



A Bespoke Elephant

• AB HOVING AND JEROEN VAN DER VLIET •

In the Rijksmuseum's collection there is a ship model called the *Witte Oliphant* (White Elephant) made in 1755 (fig. 1); it is a polychromed and rigged plank-on-frame model of a sailing ship.¹ The height – from keel to mast top – is 205 cm, the model is 220 cm long overall and 77.5 cm wide. It has twenty-two gun ports, missing their guns, divided between two decks. On the quarterdeck there is a striking octagonal glass dome that admits light to the cabins immediately below it (fig. 2). The figurehead is a crowned golden lion. The flat stern is decorated with two lions passant holding a crowned cartouche with the inscription 'LAL'. The two lions are flanked by two black men as corner posts. Under the windowed transom, the name *Witte Oliphant* and the year 1755 are picked out in gold letters (fig. 3). The model also has two anchors, a windlass, deck hatchways and hatches and a ship's bell (fig. 4). The ship's wheel is actually attached to the mizzen mast. From the davits on the stern hangs a single-masted longboat with six oars. The model is of a three-master without sails and is rigged with royal topgallants or extended masts – a remarkably high rigging for a merchant ship. It once flew the Dutch tricolour, but the flags and pennants are in such bad condition that they are now kept separately.

Fig. 1
Model of the
Merchantman
Witte Oliphant, 1755.
Various materials,
l. 220 cm.
Amsterdam,
Rijksmuseum,
inv. no. NG-MC-1210.

Fig. 2
View of the large glass
dome and the steering
wheel attached to the
mizzen mast (fig. 1).

We have no historical information about the provenance of the model ship, the maker or the client, nor do we know whether it represents a real ship or is imaginary. There is likewise no explanation as to whom or what the monogram 'LAL' refers.

The model of the *Witte Oliphant* found its way into the Rijksmuseum's collection because it was among some 1,600 objects from the *Marinemodelenkamer* ('Navy Model Room'), the Dutch Department of the Navy's large collection of scale models and nautical objects,





Fig. 3
Detail of the stern
decoration (fig. 1).

which was transferred to the Rijksmuseum in 1889.² Contrary to what the name suggests, there are also objects and models in this collection that are not directly related to the Royal Netherlands Navy. The model is not listed in the catalogue of the navy's collection that J.M. Obreen compiled in 1858, which may indicate that the model of the *Witte Oliphant* did not arrive in the *Marinemodellenkamer* until later.³

Since the 1980s it has been suggested on several occasions by the then curator of history Bas Kist that the model of the *Witte Oliphant* actually represents a slave ship. This would make it a highly unusual object. We know of only two other ship models in the Netherlands that are linked to the slave trade: *D' Keulse Galy* of 1747 and *D' Elisabet Galy* of 1762.⁴

The Dutch in the Slave Trade

For a long time there was little reference to the Dutch transatlantic slave trade in history books; shame and

outrage still make this dark chapter in history a very emotionally-charged subject.⁵ Even in the seventeenth century, people were raising moral objections to the trade in human beings, but they finally had to yield to the economic interests of the young Dutch Republic.⁶

At a rough estimate almost 12.5 million Africans were carried off in captivity between 1500 and 1870, usually to be put to work on plantations in the New World. From the seventeenth century to the beginning of the nineteenth, Dutch merchants exported slaves to Brazil, Spanish America and the Caribbean. The Dutch share in this trade is estimated, from information in various historical sources, at around 585,000 slaves, or nearly five per cent of the total.⁷

Specific research into the Dutch slave trade began relatively late – the first studies date from the 1950s – but in the last ten years an almost constant stream of publications and recently

Fig. 4
Broadside view of the
model (fig. 1).



even a comprehensive documentary series on television have brought the Dutch involvement in slavery and the slave trade to the attention of a wider audience.⁸

Initially, historical research focused on quantifying the slave trade – how many people were involved in it; later on, all kinds of aspects of the slave trade were examined in detailed studies.

At first the Dutch slave trade was the exclusive preserve of the *Geoctrooieerde West-Indische Compagnie*, the Dutch West India Company (WIC), which from 1621 onwards had the monopoly on trade west of the Cape of Good Hope. The WIC's structure was based on the Dutch East India Company, but it encountered great problems maintaining its monopoly. The area over which the WIC had exclusive rights was simply far too large and too close to home to keep out the competition. Whereas a voyage to the Dutch East Indies took six months and provisioning en route was unavoidable, several destinations in the Atlantic could be reached inside a month or two. The cost of outfitting a ship was also much lower, so the lucrative trade in goods – or slaves – attracted many unwelcome visitors on African shores.

The WIC came down hard on these illegal traders or *lorrendraaijers*, who deliberately flouted its monopoly.⁹ The Company also had to battle with opposition in the Republic itself, primarily from Zeeland merchants who thought the WIC's monopoly stood in the way of private enterprise.¹⁰ In 1674, when the WIC collapsed under the massive burden of debt it had run up in the many wars of conquest from the start of its existence, this group of critics was the first to take advantage. They would not agree to a new start or an extension of the patent if it did not provide more scope for private enterprise. Over the next fifty years, the WIC's monopoly was gradually

diluted, and by 1738 the Company was solely engaged in running the slave forts on the African coast and acting as middleman in the supply of slaves.

In the mid-eighteenth century, when the model of the *Witte Olifant* was made, most slaves were being transported across the Atlantic by private companies, like the *Middelburgse Commercie Compagnie* and the smaller firms of *Coopstad & Rochussen* of Rotterdam and *Radermacher & Steenhardt* of Middelburg.¹¹ The private slave trade was almost entirely in the hands of Zeeland-based companies and a handful of enterprises in Holland. The Frisians had no part in it.

The Slave Ship

History teaches us about many aspects of slavery and the slave trade but, remarkably enough, little if anything has been written about the construction and use of slave ships – surely one of the slave trade's most important resources. The usual explanation is that there are few available sources that provide any idea of what went on. There are no blueprints and we know of only a few drawings or paintings of slave ships. This led to the general belief that slave ships were generally 'ordinary' merchantmen that were specially adapted to ship slaves on their voyage to Africa.¹² These adaptations primarily involved installing a temporary extra tween deck to accommodate the slaves, adding a few more heads and building an extra galley for the preparation of the food that they required.

In his recent dissertation, the historian Leo Balai looked at the ill-fated voyage of the WIC slaver *Leusden*.¹³ The ship was built for the Company in 1719 by Jan Gerbrandse Slegt at his private wharf *De Eendracht* on the island of *Kattenburg* in Amsterdam.¹⁴ It was designed for the 'triangular trade', whereby commodities from the Dutch Republic were shipped to the west coast of Africa, where slaves destined for America were taken on

board, and then sugar, coffee and tobacco were shipped back from America to the Netherlands.

The *Leusden* was on her tenth voyage when she foundered off the mouth of the River Marowijne in Suriname on New Year's Day 1738 as a result of a poorly executed manoeuvre when sailing back out of the river she had mistakenly entered. The crew abandoned the sinking ship, but only sixteen of the 680 or so slaves on board survived because the hatches had been nailed down. This is undoubtedly the greatest disaster in the history of the Dutch slave trade, although it has remained almost unknown.

Balai's research into the *Leusden* offers new points of departure for further research into the construction of specific slave ships. It appears, for example, that shippers like the WIC certainly did have ideas about what a typical slave ship had to have. In 1681 the *Heren Tien* (the Lords Ten) – the directors of the WIC – decided to draw up a charter in which they set down their specifications. Unfortunately the precise content of this document has not survived, but other correspondence does shed some light on it. Six years later, the Zeeland chamber of the WIC complained that they could find no ships to hire that met these specifications, whereupon the *Heren Tien* decided to allow the chambers themselves to commission the building of ships, 'with such deep decks as were required for the slave trade in accordance with the resolution of the *Heren Tien*'.¹⁵

We may ask whether a slave ship was a specific type of vessel, and it appears it was not. Different 'classes' of ships are identified according to their function (merchant vessels, warships, fishing boats, pleasure yachts, etc.), then 'types' are specified within each main heading. The merchant vessels class includes flutes, pinnaces, frigates, hookers and galliots. A ship like the *Leusden* could have been termed a merchant frigate.

The cargoes that ships carried or the regions they sailed to created a subdivision within the types: for example, timber carriers, *noordsvaerders* (to Norway and Northern Russian ports) or *straetsvaerders* (to the Mediterranean via the Straits of Gibraltar). The WIC made its own distinction between *negotieschepen* (merchant ships), *cruijsschepen* (warships) and *slaeffschepen* (slave ships). This fosters the impression that there must have been differences in the way these vessels were constructed. But what were these differences? How can we tell that the *Leusden* was a *slaeffschip* and not a *negotieschip*?

Some insight into shipbuilding in the Dutch Republic can provide an answer. To start with, a ship built to tender was always custom-made.¹⁶ No ship was ordered from the wharf without the client's first having made clear to the shipwright the cargo it would be carrying and the waters it would be sailing. The shipwright would then make a few simple changes to the standard design of the vessel, adapting it to the client's requirements. If the client wanted to transport heavy cargoes on the stormy Atlantic routes, the result was a different kind of ship from one that would be operating primarily in the Mediterranean and had to be fast enough to outrun Barbary privateers. Fast ships were narrower; extra stable vessels were broader in the beam; heavy grain transporters had shallower draughts. It is interesting to note that all these adaptations were based solely on feeling and experience, since calculations that produced a vessel with the handling properties required were not part of the traditional master shipwright's toolkit.

The Appearance of the Witte Oliphant

Bas Kist, who never published his suspicion that the *Witte Oliphant* was a slave ship, initially got the idea from

the carvings of two black men dressed in grass skirts on the ship's stern. These figures, who were called *moriaentjes* – 'Moors' or 'blackamoors' – until the early twentieth century, are an obvious reference to the trade with Africa. They were remarkably often found on tobacconists' shop signs, wrapping papers and advertisements, where, sometimes smoking pipes, they extolled the virtues of the smoking requisites sold there. Just as frequently, tobacco sellers referred in their shops to the ships that had brought their wares to the Dutch Republic.¹⁷

The ship's name, *Witte Oliphant*, also suggests an association with the African trade. Its name aside, there are however no other references to elephants in the decoration of the ship. Historical research to date has not turned up any merchantman, let alone slaver, with the name *Witte Oliphant*. The only ships that did bear this name were warships. In those cases the name referred to the *Elefantordenen* or Order of the Elephant granted by the Danish royal house. In the seventeenth century a grateful king awarded this highest order of Danish knighthood to several Dutch admirals, including Jacob van Wassenaer Obdam and Cornelis Tromp. In Willem van de Velde the Elder's painting of the Battle of Livorno on 14 March 1653 there is a Dutch warship with a white elephant decorating its stern (fig. 5).

Although both the name and the decoration of the *Witte Oliphant* point to the trade with Africa, this does not have to mean slave trading. The blackamoors featured on the ship are not necessarily slaves. In fact they were primarily associated with the tobacco trade in the Republic, even though the true Moors had nothing to do with the trade in tobacco and by the eighteenth century most tobacco came from America. Then again, African slaves were employed on the plantations that produced this American tobacco. Both elements feature prominently

on the shop sign that hung over the door of the Amsterdam tobacco merchants Johannes Lubelink & Zoon, in the second half of the eighteenth century. Its premises, known as 'The White Elephant', on Buitenkant between Bantammerstraat and the Kraansluis, sported a sign with a blackamoor seated on a white elephant while smoking a pipe, as did their tobacco wrappers (fig. 6).¹⁸

The model of the *Witte Oliphant* is made even more remarkable by its exceptionally tall masts. As a rule a mast was extended with two smaller

Fig. 5
WILLEM VAN DE
VELDE THE ELDER,
The Battle of Livorno,
detail, c. 1653-93.
Ink on canvas,
114 x 160 cm.
Amsterdam,
Rijksmuseum,
inv. no. SK-A-1364.



most sections: the topmasts. From the beginning of the eighteenth century the topmasts sometimes had an extra extension, the royal topgallant, which could also carry sail. It was primarily slave ships that carried these additional sails in the hope of making better speed. The steady trade winds that blew these ships to America allowed the use of much taller rigging, which was seldom seen on other merchantmen. It was not until the nineteenth century that royal topgallants began to appear on warships, and even then it depended on the areas in which they operated. Rough seas with fickle winds were not the best conditions for a ship carrying too much sail; it made a ship less stable and even top-heavy. In those cases the royal topgallants were struck and the topmasts might be removed temporarily.

Are there any other elements that can be used to test the hypothesis that the *Witte Oliphant* actually is a model of a slave ship? The only way to confirm it is by measuring the model. This involves looking at the ratio of the length, beam and depth – the distance between the top of the keel and the underside of the lower deck – of a ship and comparing it to other similar ships. Strikingly, the hull of the *Witte Oliphant* is quite broad. Do we also see this in other ships, for example in the *Leusden*, which we know for certain was a slave ship?

The Dimensions of the *Witte Oliphant*

The *Witte Oliphant* is 140.5 cm long, 42.4 cm wide and has a depth of 16.8 cm. How we measured it is explained in the appendix. If we know what the scale of the model is, we can calculate the dimensions of the original ship in feet and metres. (We obviously do not have to revert to measurements in feet, but because the builders of both the model and the original vessel used them and almost all marine architecture formulas worked with them, it is often enlightening to have



them.) We seldom know the scale of a model so we have to improvise. A scale of 1:22 is quite common in larger ship models because of the use of the Amsterdam 11-inch foot: 1 inch (2.6 cm) in the model is equal to 2 feet (22 inches = 57.2 cm) in the actual ship. Using this scale, the ship would be 30.91 metres or 109 Amsterdam feet long. If we had used a scale of 1:24, for example because the Rhineland 12-inch foot (31.2 cm) was used for the model, the length of the ship would have been 33.72 metres or 119 Amsterdam feet. However, there are reasons to believe that the ship was 109 Amsterdam feet long. One characteristic that tells us something about the size of a ship is the number of shrouds holding the mainmast from the side. They are the vertical elements of the standing rigging that resemble rope ladders. A rule of shipbuilding is that six shrouds are used for a ship a hundred feet long; one shroud is added for each extra fifteen or sixteen feet.¹⁹ The *Witte Oliphant* has six shrouds, so a length of 109 feet is more likely than 119 as in that case there would have to have been seven of them.

Fig. 6
Vignette or tobacco wrapper from the firm of Johannes Lubelink & Zoon, tobacco merchants of Amsterdam, mid-eighteenth century. Paper, 10.5 x 7.6 cm. Amsterdam, Pijpenkabinet, inv. no. 25.001.

Using a scale of 1:22 the actual dimensions of the *Witte Oliphant* would be 30.91 x 9.33 x 3.70 metres or 109 x 33 x 13 feet.²⁰ A general ship-building rule, as can be found for example in *Aloude en Hedendaegse Scheepsbouw en Bestier* (1671) by the Amsterdam burgomaster, writer and collector Nicolaes Witsen, prescribes that the beam of a ship must be a quarter of the length.²¹ We seldom encounter this ratio so precisely in practice. Most shipwrights varied the size a little in order to give the ship the specific properties that were required or make them more prominent. Witsen wrote: ‘the length of the ship divided in four, so make the beam a fourth part. For example, 100 foot long comes to a beam of 25 foot at the main frame. If a ship is under 100 feet long, the beam must be less than its fourth part according to the feelings of some masters. Yet others make the ship 3 or 4 feet wider than the fourth part so as not to be too slender. And a merchantman may also be 2, 3, 4 or 5 feet narrower for its length. So that they lie with ease at their anchors and they can be steered easily, with a small crew, ships are often made narrower than would otherwise be done.’²² Fifty years later, ships were still being built to these practical rules, which were adapted as necessary.

Assuming a length overall of 109 feet, the beam (109 divided by 4) of the *Witte Oliphant* ought to measure 27¼ feet. The measured width of the model, however, the equivalent of 33 feet, is at least 5¼ feet more, whereas Witsen maintained that a ‘merchantman’ ought to be a few feet narrower to save on crew. The difference in width between the *Witte Oliphant* and a normal armed merchantman or *negotieschip* is around two metres.

The same applies to the depth. Ship-building rules specify a tenth of the ship’s length for a standard depth – 11 feet in this case.²³ The *Witte Oliphant* is 13 feet deep – more than half a metre more.

If we look at the *Leusden*, we see the following dimensions: 120 x 32 x 13 feet.²⁴ In the design by shipwright Slegt, these same measurements were used for a series of nine other slave ships which were subsequently built for the WIC.²⁵ The concept must have been satisfactory. If we compare these measurements with those of the *Witte Oliphant* we see an identical pattern: although the measurements of the model ship are slightly more extreme than those of the *Leusden* – perhaps caused by rounding off during its construction – the extent to which the shipwright departed from the usual standard is evident. The *Witte Oliphant*, like the *Leusden*, is intentionally too wide and too deep for an ordinary merchantman. The extra width not only produced a more stable ship, it also provided larger deck space – two properties that must have been extremely useful for a vessel built to carry slaves. A rough calculation shows that two metres extra in width creates space for fifty or sixty more people. The extra depth also meant that an orlop deck could be placed in a relatively small ship. This temporary deck was made in the hold, or part of it, by fitting short planks in the grooves of the existing deck beams. The extra space thus obtained could be used in all kinds of ways, in this case for accommodating more slaves. The rest of the hold below the orlop deck was vital for storing all the drinking water and food needed to keep the valuable cargo alive.

All this additional space came at a price, though – it made the vessel much slower. Clearly this was particularly disadvantageous when it came to transporting people – one of the greatest dangers during the voyage was the outbreak of sickness on board – so the ship was fitted with taller masts to catch even more wind. This compensated for the slowness caused by the proportions of the vessel. It is now also clear why this innovation was found primarily in slave ships.

It was born out of necessity to keep the journey, which took two or three months on average, as short as possible. The constant southeast trade winds on the voyage from the west coast of Africa to the Caribbean made the use of this tall rigging practicable.²⁶

In Conclusion

We can make a reasonable case that the *Witte Oliphant* is a model of a slave ship on the basis of three characteristics: the carving on the stern which shows Africans or 'blackamoors', the very tall rigging with royal topgallants and, above all, the length, breadth and depth proportions, which are highly unusual for a merchantman. These proportions are strikingly similar to the measurements of one of the few well documented slave ships, the *Leusden*.

We are left with the question as to who the *Witte Oliphant*, as a model or a real ship, could have been built for. In 1755, when it was built, the trade in African slaves was entirely in the hands of private enterprises. They were mainly merchants from Zeeland, followed at

some distance by Hollanders. The presence of a golden lion as a figure-head seems to point to a ship built in Holland – ships from Zeeland usually had a figurehead that represented the name of the ship – and the measurements are very probably in Amsterdam feet.

Finally, the monogram 'LAL' remains a mystery. We do not know of any mercantile house in Zeeland or Holland with the letters LA in its name, nor the name of a port in either province that begins with an L. Might it be a family name? In that case the Amsterdam tobacco firm of Johannes Lubelink & Zoon becomes a likely candidate, and the monogram should be interpreted as 'Lubelink Amsterdam Lubelink'. After all, its tobacco shop, conveniently situated in the city's port district, was called The White Elephant. Might they have had this model ship in the shop to tempt customers to come in and buy or to advertise the exotic nature of their merchandise? We will probably never know the answer to this question.

APPENDIX

Measuring a Ship Model

Anyone wanting to compare the measurements of an original model ship with those of real ships referred to in the archives has to take the measurements in the same way as was customary during the construction of the real ship. This makes it important to know a few things about the measuring methods used in shipbuilding. In this way we can find out which measuring points were used and how we can find them. As tools we need no more than a plumb line, a calliper rule and a flexible steel rule, a pencil and a piece of paper for taking notes.

Measuring historic ships is a complex business because there are various ways of doing it. The length of the lowest gun deck is usually taken when the ship is finished. Sometimes they are measured at the waterline and very occasionally the 'length overall' is taken, in other words from the front of the beakhead to the overhanging stern. But the shipwright could not employ these methods, because the gun deck was not present at the start of the construction, there is no waterline on an

unfinished ship, and figurehead and stern were not yet in place. He therefore used his own method, which logically stemmed from the way a ship was built (fig. 7).

Nowadays the size of a ship found in documentary sources is always indicated in short as 112 x 26 x 11.5 (x 6½) feet, for example.²⁷ The first measurement is the length of the vessel between the stem and stern, the second is the width of the beam at the widest part of the hull and the third is the depth.²⁸ The last measurement, the figure in brackets, indicates the height between the lower and upper decks, measured at the side wall. This is not always given and is therefore shown here in brackets.

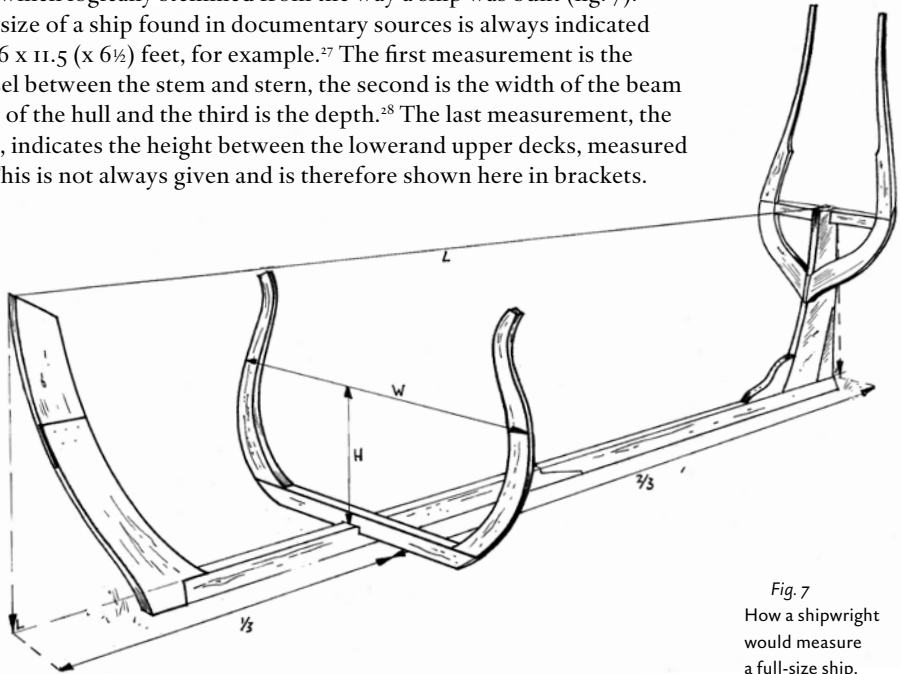


Fig. 7
How a shipwright
would measure
a full-size ship.
Drawing by
Auke Gerrits.

The difficulty when measuring a model is that the measuring points usually cannot be seen. They were likewise not visible in the actual ships. The first measurement of the length of the ship being built was taken at the outset when the shipwright had erected the stem and stern on the keel. The only way he could determine the length overall was by dropping plumb lines from the top of the bow and the stern and measuring the distance between them along the ground. A less precise method was to stretch a rope between the two ends and measure that. However, the inevitable elasticity of the rope gave rise to measurement errors. In both methods the measuring points coincide with the outside edges of the bow and stern.

In the case of a model ship, therefore, we have to start by establishing precisely where our measuring points are. Where exactly do we find the front of the bow? This is not as simple as it appears: the bow often has a cutwater (the forward part of the bow) on which rests a beakhead, and on or beside the stem lies the bowsprit, which protrudes forwards. The view is also obstructed by ropes, the railings of the beakhead and possibly the anchor, the foresail and the cathead (a large wooden beam located on the bow to support the ship's anchor when raising it). These must all be ignored, and that makes measuring difficult. The railings of the beakhead in particular can sometimes get in the way of our plumb line. When we have located the top of the curved stem, this is projected on to the ground with a plumb line, where a mark is placed (fig. 8).

In the case of the sternpost the backward-hanging stern counter with the windows and galleries often determined the shape, but here again we ignore these parts. The simplest thing to do is to look for the place where the helm (or the tiller of the rudder) enters the ship. This is always on the top of the sternpost, which is consequently simple to locate. A plumb line can easily be dropped from this spot as there is seldom anything in the way, as was the case with the stem. The distance between the two plumb lines is noted in millimetres.

Finding the width of a model is more complicated because it has to be measured under the planking ('over the frame'). It is important to determine the widest point of the hull first. This can be done by eye (as a rule this is situated at a point around a third of the length of the ship) or if in doubt by taking a few trial measurements, dropping the plumb line from the wale.²⁹ A wale is an extra thick layer of planking in the top section of a ship's hull which acts as protection against damage and shows the flowing lines of the ship's hull. When the greatest width has been found and measured, twice the thickness of the wale from which we measured has to be subtracted from the value found. This is because the shipwright measured across the bare frame, without the planking, because it was not yet present. Fortunately it is not necessary to saw pieces out of the model to establish the thickness of the wale: it is usually twice that of the planking.³⁰ The thickness of the planking is easily measured in the rabbet of a gun port. If there are no gun ports the extent to which the wale protrudes from the planking is measured and doubled. Four times the planking thickness or twice the thickness of the wale is therefore subtracted from the measured width.

The depth of a ship model is the most complicated thing to measure. You measure it at the same spot where the width was measured, around a third of the ship's length from the front. It is the distance from the top of the keel to the top of the lowest deck beam, measured in the side of the ship.³¹ However, nowhere in the model can we see how high the top of the keel is as it is partially housed in the hull; likewise the location of a deck cannot always be determined from the outside.

A model often rests on a stand, so we begin by measuring the distance between the ground and the bottom of the keel a third of the way along the ship. We can also measure how far the keel extends from the hull. In shipbuilding it was usual for half of the keel to jut out under the ship and the other half to be concealed in the hull.³² If we add together twice the measured height of the protruding keel and the height from the ground to the keel we have found where the top of the keel is situated.

The second point we want to find is the place in the frame the shipwright had just erected where he stretched the rope that indicated the height of the deck beams in the side of the ship. Once again a gun port provides the solution. A rule in shipbuilding is that the height of a gun port is a third of the between-decks height.³³ There is the same distance above and below it. Hence we only need to measure the inside of a port, that is the actual opening in the ship's side, not the port lid (the wooden shutter for sealing the gun port), which is always somewhat larger and fits into the rabbet and subtract the same distance below the porthole. This gives us a point from which we can measure the height from the ground. If the model has no gun ports, the scuppers often give an indication of the exact position of the deck. If we subtract the distance from the ground to the top of the keel we previously found from this height, we have established the depth of the model.

Fig. 8
Taking measurements
at the bow of the
Witte Oliphant.



NOTES

- 1 The term plank-on-frame model refers to the way the hull was built. There are essentially two ways of doing it: the hull is formed from a block of wood (block model) or, like a real ship, constructed on a frame of ribs: a plank-on-frame model is consequently hollow, whereas a block model is not.
- 2 H. Stevens and C. de Jonge, *The Art of Technology. The Navy Model Collection in the Amsterdam Rijksmuseum*, Wormer 1995; A. Lemmers, *Techniek op schaal. Modellen en het technologiebeleid van de Marine 1725-1885*, Amsterdam 1996.
- 3 J.M. Obreen, *Catalogus der verzameling van modellen, van het Departement van Marine*, The Hague 1858.
- 4 Little is known about either of them. It is thought that the model of *D' Keulse Galy* (Amsterdam, Scheepvaartmuseum, inv. no. s.1198) represents a merchantman of the same name that sailed for the Middelburgse Commercie Compagnie from 1710 to 1730. However, the model bears a date seventeen years after the original ship was lost to Spanish privateers. The model of *D' Elisabeth Galy* (Vlissingen, Zeeuws maritiem museum, inv. no. 15101) bears the arms of Amsterdam on the stern. This model was once in the collection of J. Enschedé in Haarlem. It is in view of the name 'Galy' (galley) alone – quite a common name for Dutch slave ships – that it is assumed that this, too, could be a model of a slave ship.
- 5 P.C. Emmer, *De Nederlandse slavenhandel, 1500-1850*, Amsterdam/Antwerp 2000, pp. 11-14, 229-40.
- 6 J.M. Postma, *The Dutch in the Atlantic Slave Trade, 1600-1815*, Cambridge 1990, pp. 10-11.
- 7 This figure also includes the African slaves who were transported during numerous smuggling trips. Maritime historian Ruud Paesie estimates this number at around 30,000 slaves for the period 1700-30. See R. Paesie, *Lorrendrayen op Afrika. De illegale goederen- en slavenhandel op West-Afrika tijdens het achttiende-eeuwse handelsmonopolie van de West-Indische Compagnie, 1700-1734*, Amsterdam 2008, pp. 255-58.
- 8 The article by W.S. Unger, 'Bijdragen tot de geschiedenis van de Nederlandse slavenhandel I. Beknopt overzicht van de Nederlandse slavenhandel in het algemeen', *Economisch-Historisch Jaarboek* 26 (1956), pp. 133-74, is usually considered as the starting point. The documentary *De Slavernij* was broadcast by NTR in the autumn of 2011.
- 9 For a full description of the Zeeland 'lorrendraaiers' see Paesie, op. cit. (note 7).
- 10 H.J. den Heijer, *Goud, ivoor en slaven. Scheepvaart en handel van de Tweede Westindische Compagnie op Afrika, 1674-1740*, Zutphen 1997, pp. 299-314.
- 11 C. Reinders Folmer-van Prooijen, *Van goederenhandel naar slavenhandel. De Middelburgse Commercie Compagnie 1720-1755*, Middelburg 2000; J. Parmentier, 'De rederij Radermacher en Steenhardt (1730). Zeeuwse Guinea-vaart en slavenhandel met Zuidnederlandse participatie', *Tijdschrift voor Zeegegeschiedenis* 11 (1992), no. 2, pp. 137-51. For the firm of Coopstad & Rochussen see, for example, J. Hudig Dzn, *De scheepvaart op West-Afrika en West-Indië in de achttiende eeuw*, Amsterdam 1926.
- 12 Postma, op. cit. (note 6), p. 142: 'There is no evidence that the Dutch designed ships for the slave trade.' V. Enthoven, 'Pinassen, jachten en fregatten', in R. Daalder et al. (eds.), *Slaven en schepen. Enkele reis, bestemming onbekend*, Amsterdam/Leiden 2001, p. 43: 'Ships were essential in the transport of slaves from Africa to the New World. As far as we know, the Dutch, unlike the British and the French, never built or used special ships in the Atlantic slave trade. There were no such things as separate slave ships; ordinary merchant vessels were adapted to transport black workers. This makes sense when we remember that the transport of the Africans to America was only one stage in the transatlantic slave trade.' ('Een essentieel hulpmiddel bij het vervoer van slaven van Afrika naar de Nieuwe Wereld vormen de schepen. In tegenstelling tot Engeland en Frankrijk zijn, voor zover bekend, in de Nederlandse Atlantische slavenhandel nooit speciale schepen gebouwd of gebruikt. Aparte slavenhalers hebben niet bestaan: er werden gewone koopvaardij-schepen gebruikt, die geschikt werden gemaakt voor het vervoer van zwarte arbeidskrachten. Dit is niet zo vreemd, als we bedenken dat het vervoer van de Afrikanen naar Amerika slechts een etappe vormde in de transatlantische slavenhandel.')

- 13 L. Balai, *Het slavenschip Leusden. Slaven-schepen en de West-Indische Compagnie, 1720-1738*, Zutphen 2011.
- 14 *Ibid.*, p. 125.
- 15 '...met sodanig diep verdeckts als tot den slaefsen handel volgens de resolutie der Xen gerequireert werden.' *Ibid.*, p. 125.
- 16 A standard clause in many specifications is 'to the client's satisfaction' ('naer des besteders believen'). The fact that its meaning extended beyond details about the layout of the ship or the number of cannon required is evidenced by the clause 'special use requires ships to be built in a particular way' ('het byzonder gebruik doet Schepen onderscheidelijker wijze bouwen'). N. Witsen, *Aloude en Heden-daegse Scheepsbouw en Bestier*, Amsterdam 1671, p. 168.
- 17 D.H. Duco, *Verpakkingen van kerftabak*, Amsterdam 2003, www.pijpenkabinet.nl/Artikelen/verpakkingen%20kerftabak/art-verpakkingen%20kerftabak.html.
- 18 J. van Lennep and J. ter Gouw, *De uithangteekens, in verband met geschiedenis en volksleven beschouwd*, Leiden 1888, pp. 179-80.
- 19 C. van Yk, *De Nederlandse Scheepsbouw-konst Opengesteld*, Amsterdam 1697, p. 221.
- 20 The measurements in feet in this calculation have been rounded down. As the old wood distorts under the influence of changing temperatures and humidity levels it is impossible to get precisely accurate measurements or multiples of feet and inches, particularly when a further multiplier is used. If exactly matching research results are encountered, this has to be a reason for great suspicion with regard to the object measured or the person who took the measurements. Calculated measurements are always an approximation.
- 21 '... de lengte van het schip in vieren gedeelt, zoo neemt tot de wijte een vierde deel. By exempel, 100 voet lengte, komt 25 voet tot de wijte, op de hals. Als een schip onder de 100 voet lang is, moet de wijte minder zijn als zijn vierde part: na het gevoelen van eenige meesters. Doch andere weder maeken het schip 3 of 4 voet wijder, als het vierde part; om niet te rank te zijn. En een koopvaerder magh mede wel 2, 3, 4 of 5 voet nauwer zijn nadien hy lengte heeft. Om met gemak te reien voor zijn touw: en licht bestiert te kunnen werden, met weinig volk, maektmen de schepen vaak smalder, als wel anderszins zoude geschieden.'
- Witsen, op. cit. (note 16), p. 65; Van Yk, op. cit. (note 19), p. 54; Anonymous, *Nieuwe Hollandse Scheepsbouw*, Amsterdam 1695, pp. 33-34, 38.
- 22 Witsen, op. cit. (note 16), p. 65.
- 23 *Ibid.*; Van Yk, op. cit. (note 19), p. 53; Anonymous, op. cit. (note 21), p. 34.
- 24 Balai, op. cit. (note 13), p. 127.
- 25 On 30 August 1720 the *Heren Tien* of the wic decided to build 'nine more frigates as slave ships to the design of the Leusden' ('nog neegen fregatten tot slaeffscheepen na charter van het schip Leusden') (*ibid.*). This proves that the Company actually did talk about slave ships which had to be built with that specific intention – the transportation of slaves.
- 26 Balai, op. cit. (note 13), p. 77.
- 27 In the specifications in Witsen, op. cit. (note 16), pp. 105-13, and in Van Yk, op. cit. (note 19), pp. 126-66, the main measurements are always written out in full. For example, '112 feet long, 26 feet wide inside the skin, depth at the scuppers 11 and ½ feet. An upper deck above it; height on board 6 and ½ feet.' ('Lang 112 voeten, wijt binnen zijn huit 26 voet, hol op zijn uitwaeteren 11 en ½ voet. Een bovenet daer boven hoogh aen boort 6 en ½ voet'), Witsen, p. 105.
- 28 Van Yk, op. cit. (note 19), p. 53.
- 29 Witsen, op. cit. (note 16), p. 67; Van Yk, op. cit. (note 19), p. 53.
- 30 Witsen, op. cit. (note 16), p. 68: 'The thickness of the wale is ½ of the inside of the stem, the thickness of the planking ¼ of the stem' ('de dikte van het berghout is ½ van de binnenkant van de voorstevan, de dikte van de huidplanken ¼ van de steven').
- 31 Van Yk, op. cit. (note 19), p. 53.
- 32 Witsen, op. cit. (note 16), p. 149.
- 33 Witsen, op. cit. (note 16), p. 71; Anonymous, op. cit. (note 21), p. 38.