B.

in seventeenth-century style. Among the striking features were the magnificent wall panelling from 1617 and 1626, which had come from Dordrecht: two 'antique wall panels ... which would have had no equal in Holland' (fig. 5).[31] In both rooms he had arranged around 250 objects dating from the seventeenth century, among them paintings, tables and chairs, stools, chests, chandeliers, clocks, Chinese and Japanese porcelain, pottery, glassware and a tile scene. The panelling and countless other objects of great art-historical value from this collection are now part of the Rijksmuseum's permanent display. Some correspondence preceded the acquisition, as large expenditure by the State-subsidized Nederlandsch Museum had to be pre-approved by parliament. There was some urgency because collections like this were fashionable in the late eighteen-seventies. 'Goudsmit, an agent of Rothschild ... through whose intervention we had already lost so much of importance to us' had already approached Van Heemskerck, but he wanted his collection to remain in the Netherlands. After negotiation the asking price of 30,000 guilders was reduced by a third. The prestigious purchase, which was reported in the national newspapers, went ahead quickly and without much opposition because of the decisive action taken by the then director of the Nederlandsch Museum, David van der Kellen (1827-1895). The fact that he was a good friend of Eduard van Heemskerck's would undoubtedly have contributed to that. Among other things, they were both members of the 'art sub-committee' of the Pulchri artists' society in The Hague, which had taken care of the

Dutch entry for the world exhibition in Philadelphia.[32] Immediately after its acquisition, the collection was split up and distributed among the still existing national museums. The Chinese, Japanese and Javanese objects were transferred to the Royal Cabinet of Rarities, a little painting by Pieter Codde, *Trik-Trak Players*, to the Royal Cabinet of Paintings (Mauritshuis, inv. no. 445) and the ship models were destined for the model room of the Department of the Navy. When the Rijksmuseum opened on Stadhouderskade, these were added to the museum, so the models are now in its collection.[33]

The purchase was preceded by an inventory of all the objects belonging to the collection. The 'List of separate objects not forming part of the room panelling: collection of Jhr. E. van Heemskerck van Beest' (20 October 1877) also mentions 'ten ship models', later revised in pencil to the correct 'eleven'. This statement implies that the models had not been in the studio, but in the seventeenth-century rooms, although this seems unlikely. The models are the only objects that all date from the nineteenth century, and even for the layman were striking exceptions in the ensemble. What is more, by comparison with most of the other objects, they were of a much lower quality and must have taken up a relatively large amount of space. It would seem that Van Heemskerck took the opportunity to simply get rid of this small, somewhat fragmented collection.[34]

The Model before Restoration

One of the eleven models is a 'modern' screw steamship, which also had sails. The model was badly damaged at some point during the time it spent in the Nederlandsch Museum or in the Rijksmuseum. Since there are relatively few models of screw steamships in public collections, it was decided to restore it, despite the lack of details. The research undertaken parallel to the restoration into the significance of the model in Eduard van Heemskerck's painting career strengthened the argument for this decision.

Fig. 6
The block of softwood with the grease stain in the hull.

The model has a solid hull, made from hazelwood (Corylus avellana).[35] The interior of the hull was roughly hacked out and the inside is visible because a section of the deck amidships is missing. This opening in the deck makes it possible to see a support made of softwood, which is attached to the bottom of the hull. In the support there is a rectangular, shallow notch with three round shallow holes and a brass brace. It seems as though there was something in the cavity and on the support. This suspicion was reinforced by the presence of a noticeable spot of grease, undoubtedly related to what was previously in the cavity (fig. 6). Analysis of the spot showed that the chemical composition of the spot contained fatty acid and alkyl benzenes, which are used as oil to transfer heat and to serve as lubrication.[36] The traces of oil were an indication that there was a little steam engine, now missing, inside the hull.

Despite the almost straight sheer, the model's hull has a certain elegance. The prow has a concave bow which flares forwards (clipper bow) and a

raked, slightly curved stern. Under the stern there is a single two-bladed screw and rudder with a round blade. The hull has the shape of an S-frame and is painted black above the water line. Copper-coloured paint was applied below the waterline. It is impossible to say whether the model represents a ship with an iron or wooden hull. Planks or plating are not accentuated on the solid hull. It could also be an example of a composite construction and that the yellowish-brown colour represents the copper plating of a wooden hull. Beneath the hull there is a lead keel, which must have been put on to counter the high specific gravity. The presence of this weight at the lowest point of the hull increases the model's stability in the water. It is quite likely, given the strong indications of the presence of a steam engine, that the model was a toy ship model. The use of materials and the distribution of weight are different in models than in real ships, which is why toy models often have a heavyweight keel. Although ship models like this one can be found in Dutch maritime collections, they are rather rare.[37] This is why it is remarkable that two other models from Van Heemskerck's collection also have a lead keel. This may indicate that the painter and/or his children used to play with toy ship models as a hobby.[38]

Figs. 7a, b
The deformation of the keel, side view and bottom view.

The condition of the model was such that little could be said about its rigging and the original vertical dimensions before treatment. Sections of masts and yards were gathered on the deck and in the hull. Judging by the location of the chain plates the model had three masts; there were no signs of sails. There was a capstan, a galley, various deck cabins and hatch covers, but no signs of gun ports and lids for firing cannons.

The object's poor condition was caused in part by impact damage, possibly because it had been dropped or something had dropped on it. The dimensions are on the original inventory card (in metres) 'l 0.955, h 0.84, w 0.12'. The height measurement indicates that the model's large mast was still intact when it was acquired, whereas the model was recently found with broken masts. The relatively tall masts for this type of ship are striking, higher than in comparable ships, and there seems to be no explanation for this.

Metal sections like the crosstrees, catheads and davits were warped. The lead keel, the forward section in particular, was badly deformed.[39] A crack was found in the keel at the end of the distortion (figs. 7a, b). Aside from all this damage, there was also serious insect damage in the wood, predomi-

Fig. 8
The foredeck with insect damage and the label with the inventory number, view from above.

nantly in the wood of the deck and the bottom of the masts. Round exit holes with diameters of around 1 mm indicate damage by woodworm (Anobium punctatum). The object number 4162 affixed to the foredeck is perforated by an exit hole. From this we can deduce that the woodworm infestation started or continued after the object entered the Rijksmuseum's collection (fig. 8). The section of the deck immediately aft of the foremast was the worst affected, but below-deck sections of the masts had also been weakened by woodworm damage (fig. 9).[40]

Different types of rope could be identified in the rigging, but it was unclear which were original and which were added later. Most of the ropes were brittle, broken or in danger of breaking if handled, and some of the halyards were missing altogether. The ropes were also entangled. The mast and yards were broken, damaged and warped. The fact that the standing rigging was still largely attached to the chain plates and many of the lines were still secured to the spars was helpful in reconstructing the rigging. While the rigging was being disentangled and further restoration of the object continued, essential parts were found to be missing. A number of broken-off or loose parts had been kept separately, but some parts were no longer present, including the section of the deck amidships with the funnel, the anchors, sections of the masts and yards, studding sail booms, gaffs, capstan bars, lifeboats and various pulley blocks.

The Restoration

The aim of the restoration treatment was to give the ship model overall stability by repairing the various loose and damaged parts, so that the object could be better interpreted and shown to the public again.[41] The question of

Fig. 9
The loose parts of the deck.

Fig. 10
The rigging was temporarily placed in more or less the correct position.

whether this nineteenth-century screw steamship could be given a more precise designation of type, could only be answered after a full treatment, including repairs to the upper decks. The objective was to make the model as complete as possible on the basis of the available parts. Missing parts were only refabricated if essential for the representation of the ship and if an example of what it had looked like could be found.

The first step in the treatment was to repair the original rigging.[42] To determine how much of the rigging was missing and what it had looked like, it was necessary to disentangle the piles of rope and spars. The shape of the rigging could be reconstructed by uncovering the rigging step-by-step and putting the individual lines in the right places. The model was placed in an aluminium frame so that the various lines could be temporarily affixed to it (fig. 10). The positions of all the surviving lines could be located, with the exception of a couple of short pieces. In this phase the shape of the rigging slowly but surely became clear.

Around a quarter of the original lines proved to be missing. This could largely be supplemented by following the example of the rope work still present. The connections that were still intact between the lines and the spars or the hull formed the start of this process. Where these connections no longer existed, additions were based on the principle of symmetry, which meant that the other (port or starboard) side of the rigging was mirrored. If this information could not be derived from the model itself, literature was consulted and examples of rigging were studied from similar ships like HNLMS *Watergeus* (see fig. 14).[43] Where the rigging was broken but could still actually be connected, the strands at the ends were twisted apart over a length

Fig. 11
The consolidated parts of the deck on a support placed back in the hull. Photograph taken during the restoration.

of a centimetre. Glue was applied to the individual strands and then the strands of both lines were twisted back together. If parts of the rigging were missing, replacement cotton twine was attached in the same way.[44]

The next step was the supplementary restoration of the damaged and missing wooden sections. Broken masts and yards were glued back together. Missing sections of the masts, studding sail booms and gaffs were reconstructed using pearwood. The lengths of the masts were determined on the basis of the surviving spars, the rigging, literature and rigging plans of comparable steam ships. The consolidated broken sections of the deck were reinforced with Japanese paper and glued on to a 1.5 mm plywood support which was then bonded in to the hull (fig. 11). This made it possible to reposition the original, fragmented material. The deck cabin, the hatch covers and one of the galleys were reattached to the deck. When it was not possible to discover what the missing parts such as the lifeboats and the anchor looked like, it was decided not to reconstruct them.

The distorted metal sections were carefully bent back into their correct shapes. As the material was extremely fragile and there was an increased risk of its cracking, some of the joints were not completely bent back. The brass davits were restored to their original shapes with the aid of a vice. The lead keel was carefully straightened, likewise with the aid of a vice, and then reattached.

The discovery of the section of the amidships deck with a funnel on it, at the bottom of a box of loose parts in the museum's depot was a stroke of luck (fig. 12). Unlike the wood still present on the model's deck, this section had not been damaged by woodworm. It must have been detached from the model at some point, and kept in better conditions. The presence of a copper knob that could be used to easily lift the section of the deck and give access to the hollow hull and the steam engine was remarkable. A brass pawl in the hollow space probably served to fix the steam engine in place.

Once all the broken sections of the spars and the tangled rigging had been removed from the deck, a better view of the hollowed-out part of the hull below decks emerged. There proved to be a metal bar running from the support to the screw. As a drive shaft like this would have no function in a display model, this metal bar was another indication of the former presence of a little steam engine.

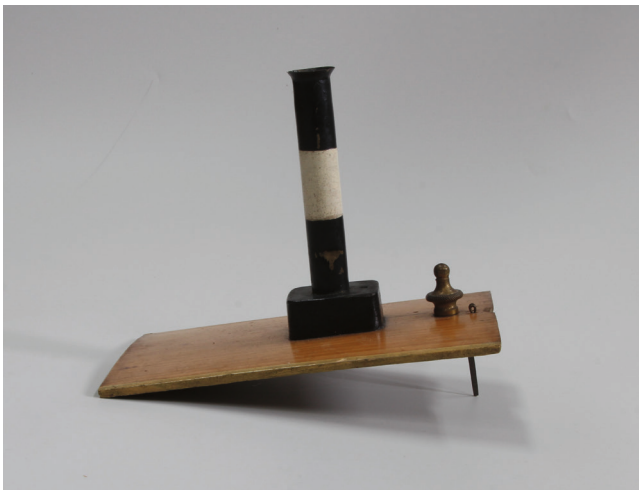

Fig. 12
The section of the deck amidships with the funnel, with a brass knob on top and a brass pawl on the underside.

Fig. 13
Model of the screw steamship after restoration, 1850-77. Wood, metal, rope, paint, 78 x 122 x 44 cm. Amsterdam, Rijksmuseum, inv. no. NG-NM-4162 (see fig. 1).

The Model after Restoration

The rigged model as it looked after the restoration treatment (fig. 13) is a typical and generic example of a nineteenth-century, three-mast, screw steamship, relatively few of which can be found in Dutch collections.[45] The shape this ship model's rigging took on after restoration is that of a partially square-rigged three-master. The main mast and foremast consist of a lower mast, a top mast and a top gallant. All three sections of the mast have lines and spars for carrying square sails. Behind the lower masts there is a gaff to which a gaff rig can be attached. The mizzen mast consists of a relatively long lower mast with a fore-and-aft spanker and a topmast with a gaff topsail on it. The presence of studding sail booms on the yards indicates that the surface of the square sails could be increased by setting the studding sails. There may have been a number of staysails on the long stay. The stays on the bowsprit and jibboom may have carried a flying jib, an outer jib and inner jib and a fore topmast stay sail. This way of rigging is regarded as characteristic of a barque.[46]

Given the position and the number of davits on each side of ship, two missing lifeboats were once attached to them. There was an anchor on the port as well as the starboard side of the bow on screw steamships. Prior to the restoration, the shape of the model's hull could already be described as an S-frame with a clipper bow and a slightly raked and curved transom. After restoration it became clear that the ship has one continuous deck on which the upright funnel had been placed just forward of the mainmast.

Fig. 14
Model of the screw steamship *HNLMS Watergeus*, 1863. Wood, brass and rope, paint, 35.5 × 79 × 17 cm. Amsterdam, Rijksmuseum, inv. no. NG-MC-1134.

It has a single screw with two narrow blades. A frame for lifting this screw, as can be seen in the *Watergeus* (fig. 14), is not present.[47] We also know that the *Watergeus* had a telescopic funnel, which was lowered to reduce air resistance when just using the sails.[48] No such telescopic structure was found on the Van Heemskerck model; its detailing is too limited for that. It is interesting that a hole had been made in the wooden deck of the model at the place where the funnel is located, so that flue gases from a little steam engine could actually be passed through it.

Screw Steamships

The question raised by the model from Van Heemskerck van Beest's collection is whether it is a representation of a nineteenth-century steamship that once existed, one of the navy's classes or a merchantman, or a standard representation of a similar type of ship. In 1853, when Van Heemskerck left the navy, this type of ship had just made its entrance into the Dutch navy. It soon became all the rage. The great advantage of this type of screw steamship was that as a hybrid of a sailing ship and a steamer it combined the benefits of both. With favourable winds, coal was saved since a smaller quantity was required in the holds. There was also relatively little room for it in this type of ship, due to its shape and the space taken up by the sails and by the living quarters. At the same time, it benefited greatly from steam propulsion in light winds and headwinds. During manoeuvres, when there was a great deal to be turned and adjusted, this increased

the manoeuvrability and aided in maintaining speed.[49] As a rule, these screw steamships were rigged with three masts like barques or frigates and the later versions often had a clipper bow. The stern was round and the national coat of arms was affixed to the flat sterns of naval vessels. Originally steamships were propelled by a single screw; later a double screw, driven by a steam engine in the hull amidships, was also used. This type of ship was clearly recognizable by the funnel in combination with the masts. Four classes of screw steamships were eventually deployed by the Dutch navy, the number of guns and the tonnage decreasing as more classes were built. In 1864, for example, the first class of ships were 250hp and had 16 guns, second class 250hp and 14 guns, third class 119hp and 10 guns, fourth class 80hp and 10 guns or 70hp and 9 guns.[50] In paintings and other representations it is difficult to determine which class of steamship is being shown because the size of the ship and other parts of it are often not clearly visible.

Like the navy, the mercantile marine also made use of screw steamships. As far as silhouettes are concerned, the naval and merchant variants do not differ substantially; from a distance the former could be identified by the presence of the gun ports. The steamships made a regular service possible for the merchant navy and they also paved the way for huge progress in carrying passengers and post. It is noticeable that shipping lines at that time used silhouettes of screw steamships as illustrations in their advertisements. It shows the popularity of this type of ship and the operator's innovative nature.[51] The absence of gun ports and of a screw lifting device, often fitted to naval steamships, may indicate that the Van Heemskerck model represents a privately owned ship. However, it is not possible to convincingly attribute the model to the mercantile marine or to the navy. As it was used as a toy sailing boat, it was not meant to be looked at closely and a lot of detail was probably not required. The presence of a single screw dates the model to the third quarter of the nineteenth century, with the introduction of screw steamships into the navy in 1852 (*HNLMS Medusa*) as the starting date and 1877, the year in which the ship model was acquired by the museum, as the end date.

The Model's Role

Van Heemskerck van Beest's ship models differ from the others in the Rijksmuseum's collection, most of which originate from the Naval Model Room, because of their relatively basic finish and limited details (fig. 15). The reason for this difference in quality must be related to the original role of the models and that of the steamship as a toy ship model in particular. Van Heemskerck would have set less stringent requirements for the details than the navy or the management of a shipping company. The first models he collected may have simply been nostalgic. Perhaps he took the Indonesian models with him when he left East Asia, but regardless of where he went, they would have undoubtedly brought back memories of the time he spent as a midshipman aboard the *Argo* hunting for 'pirates'. The colonial government continued to expand its seizure of power of the original societies and militant resistance expressed itself in many ways, one of which the colonizer termed 'piracy'. This could cause potential damage and loss to Western economic interests and so was fiercely opposed by the Dutch Navy.[52] Certainly reason enough for one of the proa models in Van Heemskerck's collection to be traditionally referred to as a 'pirate prahoe'. The fact that this subject inspired him is evident from

Fig. 15
A number of models from the Van Heemskerck van Beest collection. In the centre the screw steamship (NG-NM-4162).

Around it, clockwise from its right: a Scheveningen fishing pink, c. 1850-70 (NG-NM-4158), a war galley, c.1800-07 (NG-NM-4157), the schooner Banka, c. 1843 (NG-NM-4161), a merchant frigate, c. 1850-70, (NG-NM-4163), a French lugger, c. 1850-70 (NG-NM-4159) and a French pilot cutter, c. 1810-70 (NG-NM-4160).

the various drawings and paintings he made of it.[53]

The available models made it possible to study their construction and execution to a certain extent. They functioned as three-dimensional examples for his paintings and watercolours, supplementing the sketches he made. The types of ships in Van Heemskerck's collection are also found in other paintings, watercolours, drawings and sketchbooks. The sketch of a fishing lugger from Boulogne shows similarities to the model of a 'French lugger', but the models are not detailed enough to state with certainty that they served as the starting point for those works. Although Van Heemskerck, too, produced historicizing work with seventeenth-century seascapes and townscapes, he was also an artist of his time. With an expert's eye he clearly observed ships on active service, sketched them and then depicted them on canvas. With a few exceptions, his ship models are contemporary.

Painters of seascapes, including Van Heemskerck, often used sketches from life, although they were a secondary source in painting. When it came to technically complicated constructions like sailing ships, though, which continually changed perspective because of the dynamics of the water, artists found that roughly successful scale models were useful aids in depicting the relative proportions of such things as the rigging, masts, sheer and decks. It was difficult for artists, even if they were actually on the spot, to sketch the right moment while vessels were fully deployed or in choppy seas. It was only from a distance or when the sea was

Fig. 16
The merchant frigate, c. 1850-70, from the Van Heemskerck Collection, with painted waves on the hull. Wood, rope and fabric, approx. 106 x 133 x 60 cm. Amsterdam, Rijksmuseum, inv. no. NG-NM-4163.

Fig. 17
Jacob Eduard van Heemskerck van Beest, *HNLM Screw Steamship 1st Class Zilveren Kruis*, c. 1880. Oil on panel, 42.5 x 74 cm. Amsterdam, National Maritime Museum, inv. no. s.1249.

calm that a dynamic event on the water could be swiftly captured on paper. Many sketches or studies of ships were made when they were moored alongside quays, where the study of the rigging and the masts in particular was quite easy, as there was no movement in the rigging and masts caused by the wind and the sea, and the position of the ship would not change. A scale model in a painter's studio could be viewed or placed in various positions, frozen as it were, unaffected by rough seas and swells. It is interesting to note that Van Heemskerck had painted waves on the starboard side of the hull of the merchant frigate in his collection (fig. 16).[54] Van Heemskerck sketched and painted screw steamships several times. A large canvas in the collection of the National Maritime Museum (Amsterdam), *HNLMS Screw Steamship 1st Class Zilveren Kruis* (fig. 17), shows that a very detailed model was not necessarily needed as an example for marine painters. In capturing the movement of a ship at sea, the details are lost and its rough shapes and proportions are the most important.

We know that marine painters had ship models in their working environment. Van Heemskerck was not the only one who owned various examples; his successful fellow artist and contemporary Hendrik Willem Mesdag (1831-1915) also had a number of them in his studio, and they were moved into Rotterdam's Maritime Museum collection after his death. It is difficult to establish whether Mesdag, who had specialized in coastal scenes almost exclusively featuring 'bomschuiten' (flat bottomed fishing vessels), made much use of these models. However, he did have them within easy reach. This meant that he could place them in a given position and observe them so as to create a generic image. Aside from this function of studying perspective and depicting the shape of ships, the models played another role in the marine painter's studio. Surviving photographs of Mesdag's studio show that it was not just a place where he worked, but where he received his potential clients as well. The gentleman-artist immersed interested buyers in a maritime

atmosphere with seascapes on the walls and on easels, and with ship models on tables and chests.[55]

Like Mesdag, Eduard van Heemskerck surrounded himself with ship models in his house, and probably even more in his studio, until his move to Dalfsen in 1877. It was obvious to everyone what it was all about: the maritime world. The models were a reminder of Van Heemskerck's naval career and evoked an atmosphere conducive to the sale of his paintings. The models had both a functional and a marketing objective.

Conclusion

There are eleven nineteenth-century ship models in Van Heemskerck van Beest's collection. Eduard van Heemskerck van Beest was a marine painter, who had spent a short time in the navy before he devoted himself entirely to the arts, so there is an obvious interest in these types of objects. It seems likely that the models played a role in his studio in creating a maritime setting: as inspiration, as examples for his work and to put potential buyers of his paintings in the right mood.

One of the models, that of a screw steamship with sails, which has to be dated somewhere between 1850 and 1877, has recently been restored. Research was undertaken into the form, function and origin of this object, which until recently had been in a deplorable condition. It was discovered that the model has the generic characteristics of a screw steamship with sails, but the lack of details meant that it was impossible to identify a specific function (navy or merchant navy). There are, though, strong indications that it must have been a sailing toy model. Given the presence of a drive shaft to the screw, grease stains and a removable funnel, there was once a little steam engine in the empty cavity gouged out of the block from which the model was made. It also has a lead keel, which gave this toy model the stability it needed. In a normal ship model, it would have been made of wood. We do not know whether Van Heemskerck or his children actually used it as a sailing model.

It is surprising that ship models formed part of the collection that contained late seventeenth-century furniture, decorative pieces and paintings and the two room panels that Van Heemskerck sold in 1877. The nineteenth-century dating and undistinguished quality of the ship models mean that they are out of place in this collection. The imminent move from The Hague to Dalfsen must have prompted Van Heemskerck to part with this bulky set of objects. The model of the steamship was sold at that time and so was no longer an inspiration to paint or to be used as a plaything.

ABSTRACT

The Rijksmuseum has a number of nineteenth-century ship models once owned by the former naval officer and marine painter Jacob Eduard van Heemskerck van Beest (1828-1894). One of them, a model of the earliest generation of screw steamships with sails, a hybrid of a traditional sailing ship and a steamship, has recently been restored. During the restoration it was found to have the generic characteristics of a screw steamship, but a specific identification of function (navy or merchant navy) was not possible because of the lack of details. There are, though, strong indications that it must have been a sailing toy model. Given the presence of a drive shaft to the screw, grease stains (lubrication?) and a removable funnel, it seems that there was once a little steam engine in the empty cavity gouged out of the block from which the model was made. The model also has a lead keel, which gave this toy the stability it needed. In a normal ship model, the keel would have been made of wood. The fact that the painter Eduard van Heemskerck, who himself had spent a short time in the navy, was interested in ship models is obvious. It seems likely that the models played a role in his studio in creating a maritime setting: as inspiration, as examples for his work and to put potential buyers of his paintings in the right mood. However, it is less likely that they formed part of Van Heemskerck's carefully put together collection of seventeenth-century furniture, decorative pieces, paintings and two room panels that he sold to the forerunner of the Rijksmuseum in 1877. The nineteenth-century dating and undistinguished quality of the ship models mean that they are out of place in the collection acquired at that time.

NOTES

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1 Amsterdam, Rijksmuseum, ship models, inv. nos. NG-NM-4153 (Indonesian proa), NG-NM-4154 (Indonesian vessel), NG-NM-4155 (Indonesian proa), NG-NM-4156(Indonesian proa), NG-NM-4157 (war galley), NG-NM-4158 (pink), NG-NM-4159 (French lugger), NG-NM-4160 (French pilot cutter), NG-NM-4161 (schooner Banka), NG-NM-4162 (screw steamer) and NG-NM-4163 (merchant frigate). In the collection of the Maritime Museum Rotterdam there is a copper model of an open boyer (object number M87) which reportedly also originated from J.E. van Heemskerck van Beest's collection. Unfortunately, no further details are known about this acquisition (information from Anette de Wit, Maritime Museum Rotterdam).

2 Ab J. Hoving, *Message in a Model: Stories from the Navy Model Room of the Rijksmuseum*, Florence (OR) 2013, pp. 216-19.

3 Anonymous, 'Van Heemskerck van Beest', in *Nederlands Adelsboek*, vol. 84 (1994), The Hague 1995, pp. 354-57; A.H. Huussen Jr, *Een vergeten schilder en zijn dochter: Eduard van Heemskerck van Beest (1828-1894) en Jacoba van Heemskerck (1876-1923)*, Haren 2004 (*Cahiers uit het Noorden*, vol. 1), p. 2.

4 Van Heemskerck van Beest family archives, with thanks to A. van Heemskerck van Beest in Delft.

5 Van Heemskerck van Beest family archives, and the National Archives of the Netherlands (hereafter NL-HaNA), Archives of the Ministry of the Navy: Public report (accession no. 2.12.01), inv. no. 1958, 22-24 August 1842.

6 Cécile M. Bosman, *Eigen aan de natie: De Nederlandse zeeschilderkunst in de 19de eeuw*, Leiden (dissertation University of Leiden) 2021, p. 62.

7 Huussen 2004 (note 3), p. 6.

8 NL-HaNA, Archives of the Ministry of the Navy (2.12.01), inv. no. 2257, October-December 1849.

9 'voor de door U bijgewoonde krijgsverrigtingen … als adelborst 1e klasse meegemaakt'. Van Heemskerck van Beest family archives.
10 Sketchbooks in the possession of J.E. van Heemskerck van Beest in Naarden, see Huussen 2004 (note 3), pp. 5-6 and among other items, paintings in the collection of the National Maritime Museum in Amsterdam: *Proas Fleeing before an Approaching Dutch Warship*, 1864, inv. no. A.4902(01) and *Fight with Boeginesche Proas in 1820*, 1877, inv. no. S.1172(01)f.
11 Van Heemskerck van Beest family archives.
12 *Middelburgsche Courant*, 6 March and 24 July 1851; *De Curaçaosche Courant*, 14 June 1851.
13 *Gezigten uit Neerland's West-Indien, naar de natuur geteekend en beschreven door G.W.C. Voorduin, luitenant-ter-zee, op steen gebragt door Jhr. J.E. van Heemskerck van Beest, oud luitenant ter zee*, Amsterdam 1860-62 (e.g. Amsterdam, Rijksmuseum, inv. no. NG-1064).
14 Huussen 2004 (note 3), p. 3, and Van Heemskerck van Beest family archives.
15 Van Heemskerck van Beest family archives.
16 Van Heemskerck van Beest family archives, and Huussen 2004 (note 3), pp. 3-4.
17 Van Heemskerck van Beest family archives, Huussen 2004 (note 3), p. 7 and the anonymous obituary of Jhr. Van Heemskerck van Beest in the *Dagblad van Zuid-Holland en 's -Gravenhage*, 24 December 1894.
18 Van Heemskerck van Beest family archives, and Huussen 2004 (note 3), p. 8. These were Ridder Adolfs Orde (1865), Ridder 3de klasse van de Gouden Leeuw van Nassau (1875) and Officier in de Orde van de Eikenkroon (1876).
19 'tot voortzetting van hun studie'. *De Avondpost*, 24 December 1894.
20 Van Heemskerck van Beest family archives.
21 Henry Havard, *La Hollande pittoresque: voyage aux ville mortes du Zuiderzée*, Paris/The Hague 1874 / *The Dead Cities of the Zuyder Zee: A Voyage to the Picturesque Side of Holland*, Londen 1875; Huussen 2004 (note 3), pp. 10-11 and the Van Heemskerck van Beest family archives.
22 Charles Boissevain, *De Arpanjak*, The Hague 1877.
23 Van Heemskerck van Beest family archives, in which can be found the official records and admission tickets to various festivities.
24 For a description of Doniazathe see the estate inventory of G.B. de Feijfer, 23 May 1901, Haags Gemeentearchief (hereafter NL-HaHGA), Archive of The Hague Notaries II (accession no. 0373-01), inv. no. 2819.
25 Van Heemskerck van Beest family archives; *Algemeen Handelsblad*, 20 January 1879 and *Provinciale Overijsselsche en Zwolsche Courant*, 20 August 1884 and 10 January 1887.
26 Louise V. Nagel, *Zangen der Zee door Louise V. Nagel met strandgezichten naar teekeningen van Jhr. J.E. van Heemskerck van Beest*, The Hague 1888.
27 Huussen 2004 (note 3), pp. 15-19.
28 *Dagblad van Zuid-Holland en 's-Gravenhage*, 24 December 1894; *Utrechtsche Provinciale en Stedelijke Courant*, 28 December 1894.
29 NL-HaHGA, The Hague Notaries II (0373-01), inv. no. 2811.
30 NL-HaHGA, The Hague Notaries II (0373-01), inv. no. 2814.
31 'antieke kamerbetimmeringen … die hunne weerga in Holland niet zullen hebben'. Theodoor Herman Lunsingh Scheurleer, 'Vroeg XVIIe-eeuwse Dordtse betimmeringen', *Bulletin van het Koninklijk Nederlands Oudheidkundige Bond* 1952; idem, *Catalogus van meubelen en betimmeringen*, coll. cat. Amsterdam (Rijksmuseum) 1952, pp. 115-19 and figs. 28, 30.
32 Haarlem, Noord-Hollands Archief (hereafter NL-HlmNHA), Archives of the Nederlandsch Museum voor Geschiedenis en Kunst (accession no. 476), inv. nos. 961, 1097, and the Van Heemskerck van Beest family archives. The Lower House approved the financing afterwards, in February 1878.
33 NL-HlmNHA, Archives of the Nederlandsch Museum (476), inv. nos. 962, 1012; see Alan A. Lemmers, *Het marinemodellenkamerprojekt*, coll. cat. Amsterdam (Rijksmuseum) 1986, pp. 1-4 and idem, *Techniek op schaal: Modellen en het technologiebeleid van de Marine 1725-1885*, Amsterdam 1996, pp. 30-31.
34 NL-HlmNHA, Archives of the Nederlandsch Museum (476), inv. no. 961.
35 Samples of the wood from the deck were identified by C. Vermeeren (BIAX-Consult) 2022.
36 Alberto Alvarez and Tirza Mol, NG-NM-1162 - ESCAPE THM-PY-GC/MS Report, Amsterdam 2022.
37 See for similar toy models of sailing ships with reinforced keels, the collections of the National Maritime Museum in Amsterdam, the Maritime Museum Rotterdam and the Rijksmuseum.
38 Amsterdam, Rijksmuseum, inv. nos. NG-NM-4159 (French fishing lugger), NG-NM-4160 (French pilot cutter).

39 XRF analysis of the metal sections was carried out in 2019 by Jan Dorscheid (Rijksmuseum) with the handheld XRF Artax.

40 In March 2014 the model was given an anoxia treatment.

41 The first treatment of the ship model took place in 2017, carried out by Davina Kuh Jacobi. The mizzen mast was then glued back on, as was the back rail on the starboard side. The sections of the deck infested by insects were removed from the hull and consolidated.

42 Davina Kuh Jacobi, 'How Important is Knowing the Ropes? Thoughts on the Ethics and Practice of Conserving Ship Model Rigging', in the AIC's 45th Annual Meeting, *Treatment 2017: Innovation in Conservation and Collections Care*, 2017.

43 Lennarth Petersson, *Rigging Period Ship Models: A Step-by-Step Guide to the Intricacies of Square-Rig*, London 2000; J.C. Pilaar, *Handleiding tot de kennis van het tuig, de masten, zeilen, enz van het schip*, Amsterdam 1858, 3rd edition. For similar ships, see the collection of the National Maritime Museum (Amsterdam), *Zilveren Kruis* sketches, inv. nos. P1896-03 and S1005(05)080, the collection of the Rijksmuseum, inv. no. NG-MC-1134 (*Watergeus*).

44 Lascaux 498 Hv was used for gluing the threads together. For the wooden joints, collagen glue (Sheppy Glue, John Myland, London). Epoxy resin (Araldite) was used where more glue was required to fill the gaps. In those cases, a buffer layer of ollagen glue was initially applied in order to ensure the reversibility of the bond. All the wooden sections were coloured with acrylic paint (Golden Acrylics), with the exception of the keel beam and the bottom of the hull, which were painted with Liquitex Heavy Acrylics.

45 Complete models of screw steamships can be found in the collections of the Rijksmuseum, the Maritime Museum Rotterdam, the National Maritime Museum (Amsterdam) and the Dutch Navy Museum as well as in other collections. There are also various contemporary half models of such ships in these museums.

46 A barque is a sailing ship with at least three, but sometimes as many as five masts, all of them, apart from the aft mast, are square rigged. The standing rigging consists of all masts from three top yards and a shroud. The mainmast is placed relatively far aft.

47 Screw steamships which were built for the Dutch navy, were fitted with a lifting screw device. It was thought that the external screw would cause a great deal of resistance while sailing and create vibrations in the stern of the ship. The fact that the model did not have such a device does not mean to say that a screw steamship possibly used as example for this model did not have a device like this.

48 Jan Klootwijk and Dick Vries, *IJzeren schroefstoomschip 4e klasse Zr. Ms. Bonaire: Monument van de moderne scheepsbouw in Nederland*, Emmen 2020, pp. 14-27.

49 Gerard J.A. Raven (ed.), *De kroon op het anker: 175 jaar Koninklijke Marine,* Amsterdam 1988, pp. 39-40.

50 *Statistisch Jaarboek voor het Koninkrijk der Nederlanden*, Department of Internal Affairs, The Hague 1867, pp. 620-23.

51 Anthonie van Dijk, *Voor Pampus: De ontwikkeling van de scheepsbouw bij de Koninklijke Marine omstreeks 1860*, Amsterdam 1987 (*Bijdragen tot de Nederlandse Marinegeschiedenis*, vol. 4), p. 26-27 and J.J.A. Wijn, 'Instrument van passieve politiek 1813-1874', in Raven (ed.) 1988 (note 49), pp. 25-47, esp. pp. 39-40.

52 J.N.F.M. à Campo, together with G. Teitler, A.M.C. van Dissel, *Zeeroof en zeeroofbestrijding in de Indische archipel in de negentiende eeuw*, Amsterdam 2015 (*Bijdragen tot de Nederlandse Marinegeschiedenis,* vol. 15).

53 See note 10.

54 Hoving 2013 (note 2), pp. 216-19.

55 Jeroen P. ter Brugge, 'The Models of Mesdag: Study Material or Surroundings?', in Henk van der Biezen, Bob Hendriks and Ab J. Hoving, *The Scale Model as a Reconstruction*, Emmen 2011 (*Marine History*, vol. 11), pp. 2-7, and *Catalogus eener belangrijke verzameling schilderijen, teekeningen, geschilderde schetsen en studien; voorts modellen van schepen en vaartuigen, antieke en moderne meubelen; benevens eenige boek- en plaatwerken; toebehoorende aan ... Louis Meijer, ... waarvan de verkooping zal plaats hebben op Maandag den 24 April 1865, ... door en ten huize van de boekhandelaars C. van Doorn en Zoon, te 's-Gravenhage*, 1865.