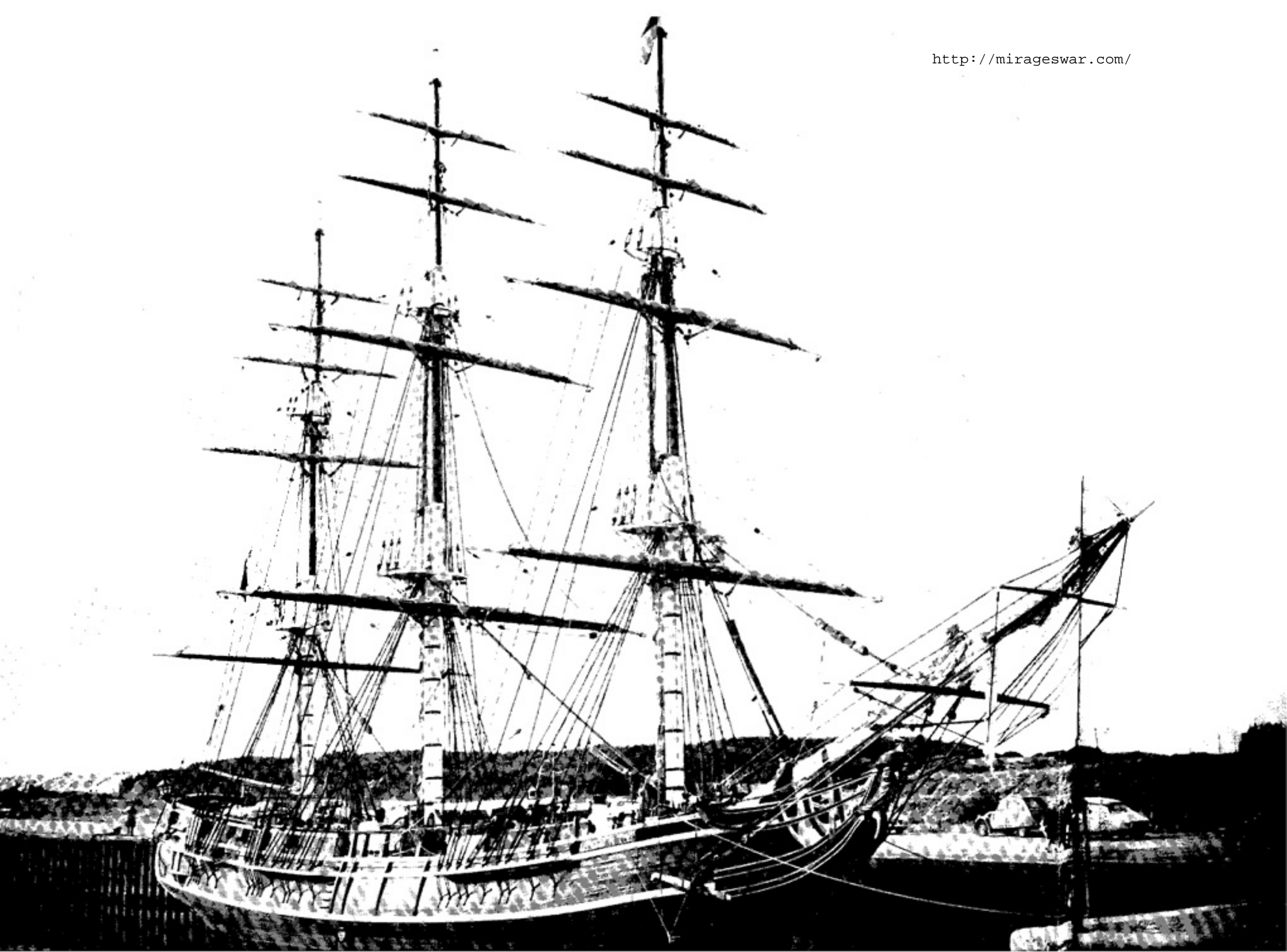


The Armed Transport BOUNTY

John McKay





Introduction

SHIP'S HISTORY

In 1775, The Standing Committee of West India Planters and Merchants decided that it would be to their advantage to introduce bread-fruit trees and mangosteen into the West India colonies as an inexpensive source of food for their plantation slaves. A prize was offered to anyone who successfully transported bread-fruit trees from the East Indies to the West Indies and, in 1777, a fund was set up to encourage interest in this project. Despite these initiatives ten years lapsed before any further action was taken. In May, 1787, however, the Admiralty was approached by one of the Principal Secretaries of State, Lord Sydney, who, in a letter, outlined His Majesty's interest in this mission. Obviously private enterprise was not interested, so the Government and the Royal Navy became involved.

At this time it was common practice for the Navy to buy or lease ships for a specific purpose, so on 9 May 1787 the Admiralty ordered the immediate purchase by the Navy Board of a suitable vessel, not exceeding 250 tons burthen. Five ships, plus one latecomer, *Harriot*, were considered by the Board:

- Lynx*, 300 tons, Mr Campbell, lying at Greenland Dock, £2200;
- Shepherdess*, 270 tons, Messrs Wellbank, Sharp and Brown, lying at Pickle Herring Chain, £2050;
- Bethia*, 230 tons, Messrs Wellbank, Sharp and Brown, lying at Old Wapping Stairs, £2600;
- William Pitt*, 240 tons, Mr Dawson, lying at King Edward Stairs, £1200;
- New ship, 240 or 250 tons, Mr Elches, at Newcastle, £9 10s 0d per ton.

The Navy Board reported to the Admiralty that they intended to purchase *Bethia*, and the Admiralty appointed Sir Joseph Banks, an eminent botanist who had sailed with Captain Cook, to examine her and to supervise her fitting out. The Board also ordered the officers of Deptford Yard to survey *Bethia*, and on 23 May Deptford submitted dimensions and value estimate to the Board:

Length of the Keel for Tonnage	69ft 11 ³ / ₄ in
Breadth Extream	24ft 4in
Depth in Hold	11ft 4in
Burthen in Tons	220 ²⁶ / ₉₄
Length of the lower deck	85ft 1 ¹ / ₂ in
Beams 12 in No. Square	1ft 0in

Height between decks	Afore	6ft 3in
	Midsh	5ft 7in
	Abaft	7ft 0in
Upper deck		91ft 0in
Do. flush fore and aft depth of waste [waist]		0ft 4½in
Main Hatch Fore and Aft		9ft 1in
Main Hatch Thwartship		6ft 1in
Great Cabbin		11ft 0in
Steerage		12ft 0in
	£	s d
Value of the Hull, Masts and Yards	1718	0 0
Anchors	64	15 0
Add 2½ per cent. Discount on £1782 15s 0d	37	17 0
Total	1820	12 8

Bethia was bought on 26 May and her cost estimate must have been adjusted upward, as her final purchase price, according to Admiralty records, was £1950. It is interesting to compare this figure with the asking price of £2600.

Apart from the above, little is known about *Bethia*, as ships of her size and character were very common at the time (Britain had the largest national fleet of merchant ships) and details were therefore not recorded. We do know however that she was built in the No 2 dry dock on the River Hull, that her keel was probably laid in 1783, and that as she was a relatively flat-bottomed merchantman, 'roomy in accommodation and stowage'. This flat-bottomed hull shape was an important feature when considering *Bounty*'s mission; not only was hold capacity critical (*Bounty* was provisioned for 18 months), but also a flat-bottomed ship ran less risk of falling over if by chance she grounded on one of the many reefs in the South Seas. Indeed, *Bounty* did run aground at Tahiti, as Bligh notes; 'but to our great surprise, we found that the ship was aground forwards. She had run on so easy, that we had not perceived it at the time'. Bligh also notes that she was 'an excellent sea boat'.

On 26 May 1787 *Bethia* was moved from Wapping Old Stairs to Deptford Yard to begin fitting out for her intended voyage to the South Seas; Sir Joseph Banks arrived on 8 June. Also on 8 June, the Admiralty instructed the Navy Board to have *Bethia* registered on the Royal Navy Ships List as HM Armed Vessel *Bounty*, and here is an interesting point: although *Bounty* was fully rigged as a ship she was not large enough to require a Post Captain in command; as her Scheme of Complement called for a Lieutenant to command

(although he was termed Captain in his role as ship's commander) *Bounty* was classified as an 'Armed Vessel'.

Bligh was appointed to *Bounty* on 16 August, and on that date he became involved in supervising her fitting out. On 3 September the ship was taken out of dock and brought alongside the hulk, where her masts were taken out and shortened, although Bligh notes that 'the carpenters and joiners remained on board, as they had a great deal of work to finish'. By 9 October *Bounty* was at Long Reach, where provisioning was completed, and on the 15th Bligh received orders to proceed to Spithead. Owing to bad weather, the ship did not arrive there until 4 November. Lord Hood, commander at Spithead, gave Bligh his final orders on 24 November but, again due to the weather, *Bounty* was not able to sail until 23 December, which she did 'with a fair wind'.

Bounty arrived at Tenerife (Canary Islands) on 4 January 1788 and after six days of provisioning sailed for Cape Horn. After attempting to round the Horn for thirty days Bligh was forced to abandon this course, and on 22 April bore away for the Cape of Good Hope. *Bounty* anchored at False Bay (South Africa) on 24 May. Some provisioning and repair work was carried out at False Bay and she put to sea again on 29 June, arriving at Adventure Bay (Van Diemen's Land) on 20 August for a stay of fifteen days. On 4 September *Bounty* left Van Diemen's Land and on 25 October she was within sight of the island of Matea, arriving at Tahiti the following day. Her passage from Spithead to Tahiti had taken slightly more than ten months.

On 4 April 1789 *Bounty* departed Tahiti after a stay of over five months. From 5 April to 27 April she made stops at several small islands while sailing westward towards Endeavour Strait; on the morning of the 28 April, while the ship lay off Torfua, part of her crew mutinied under the leadership of Fletcher Christian, took command of the ship, and put Bligh and eighteen loyal followers into the 23-foot launch.

From this point *Bounty*'s history is not easily followed as we do not have Bligh's meticulous log to go by. We do know, however, that Christian first took her to the island of Tubai, where he was forced away by the natives, and then back to Tahiti. Christian tried again to approach Tubai and was driven off a second time, after which *Bounty* again returned to Tahiti. With a reduced crew of mutineers, supplemented by Tahitians, Christian finally found refuge at Pitcairn Island, where *Bounty* anchored in the bay that is named after her. Early in 1790 the ship was beached, stripped and burned to the waterline, and what remains of her still lies at the bottom of Bounty Bay.

CAREER SUMMARY

1783: Probable year that *Bethia*'s keel was laid

5 May 1787: Lord Sydney writes to the Admiralty informing them of His Majesty's desire to promote the interests of the West India Planters and Merchants

9 May 1787: Admiralty receives Lord Sydney's letter and instructs the Navy Board to purchase a suitable vessel for a South Seas mission

10 May 1787: Navy Board advertises for a ship

16 May 1787: Navy Board considers the purchase of one of five ships with one latecomer

17 May 1787: Navy Board reports to the Admiralty that they intend to buy *Bethia*

21 May 1787: Admiralty informs the Navy Board that Sir Joseph Banks is to view *Bethia*

23 May 1787: Deptford Yard submits its report on *Bethia* to the Navy Board

26 May 1787: *Bethia* purchased and moved to Deptford Yard

31 May 1787: Admiralty gives directions to the Navy Board concerning *Bethia*'s fitting out

6 June 1787: Deptford reports to the Navy Board regarding guns, masts and yards

8 June 1787: Sir Joseph Banks attends *Bethia*; the Admiralty instructs the Navy Board to have *Bounty* registered on the list of Royal Navy Ships; the Navy Board specifies changes that are to be made to *Bounty*'s masts and yards

20 June 1787: Deptford officers report to Navy Board concerning *Bounty*'s boat requirements

25 June 1787: Deptford Yard sends draughts of *Bounty* showing proposed changes to the Navy Board

6 July 1787: Navy Board returns altered draughts to Deptford Yard

14 August 1787: *Bounty* undocked

16 August 1787: Admiralty appoints Lieutenant William Bligh to command *Bounty*, and orders the Navy Board to have her manned with a crew of forty-five and victualled for twelve months (Bligh states that *Bounty* was 'stored and victualled for eighteen months')

30 August 1787: Admiralty directs the Navy Board to have *Bounty*'s masts and yards cut down in accordance with Bligh's request

3 September 1787: *Bounty* brought alongside the masting hulk

4 September 1787: masts unstepped and cut down

9 October 1787: *Bounty* moved to Long Reach

15 October 1787: ordered to Spithead

4 November 1787: arrives at Spithead

24 November 1787: Lord Hood orders *Bounty* to sail

23 December 1787: *Bounty* sails from Spithead

24 December 1787 – 3 January 1788: Passage to Tenerife

4 January – 10 January 1788: provisioning at Tenerife

11 January – 22 March 1788: passage to Cape Horn

23 March – 21 April 1788: *Bounty* tries unsuccessfully to round Cape Horn

22 April – 23 May 1788: passage to Cape of Good Hope

24 May – 28 June 1788: provisioning and repair work at False Bay

29 June – 19 August 1788: passage to Adventure Bay

20 August – 3 September 1788: provisioning at Adventure Bay

4 September – 25 October 1788: passage to Tahiti

26 October 1788: *Bounty* anchors at Matavai Bay, Tahiti

27 October 1788 – 3 April 1789: at Tahiti

4 April 1789: *Bounty* leaves Tahiti

5 April – 27 April 1789: *Bounty* sails westward towards Endeavour Strait

28 April 1789: Fletcher Christian leads a successful mutiny against Bligh and takes command of *Bounty*

May – September 1789: Christian, in command of *Bounty*, searches for refuge in the South Seas

23 January 1790: *Bounty* run aground at Pitcairn Island; she is stripped and burned

HULL CONSTRUCTION

The drawings of *Bounty*'s hull in this book are based on two sets of contemporary draughts; the first was prepared to illustrate *Bethia* for the Admiralty, and the second, based on the first, to show proposed changes. The first draught is dated 25 June 1787 and shows *Bethia* as she was purchased; the second, dated 19 November 1787, embodies the modifications required by the Admiralty, and was used by Deptford Yard. Both sets of drawings show an outboard

profile, half breadth plan and body plan on the first sheet and plans of the upper deck, lower deck and hold on the second sheet. As no major structural changes were made, the half breadth plans and body plans are identical on both sets. The drawings were prepared at a scale of 1/4 inch to the foot (1/48 scale) and as paper is prone to shrinking and expanding it is fortunate that the draughtsman provided a linear scale to both outboard profiles.

Both draughts have an outline specification giving dimensions and tonnage, and here there is a contradiction. The specification dated 25 June reads:

Length of the Range of the Deck	85ft 1 1/2in
Do. of the Keel for Tonnage	69ft 11 3/8in
Breadth Extreme	24ft 4in
Burthen in Tons	220 26/64

The Specification dated 19 November reads:

Length of the Range of the Deck	84ft 6in
Do. Keel for Tonnage	69ft 9in
Breadth extreme	24ft 10in
Depth in Hold	11ft 4in
Burthen in Tons	228 64/94

The difference between specifications is easily explained: just prior to acquiring *Bethia* the Deptford yard officers surveyed her and produced the early figures; they produced the second set after docking her and examining her more closely. It is therefore a safe assumption that the specification of 19 November is the more accurate, and indeed *Bounty's* lower deck length (fore perpendicular to aft perpendicular) scales 84ft 6in. Her tonnage was calculated by the formula:

$$\frac{\text{length of keel} \times \text{breadth} \times \frac{1}{2} \text{ breadth}}{94}$$

Bounty's draught shows a total of eleven station lines expressed as frame lines on the body plan. These are the Dead Flat, A to D forward and 1 to 6 aft. These lines were probably determined by the Deptford Yard surveyor, by taking internal measurements (to the outside of frames) and while they give enough information for a draughtsman to describe the ship's hull shape on paper, there are not enough of them for a shipwright to build a vessel. I arrived at *Bounty's* framing plan by laying out the given station lines, from the draught, and assigning further lines at 4-foot intervals; these are the Dead Flat, (A) to O forward, and (3) to 24 aft. (The bracketed frame numbers occur amidships where all frames are identical to the frame at the Dead Flat). This system works perfectly if one allows that the surveyor took some measurements on the fore face of the frames and some measurements on the aft face, and that it was not essential that the frames he chose coincided with the original builder's lines. Based on 4-foot frame line intervals a room and space dimension of 12 inches is produced, the frames being 10 inches thick and spaced 2 inches apart. I have shown the original builder's lines circled on the half breadth plan and the framing plan.

As stated above, *Bounty's* principal dimensions were given to the Navy Board on 23 May; these dimensions are very straightforward and the draught reflects them almost precisely. The sizes of the upper deck beams and hold platform beams can also be determined from the draughts, as well as details

of stem, keel and stern post and the size of the mast steps. From here on assumptions must be made based on ship-building practices of the day (see Table 1).

TABLE 1: DIMENSIONS OF BOUNTY'S FRAMING MEMBERS

Gunwale	3in x 12in
External plank	3in x 6in
Wale	5 1/2in x 24in (3 strakes)
Strake above wale	4 1/2in x 12in
Limber strake	4in x 10in
Keel	13in wide x 11in deep
Sole plate	2in
Keelson	13in wide x 14in deep
Ceiling	2 1/2in thick
UPPER DECK	
Beams	8in to 12in wide x 5in to 8in deep (from draught)
Carlings	6in to 8in wide x 4in to 6in deep
Ledges	5in wide x 4in deep
Hanging and lodging knees	4in to 5in thick
Deck plank	2 1/2in thick
Deck clamp	4in x 9in
LOWER DECK	
Beams	12in x 12in (from specification)
Carlings	8in wide x 7in deep
Ledges	6in wide x 5in deep
Hanging and lodging knees	5in to 8in thick
Deck plank	2 1/2in thick
Deck clamp	4in x 10in
Waterway plank	5in x 4 1/2in
Spirkettling	3in thick (3 strakes)
Quickwork	2in thick

REFIT

One of the most fascinating aspects of *Bounty*, in terms of shipbuilding practices of the day, is that she was a merchant vessel not only converted into a 'floating greenhouse', but also refitted to meet the standards of the Royal Navy. Her refit took over three months to complete and cost more than her original purchase price. Refit and provisioning costs include £2504 spent on the hull, and £1952 spent on rigging and stores; with her purchase price of £1950 this gives a total of £6406.

The first alteration made was to sheath the ship with copper. When *Bethia* was acquired she was sheathed with wood to prevent sea worms from eating into her external planking. Although this was a very old practice it was not very successful; it involved coating the underwater area of a ship's hull with horse hair mixed in tar, then nailing planks over it. By 1778 it was standard policy to sheath all Navy vessels with copper and it is interesting to note that the merits of copper sheathing were first realized on ships returning from the South Seas. Coppering a ship's bottom was expensive, not so much for labour expended (a ship could be coppered surprisingly quickly), but because the cost of copper was high. The replacement of all iron hull fastenings by bronze, necessary because of the galvanic action between copper and iron, also added to the cost. To copper *Bounty* she would be beached broadside and careened over, her wood sheathing would then be removed, her iron fittings replaced with bronze ones, and she would then be sheathed with copper. She would then be refloated, turned around and the process would be repeated on the other side. After sheathing, a sole plate was stapled under her keel.

Bligh describes the conversion of *Bounty's* lower deck into a garden in his account:

The between decks was divided in the following manner:- the great cabin was appropriated for the preservation of plants, and extended as far forward as the after hatchway. It had two large sky-lights, and on each side three scuttles for air, and was fitted with a false floor cut full of holes to contain the garden-pots, in which the plants were to be brought home. The deck was covered with lead, and at the foremost corners of the cabin were fixed pipes to carry off the water that had drained from the plants into tubs placed below to save it for future use. I had a small cabin on one side to sleep in, adjoining to the great cabin, and a place near the middle of the ship to eat in. The bulk-head of this apartment was at the after part of the main hatchway, and on each side of it were the berths of the mates and midshipmen; between these berths the arms-chest was placed. The cabin of the master, in which he always kept the key of the arms, was opposite to mine . . .

The cabin arrangement described by Bligh shows very clearly on the draught, and the Navy Board went into great detail in showing the pot racks. Provision was made for a total of 629 pots, of which 433 were 6 inches in diameter and 196 8 inches. Some work on the pot racks was done by *Bounty*'s crew, for on 15 November 1788 Bligh notes in the log, 'Carpenters still employed fixing additional stands for the plants in the cabin'. He also notes, 'Cooper making tubs and boxes' and that there were 774 pots, 39 tubs and 24 boxes.

Ventilation for the plants was considered to be important by the botanist, so two sets of gratings, which Bligh describes as 'sky-lights', were installed in the quarterdeck, one ahead of the mizzen mast and one aft of the wheel. To facilitate this addition a deck locker that sat just aft of the capstan was removed and carlings were added to support the coamings. The air scuttles referred to by Bligh were rectangular openings, roughly 5 inches by 12 inches, cut into the ship's side above the deck clamp. They were fitted with hinged lids which were caulked in poor weather and their location was governed by upper deck beams and lodging knees. The draught shows the foremost scuttle party behind a swivel stanchion.

Lining the cabin deck with lead, like copper sheathing, would have been expensive but was, however, necessary to conserve precious water. This, along with the other cabin changes, was done at the suggestion of Sir Joseph Banks. The berths for the Master's Mates and Midshipmen were merely canvas screens that hung from the deck above and as such do not appear on the draught. Further changes to *Bounty*'s lower deck involved reducing the size of the after companionway and installing a companionway forward, and removal of a Carpenter's and a Boatswain's cabin. A new Brodie stove was ordered and this was placed where the carpenter's cabin had stood. Support for the stove in the form of carlings would have been added in the lower deck and an opening for its chimney was cut and framed in the upper deck.

In addition to the gratings in the quarterdeck, changes were also made to *Bounty*'s upper deck. The Admiralty had determined that the ship was to carry four 4-pounder guns and ten half-pounder swivels. To accommodate the carriage guns, ports were cut and framed in the bulwarks, the deck framing was almost certainly strengthened with added carlings, and rings were installed for gun tackles. For the swivels, five stanchions were placed on either side of the ship. On the forecastle, two small air scuttles were cut into the deck and the belfry was changed; *Bethia*'s belfry consisted of two posts supporting an arched capital and cross bar, from which the bell hung. This fitting was removed and the bell was rehung on a metal hoop mounted on the windlass post. Aft, and here the draughts are somewhat ambiguous, it would seem that

small round ports were cut into the companionway and main hatch coamings. Also on the coamings, boat chocks were placed on the aft sides of the fore companionway and main hatch. *Bethia*'s boat was probably carried on her spare spars which were themselves carried on a crutch mounted above the fore brace bitts aft and over the windlass forward. To make room for *Bounty*'s boats the spars were carried on the channels and the crutch was removed. The bitts were made slightly smaller and strengthened by adding two knees aft. Finally, a flag locker was installed between the rudder head housing and stern rail, and the timberheads adjacent to the catheads were lengthened.

Changes were also made in *Bounty*'s hold, and here again the draughts are unclear. When Deptford Yard sent the draught of *Bethia* to the Navy Board the yard officers noted, ' . . . the Sheer and Decks are agreeable to the Ship as purchas'd, with the several contrivances drawn in Red Ink, the Platforms afore and abaft, &c. in Green are proposed if it meets with your Approval'. Apparently the Navy Board returned *Bounty*'s draught, showing their desired alterations, to the yard, and it is here that the confusion arises; I am uncertain whether the platforms were existing or merely proposed. Most probably the fore platform was in place and held the galley, storerooms and cabins, and the aft platform was at least in place, as there was a ladder leading to it, but not necessarily compartmented with cabins except for a bulkhead aft to form the breadroom. In any event, I have shown *Bounty*'s hold plan as it was, and *Bethia*'s hold plan as it may have been if cabins were placed on both platforms. The Inboard Profile of *Bethia* showing changes made in her hold is based on the assumption that fore and aft platforms and cabins were originally in place.

Oddly enough, *Bethia*'s draughts do not show a hold well. This was a room formed by protective bulkheads that kept stowed items away from the base of the bilge pumps in case emergency access was required. The draught of *Bounty* shows a hold well in place and a shot locker just forward of it.

In his account of the mutiny Bligh tells us of reducing *Bounty*'s ballast:

The next material alteration made in the fitting out was lessening the quantity of iron and other ballast. I gave directions that only 19 tons of iron should be taken on board instead of the customary proportion, which was 45 tons. The stores and provisions I judged would be fully sufficient to answer the purpose of the remainder; for I am of the opinion that many of the misfortunes which attend ships in heavy storms of wind, are occasioned by too much dead weight in their bottoms.

Finally, before leaving Spithead, *Bounty* would have received a coat of paint and had her name painted on the counter.

DECORATION

It is highly unlikely that the Navy Board authorized any changes to *Bounty*'s decoration, and, other than painting the hull, particularly in areas of new work, it would have remained as it was for *Bethia*. The standard hull colours of the day were blue for the plank, black for the wale, and yellow for the trim including planksheer, rails, stanchions, taffrail and headrails. The deck, masts and yards were left as natural wood and the cabin panelling was painted white.

There are two references to the figurehead; the first, by Bligh, is given in a letter to Sir Joseph Banks in which he notes, ' . . . a pretty figurehead of a woman in riding habit'. The second is in Bligh's account of the mutiny, and reads, 'The head of the ship was the figure of a woman, and not ill carved. As we were painting the ship's upper works, I directed this figure to be painted in colours, with which the islanders were much pleased.' (At the time *Bounty* was at Tahiti).

No contemporary drawings or paintings of *Bounty* exist and I have not found any verbal description of her stern decoration, so here I have exercised some licence; the drawings show the stern cove carved in a motif that reflects the ship's name, *Bounty*.

STEERING GEAR

There was nothing out of the ordinary about *Bounty*'s steering gear and apart from coppering the rudder and installing bronze fastenings it was not changed from that of *Bethia*. The rudder itself was made up of two large timbers and was hung on the stern post by means of four large hinges formed by gudgeons on the stern post and pintles on the rudder. A hole was cut in the transom planking, through which the rudder passed, and the two transom timbers on either side of it were spaced to allow the rudder to swing. This hole, known as the helm port, was fitted with a tarred canvas shroud to prevent the sea from washing up into the great cabin. At the level of the upper deck the heads of the stern post and rudder were reinforced with iron bands and both were covered with a wooden housing through which the tiller passed. The tiller was tennoned into the rudder head and the hole in the housing for it was made wide enough athwartships to allow for its sweep, and here again a canvas shroud was employed to keep water out.

The steering wheel was single and sat aft of the mizzen mast; its component parts were carved and turned from hardwood and it had brass reinforcing fittings as required. The tiller was controlled by a single rope wrapped seven or nine times around the drum of the wheel, passed through 10-inch blocks directly below, then led to blocks on either side of the deck, brought aft and finally secured to the tiller. The sweep of the tiller and arrangement of control ropes on the quarter-deck made working on the aft area of the ship awkward at best, and indeed Captain Cook had a platform built over *Endeavour*'s tiller, which was arranged similarly to *Bounty*'s, so that his important passengers could walk comfortably around on the poop.

Immediately ahead of the wheel sat the binnacle, the item of furniture which housed the ship's compasses. It was built of hardwood and besides containing the compasses, one on either side, it held an oil lamp and therefore had a brass chimney on its top. Glass panels were fitted in the binnacle to allow the compasses to be seen, but as the binnacle was lashed to the deck very close to the wheel, it would have been difficult for the helmsman to see in; with the mizzen mast and bitts so close in front it would have been awkward even for the officer of the watch, whose duty it was to monitor the compasses, to see in. All metal fittings of the binnacle and surrounding area were of brass rather than ferrous metal so that the compasses would not be adversely affected.

GROUND TACKLE

As mentioned above, *Bethia*'s anchors came with her when she was bought by the Navy, and it is indicative of their importance that Deptford Yard specifically listed their size and price separately when reporting to the Navy Board:

Anchors propos'd to be purchas'd with her:

	Cwt	qr	lb
Anchor of	13	3	0
	13	3	8
Iron stocked	5	1	0
	2	1	20
	1	3	10

The two 13cwt anchors were wooden stocked bower anchors; one was recovered from Bounty Bay and is now at Pitcairn Island. Its principal dimensions are shown in Table 3.

TABLE 3: ANCHOR DIMENSIONS

	ft	in
Length of shank	11	7 (ring to crown)
Circumference of shank	1	7
Between bills	8	0
Breadth of palms	1	7
Diameter of ring	1	10

From the table of anchor dimensions it will be seen that these figures coincide with what was common practice of the day. When leaving Tahiti for the last time Fletcher Christian cut *Bounty*'s anchor cable and 'ran'. This anchor was subsequently dragged for and recovered by *Pandora*, the frigate sent to capture *Bounty*'s mutineers, and as *Pandora* was wrecked on the Great Barrier Reef while returning to England, it is believed that this anchor, the second bower, lies with her remains. *Bounty* carried six anchor cables, each 100 fathoms long.

Bligh makes two interesting notes in *Bounty*'s log concerning the best bower anchor. First, on 4 April 1789 he notes, 'In stowing the best bower anchor the stock broke in the nut and fell overboard, being destroyed by the worms. My sheet anchor had an iron stock for the convenience of carrying it in the chains, and I used it therefore as a small bower; I saved the anchor stock. Ships that come here should have iron stocks.' Then, three days later he notes, 'New stocked the best b[owe]r anchor'.

The three iron-stocked anchors were the stream (5cwt 1qrt 0lb) and two kedges (2cwt 1qrt 20lb, and 1cwt 3qrt 10lb). The sheet anchor that Bligh refers to in the log was the stream, and as it was the next in size after the bowers it was adopted as the sheet. (Larger ships usually carried a total of four wood-stocked anchors.) This stream anchor was carried on the channel and the two kedges were carried in the hold.

It was customary to carry windlasses on smaller ships, particularly merchant vessels, as they could be worked by a relatively small crew. On the other hand, the Navy, with a large pool of manpower to draw from, fitted capstans (often in pairs, one above the other) in their ships. The advantage of a windlass operated by a few men was offset by two negative factors: windlasses were slow in operation and took up a good deal of deck space. Apart from rearranging the belfry, no changes were made to *Bethia*'s windlass after she was bought by the Navy. Note that the draughts clearly show three pawls.

Like the windlass, the capstan was originally fitted to *Bethia* and did not undergo any alteration, but its arrangement is interesting; at this time it was usual to mount the capstan with its spindle stepped on the deck below, but as in *Bounty* there was a companionway immediately under it, this would have been impossible. The spindle was critical in that it provided lateral bracing to the capstan, and if *Bounty*'s capstan merely rotated on a short iron spindle on the upper deck its power would have been greatly reduced. Although proof is impossible, this arrangement nevertheless seems to be the only one possible here, and it must be assumed that the capstan was used for very light work only. Furthermore, *Bethia*'s draught shows a deck locker just aft of the capstan (this may have been removable and indeed was removed for *Bounty*) as well as a 12-inch companionway coaming ahead of it. The opening of the companionway could be closed by placing a grating over it, but the locker, which was 3 feet high, ruins an important working principle of the capstan: that men should be able to walk around it in an unbroken circle.

TABLE 2: ANCHOR DIMENSIONS Based on Falconer's Dictionary of 1830

Item	Weight (cwt)	Length of the shank	Length of the flukes	Breadth of the palms	Thickness of the palms	Size of the trend	Size of the small round	Outer diam of the ring	Thickness of the ring
Bowers	14	11ft 8in	3ft 11in	1ft 8¼in	1¼in	4¾in	4¾in	1ft 8¼in	2¾in
Stream	6	8ft 6in	2ft 10in	1ft 3in	1in	3¼in	3¼in	1ft 3in	1½in
Kedge	2	6ft 6in	2ft 2in	11in	¾in	2¾in	2¼in	11in	1½in

Note: The figures given here do not precisely match the weights of *Bounty's* anchors; they are the next closest size listed by Falconer.

PUMPS

The pumps carried aboard *Bounty* were of the elm tree type; that is, they were made from the trunk of an elm forming a tube that extended from 3 feet above the upper deck to the lowest point of the ship, just aft of the mainmast. They were of a simple design; a handle (or brake) operated a metal rod in the tube of the pump and at the lower end of this rod was a one-way valve made from a perforated disc. As the rod pushed the disc downwards the holes permitted water to pass through, but on the upward stroke a leather flap fell over the holes to prevent the passage of water, thus causing it to be carried upwards. As the stroke of the rod was less than 3 feet, another such valve was placed at the base of the pump, and the pump had to be primed to work. Seepage water was collected in a cistern at the base of the pump by means of holes bored through each frame, and any water that spilled through deck openings into the hold was collected by means of channels, limber passages, running the whole length of the ship on either side of the keelson. At the upper deck the brakes were made removable so as not to interfere with the working of the ship when the pumps were not in use. On large ships this type of pump was not used for pumping bilge water but rather for pumping sea water (used primarily for washing the ship or, if needed, fire fighting) while chain pumps were employed to control seepage.

Bethia's outboard profile does not show pumps (although her upper and lower deck plans do, but not a hold well) but it is difficult to imagine a ship of her size without pumps. In any event, *Bounty* carried two elm tree pumps, aft of the mainmast and roughly 2 feet either side of the centreline.

On *Bounty's* outward voyage Bligh developed a novel application for the pumps, details of which are given in the log. 'February 7, 1788, Drew the boxes of one pump & employed hands to pour water down, and kept the other pump constantly going for one hour, until the water came out no more offensive than when it was put in'. He found another use for the pumps on 22 February 1788: 'In heavy rains when the ship became heated below I found this to have the most valuable effect and I believe the pumps to be the best ventilators that can be put into a ship'.

BOATS

As originally ordered by the Navy Board on 20 June 1787, while *Bounty* was fitting out, her boats were to be a 20-foot launch, and 18-foot cutter and a 16-foot cutter or jolly boat. These boats were apparently delivered to Deptford Yard but at Bligh's request the first two were exchanged for a 23-foot launch and a 20-foot cutter. Bligh, having had experience in the South Seas, realized the value of large boats for provisioning and watering. The Navy Board's decision that the longest boat was to be of 20 feet was probably arrived at by considering stowage; from *Bounty's* fore brace bitts to her fore companionway is a little over 18 feet so a 20-foot boat would have fitted quite comfortably on the main hatch. Even after removing her rudder the 23-foot launch took up a

great area of deck space and Bligh states the bow came 'well with the fore hatchway, rather projecting over it'.

The problem of boat stowage does not end with the excessive length of the launch; it is complicated further when we consider height. If *Bounty's* two largest boats were stowed alongside one another there would have been a mere 2 feet 9 inches between either boat and the rail, and as this area of the ship was important for sail-handling it is likely that the cutter sat in the launch, which was placed on *Bounty's* centreline. The problem then arises of where to stow the Jolly Boat. Three options are available here: the launch may have been stowed off-centre with the 20-foot cutter within and the Jolly Boat snugged beside it; the three boats may have all been stowed on the centreline of the ship with the Jolly Boat on top (this would have been an awkward balancing act and would interfere with the mainsail); or, when trading *Bounty's* small boats for larger ones the 16-foot cutter may have been dropped. Whatever the real answer is, I have shown *Bounty* with two boats only.

Bounty's 23-foot launch is as well known as the ship herself due to Bligh's 3600-mile voyage in her. She was carvel built, six-oared, and was designed to carry thirteen people (when Bligh was set adrift there was a total of nineteen in the launch). It is believed that the launch was built by a Mr John Burr, a contractor for Navy boats, at a cost of about £43. As the launch was intended for anchor-handling and other heavy duties she was fitted with a removable windlass amidships and two davits with a sheave were placed in her stern. A standard draught for 23-foot launches of this time exists and shows this outline specification:

Length	23ft 0in
Breadth	6ft 9in
Depth	2ft 9in
Stern sided	0ft 3½in
Keel Do. Midships	0ft 3¾in
Post sided at the Tuck	0ft 3½in
Alow [below]	0ft 3in
Transom thick	0ft 2in
Floor timbers Sided	0ft 2in
Moulded at the Heads	0ft 2½in
Throat	0ft 3¾in
Futtocks Sided Alow [below]	0ft 2in
Square at the Heads	0ft 1¾in

We also know that the launch was a good sea boat; Bligh notes in the log, while adrift, '4 May, 1789 We could do nothing more than keep before the sea, in the course of which the boat performed so wonderfully well . . .'

The rigging of boats varied quite dramatically and was determined by the intended use of the boat as well as the personal preference of those who sailed

them. The draught of *Bounty*'s launch clearly shows provision for stepping one mast, well forward, and in this instance she would most likely have been rigged as a cutter. However, Bligh makes a number of references to her rig in the log that have convinced me that she carried two masts:

- 3 May 1789 I bore away under a reefed lug fore sail
- 10 May [1789] I now got fitted a pair of shrouds to each mast
- 10 May 1789 In the afternoon I fitted a pair of shrouds for each mast, and contrived a canvas weather cloth round the boat, and raised the quarters about 9 inches, by nailing on the seats of the stern sheets, which proved of great benefit to us.

The drawings show the boat rigged as a lugger, with masts and yards, rigging and sails all based on Steel. As so much variation occurred with boat rigging, the figures given in the Rigging Schedule under 'Rigging for cutter and launch' can only serve as a general guideline.

After carrying Bligh and his followers to Coupang (Kupang) *Bounty*'s launch was towed to Batavia (Jakarta) and eventually sold at auction. By this time Bligh had grown sentimentally attached to her and in his account he wrote, 'The launch was likewise sold. The services she had rendered us, made me feel a great reluctance at parting with her, which I would not have done, if I could have found a convenient opportunity of conveying her to Europe.'

The 20-foot cutter was clinker built, shipped six oars and was designed to carry a maximum of ten men. The drawings show her rigged as a cutter, with a single mast set well forward, a large fore-and-aft main sail spread on a gaff and boom and two fore sails. Here again, rigging and sails are based on Steel's proportions. If *Bounty* carried a 16-foot Jolly Boat, it would have been clinker built and would have carried four oars.

CREW AND ACCOMMODATION

Based on a formula of 15.5 tons per man, *Bethia*, as a merchantman, would have required a crew of some fifteen men to sail her. For the purpose of the Navy's South Sea mission *Bounty*'s total proposed complement was forty-five:

TABLE 4: SCHEME OF COMPLEMENT

1 Lieutenant to command	1 Boatswain's mate
1 Master	1 Gunner's mate
1 Boatswain	1 Carpenter's mate
1 Gunner	1 Carpenter's crew
1 Carpenter	1 Sailmaker
1 Surgeon	1 Corporal
2 Master's mates	1 Clerk and steward
2 Midshipmen	25 Able seamen
2 Quartermasters	
1 Quartermaster's mate	45 TOTAL

This complement was altered slightly as an Armourer and an Assistant Gardener were assigned to *Bounty*, so two seamen were dropped to make room for them. When *Bounty* sailed she carried forty-six men, as a Botanist had been assigned; understandably, overcrowding occurred on her lower deck when her crew was increased threefold. This problem was exacerbated by her load of provisions for eighteen months and by the physical alterations to the ship which reduced crew accommodation area.

As the great cabin was given over to the stowage of plant pots, a small sleeping cabin was built for Bligh just ahead of it on the starboard side and a

similar cabin was installed for the Master, opposite. Between these cabins was a companionway lobby, and the Captain's dining room with its pantry was placed forward of these. The dining room also served as a day room for Bligh and as an office for the Clerk. As mentioned above, berths formed by canvas screens were placed on either side of the upper deck ahead of the dining room bulkhead for the Master's Mates and Midshipmen. The remainder of the lower deck, a space roughly 22 feet by 36 feet, was allotted to thirty-three seamen, with some of the space also taken up by hatches, companionways and the stove. Bligh refers to the cramped quarters aboard *Bounty* in his account, dated 10 April 1788, '... The decks also became so leaky, that I was obliged to allot the great cabin, of which I made little use, except in fine weather, to those people who had wet berths, to hang their hammocks in; and by this means the between decks was less crowded'.

On the aft platform of *Bounty*'s hold, the cockpit, seven small rooms (their headroom being barely 5½ feet between the beams) were built as cabins for the Botanist, Captain's Clerk, Surgeon, Steward and Gunner and as the Captain's store room and slop room. Aft of this platform, in the after peak, was the bread room, and below it were the spirit room, fish room and aft magazine. Cabins for the Boatswain and Carpenter were located on the fore platform as well as their respective store rooms and the Gunner's store room, sail room, pitch room and block room. Below the platform was a second Boatswain's store room and sail room and the forward magazine.

The Navy Board ordered a new firehearth for *Bounty* in July 1787 and it had been installed before undocking on 14 August. This particular firehearth, called a Brodie stove after its manufacturer, had been adopted by the Navy in May 1781 as the only type of firehearth to be employed on His Majesty's ships. (Brodie held this monopoly until 1819.) The stove was built of wrought and cast iron, was fired by coal or wood, and its cooking facilities included a bake oven, boilers and a roasting hearth. A spit was mounted at the front of the roasting hearth on adjustable brackets and it was driven by a chain that was driven in turn by a fan in the chimney. A fresh water condenser was placed on top of the stove, aft, and the stove's metal chimney could be rotated as required by the direction of the wind. While trying to round Cape Horn Bligh notes, 'With so much bad weather, I found it necessary to keep a constant fire, night and day; and one of the watch always attended to dry the people's wet clothes: and this, I have no doubt, contributed to their health as to their comfort'.

One other stove, or space heater, was placed aboard *Bounty*. On 10 October 1787 the Admiralty wrote to the Navy Board,

... We do hereby desire and direct you to order a proper stove to be placed in the apartment on board the *Bounty* armed storeship, which is intended to contain the principal part of the Trees and Plants, to prevent their receiving injury from the cold during their passage round the Cape of Good Hope ...'

MASTS AND YARDS

Details concerning the dimensions of *Bounty*'s masts and yards are well documented as some of her spars were altered twice during refit and proposed changes to them were recorded. In Table 5, the first set of figures is for *Bethia* as she was bought, as Deptford Yard sent them to the Navy Board on 6 June. With these figures came a request for instructions, and on 8 June the Board ordered that *Bounty*'s masts and yards were to comply with the second set of figures listed. In comparing the two sets of figures we find that the main topgallant and polehead were reduced, as were the fore topgallant and

TABLE 5: DIMENSIONS OF MASTS AND YARDS

Item	As bought with <i>Bethia</i>		As ordered by the Admiralty		As requested by Bligh	
	length	diam	length	diam	length	diam
Mainmast	58ft 10in	16in	58ft 10in	16in	55ft 0in	16in
Main topmast	35ft 10in	10¾in	35ft 10in	35ft 10¾in	35ft 10in	10¾in
Main topmast head	4ft 9in		4ft 9in		4ft 9in	
Main topgallant mast	23ft 10in	6in	18ft 2in	6in	18ft 2in	6in
Main polehead	10ft 9in		9ft 1in		9ft 1in	
Main yard	40ft 5in	11¼in	46ft 6in	11¼in	41ft 0in	9½in
Main topyard	35ft 2in	8½in	35ft 2in	8½in	31ft 0in	6½in
Main topgallant yard			24ft 8½in	5in	24ft 8in	5in
Foremast	53ft 4in	16½in	53ft 4in	16½in	51ft 0in	16½in
Fore topmast	34ft 3in	10¾in	34ft 3in	10¾in	34ft 3in	10¾in
Fore topmast head	4ft 0in		4ft 0in		4ft 0in	
Fore topgallant mast	23ft 5½in	6in	17ft 3in	4¾in	17ft 3in	4¾in
Fore polehead	12ft 2in		8ft 7in		8ft 7in	
Fore yard	40ft 5in	11in	40ft 5in	10in	38ft 0in	8½in
Fore topyard	30ft 6in	7¾in	30ft 6in	7in	28ft 0in	5½in
Fore topgallant yard			24ft 8in	5in	24ft 8in	5in
Mizzen mast	48ft 2in	11¼in	48ft 2in	11¼in	48ft 2in	11¼in
Mizzen topmast	24ft 3½in	6½in	24ft 3½in	6½in	24ft 3½in	6½in
Mizzen topmast head	3ft 1in		3ft 1in		3ft 1in	
Mizzen yard (gaff)	21ft 2in	6½in	21ft 2in	6½in	21ft 2in	6½in
Crossjack yard	36ft 2in	7½in	30ft 6in	6½in	30ft 6in	6½in
Mizzen topmast yard	24ft 0in	5¼in	24ft 0in	5in	24ft 0in	5in
Bowsprit	35ft 4in	18¼in	35ft 4in	18¼in	35ft 4in	18¼in
Bowsprit housing	10ft 2in		10ft 2in		10ft 2in	
Jib boom	27ft 1in	8¾in	27ft 1in	8¾in	27ft 1in	8¾in
Spritsail yard			30ft 6in	6¾in	30ft 6in	6in

polehead; the fore and mizzen topyards were reduced in diameter only, and the crossjack yard was reduced in length and diameter. Furthermore, main and fore topgallant yards were needed (and provided) as was a spritsail yard, and because the main yard was to be increased by some 6 feet, a new one would have had to be provided. This general reduction in top weight was in keeping with Admiralty policy for ships headed to the South Seas.

In the draughts, further changes were made to *Bounty*'s masts and bowsprit; *Bethia*'s draught shows the heels of her masts tennoned directly into the keelson, whereas on *Bounty*'s draught mast steps are clearly shown. The bowsprit was altered in *Bounty* by raising its heel some 8 inches, thus reducing its steeve.

The second alteration to *Bounty*'s rig was the result of Bligh's request and was prompted by his knowledge of the South Seas. He notes in his account, 'The ship was masted according to the proportion of the navy; but on my application, the masts were shortened, as I thought them too much for her, considering the nature of the voyage'. Dimensions of *Bounty*'s masts and yards as she left Spithead, those reflecting Bligh's wish, are given in the third set of figures; by comparison of these with those of the Admiralty we find that the main and fore masts, yards and topsail yard were all reduced. The note in the log concerning this work reads, 'On the 4th September from an application I had made the lower masts were got out and shortened and the lower topsail yards were cut on shore agreeable to my request'.

Shortening a mast would have involved a good deal of work, as all of the rig above it (starting with the sails, then yards, running rigging, top and topgallant masts and their standing rigging) would have to be brought down; the mast would then be lifted, shortened, retennoned, replaced and rerigged, with adjustments to the standing rigging as required. This was not an uncommon practice and was even done away from docking facilities; indeed, Bligh, while at False Bay, had *Bounty*'s mizzen mast cut down; '26 May, 1788, I directed

that the Mizzen Mast should be raised out of the step and two feet cut off it, as it is too taut and strains the ship about the quarter and it was done and the rigging repaired and fitted'. Similarly, shortening a yard would not be just a matter of cutting a length off each end; the whole yard would have to be retapered to suit. This was of particular importance when lower and topyards were involved, as quarter irons and boom irons had to be refitted.

As well as asking that the *Bounty*'s spars be reduced, Bligh also asked for 'Gratten Tops' (grating tops) as opposed to the plank tops that were used by the Navy as fighting platforms. It was customary for merchant vessels to carry grating tops, (that is, tops whose platforms were formed by grating) as they were not required for martial activities and they were lighter and less subject to rot than plank. It may have been that *Bethia*'s tops had been changed to plank, or perhaps the Navy Board was contemplating doing so.

The drawings show *Bounty*'s masts and yards with lengths and given diameters taken from the last set of dimensions. All other dimensions and diameters are based on Steel's formulae for mastmaking and as such cannot be too far from wrong, since Steel's book came only seven years after *Bounty*'s refit. Generally, *Bounty*'s spars are slightly larger than as required by Steel for their length and it is interesting that *Bethia*'s foremast was half an inch larger in diameter than her main. Finally, I have shown the lower mast bibbs in the style of the merchant navy, fixed to the sides of the hounds and not tennoned to their fore faces, as in all likelihood *Bethia*'s masts were built this way and there was no need for the Navy to change them.

SAILS

Bounty was fully rigged as a ship; that is, she carried square sails on all three masts. Although this point is quite obvious it is worth mentioning, as her size makes her rig somewhat unusual, in that vessels of less than 250 tons were customarily rigged fore-and-aft. Generally, the fore-and-aft rig required less

manpower per ton to handle and this was an important consideration for merchantmen.

Square sails carried on *Bounty* were: spritsail on the bowsprit; course, topsail and topgallant sail on the foremast; course, topsail and topgallant sail on the mainmast; and topsail on the mizzen mast. Fore-and-aft sails, also known as staysails, were: three between the bowsprit and foremast; three between the fore- and mainmasts; two between the main and mizzen masts and the very important mizzen course, or driver, on the mizzen. She also set three studding sails on either side of the fore- and mainmasts, to bring the total number of sails to twenty-nine. A matching suit of spare sails was carried in the hold.

Here again, the drawings show the sails in accordance with Steel, with sizes determined from the sail and rigging drawings, and they are based on masts and yards as carried on *Bounty* when she left Spithead. If *Bethia* was fitted with sails when she was purchased by the Navy, they would have been modified to suit the new spar dimensions (or she would have been fitted with new ones); it seems that further changes were still necessary, as Bligh notes that, 'The lower studding sails being too deep I cut them and made royals out of the canvas'. Royal sails would have been roughly 7 feet by 21 feet for the fore polemast and 8 feet by 22 feet for the main.

RIGGING

Any difference between *Bethia*'s and *Bounty*'s rigging would be minimal, if there was a difference at all, and as *Bounty* was rerigged to suit the new spar configuration, it is safe to assume that her rigging met with Navy standards. As the smallest ship listed by Steel is of 250 tons (ships from eighteen to fourteen guns, or from 300 to 250 tons), the rigging schedule shows rope sizes (circumference) as given for this ship, and as such some items, particularly the largest, may be slightly oversize. I have, however, made adjustments where Steel's list is obviously inaccurate. The lengths of rigging are determined somewhat differently as a rope's length was calculated by a formula based on its respective spar's length. These lengths may not be perfectly accurate as I believe they were mainly used as a guideline for the ropemakers; minor adjustments would have been made by the ship's riggers. This would not apply to a re-rig, in which a rope being replaced could be measured.

Some rigging items are not given by Steel for a ship of *Bounty*'s tonnage and where this is the case I have used other means to determine their sizes and lengths. Some of these items include wooldings, bowsprit gammoning, jib-boom lashing and strap, Flemish horses and some studding sail rigging. Figures given for shrouds and swifters by Steel are based on seven pairs, and as *Bounty* carried five pairs, an adjustment was made which has also affected the overall length of ratlines. Royal backstays and flagstaff stays are not shown by Steel as he does not allow for royal sails. I have shown these items, although they were unlikely to have been in place when *Bounty* left Spithead, as Bligh would have rigged them when setting new royals. Also, running rigging to the royals must be allowed for.

Finally, after allowing that *Bounty* was somewhat out of the ordinary for the Navy, the belaying plan has been arranged to follow conventions of the day as closely as possible.

ORDNANCE

Although *Bounty* carried four 4-pounder guns (short) and ten half-pounder swivels she could not, by any definition, be termed a fighting ship. *Bounty* mounted guns for two reasons: first as a deterrent to pirates (who were often found on the eastern seas) and any hostile natives who might be encountered;

and second to salute another ship or when entering port.

Bounty's 4-pounder guns were the standard design Naval gun, and as such they were mounted on wooden carriages. The 4-pounder given in the drawings is based on the dimensions of one of *Endeavour*'s guns which Captain Cook was forced to jettison when his ship struck the Great Barrier Reef. This gun is now in Australia and would have been virtually identical to *Bounty*'s; it is 6 feet long, 13½ inches in diameter at its breech, its bore is 3¼ inches and it weighs about 1000 pounds. A crew of four men was required to work this gun and it is interesting to note that on *Bounty* there is a shroud deadeye directly in front of the first gunport and a timberhead just inboard of the second. Furthermore, the recoil of the second gun was seriously impeded by the mizzen topsail sheet bitts. These obstructions would have been a problem in a real man-of-war.

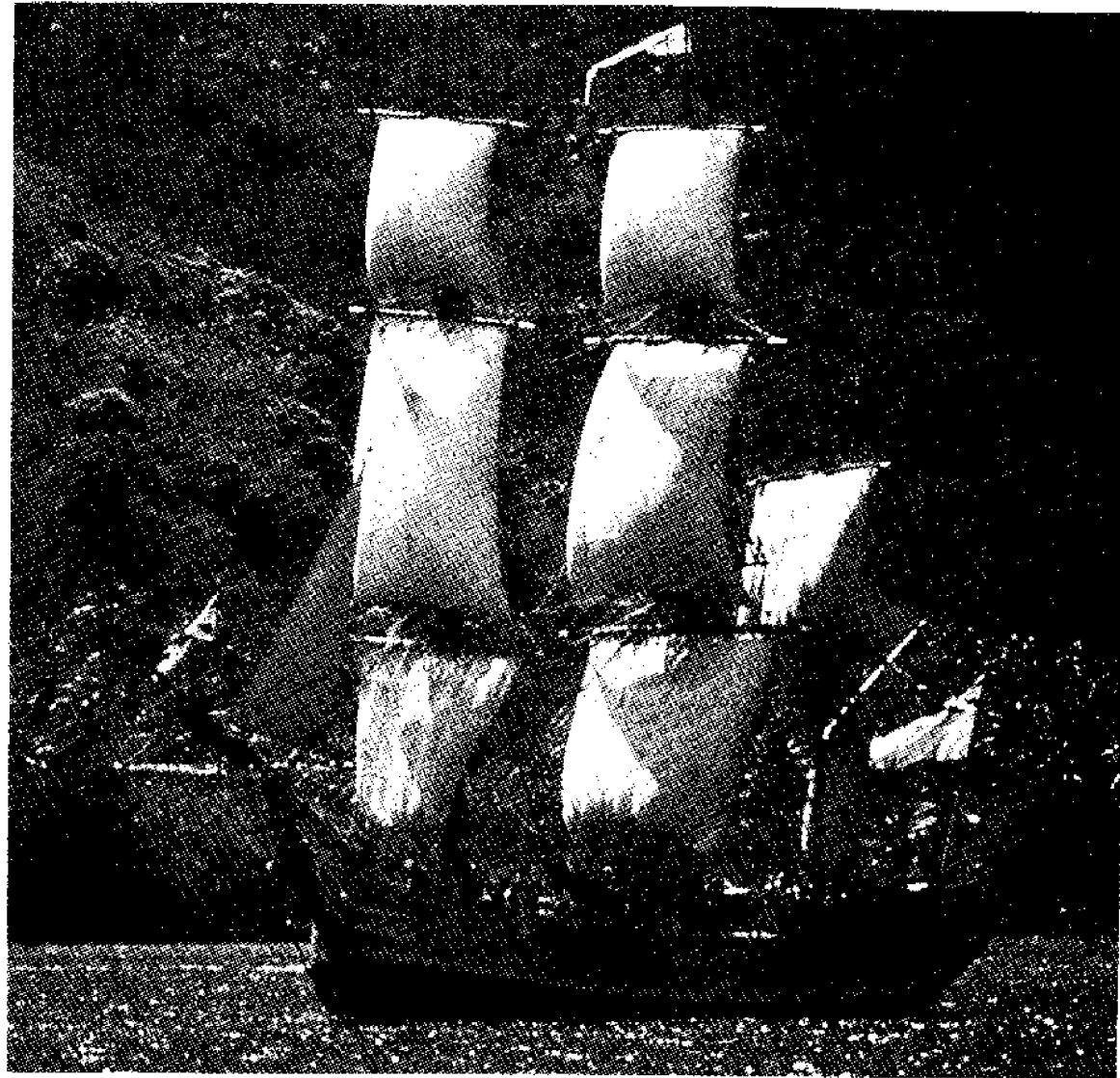
Swivel guns were the smallest mounted weapons to be employed by Navy ships; they were used for anti-personnel purposes and were manned by a crew of two. They were mounted by means of a wrought iron yoke that was clamped around the trunnions and had a spike fitted to it. The spike (the term spike is somewhat misleading as it was really a spindle) was placed in a hole bored in the top of the timber gun stanchion, and this simple arrangement not only allowed the gun to be trained and elevated, but also made the weapon very portable; swivels were usually carried in the hold until needed. The swivel shown here is 2 feet 9½ inches long, 6½ inches in diameter at the breech, its bore is 1¾ inches and it weighs slightly more than 100 pounds. A lever, known as the tiller, was often fixed to the breech of swivel guns to provide more control when training. Many variations of the tiller occur, but basically, if it had not been cast together with the gun, it was a wrought iron handle that was clamped around the pommelion, and it was about 12 inches long. It is probable that *Bounty*'s swivels were equipped with tillers, but for want of positive information the drawings do not show one.

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The Photographs

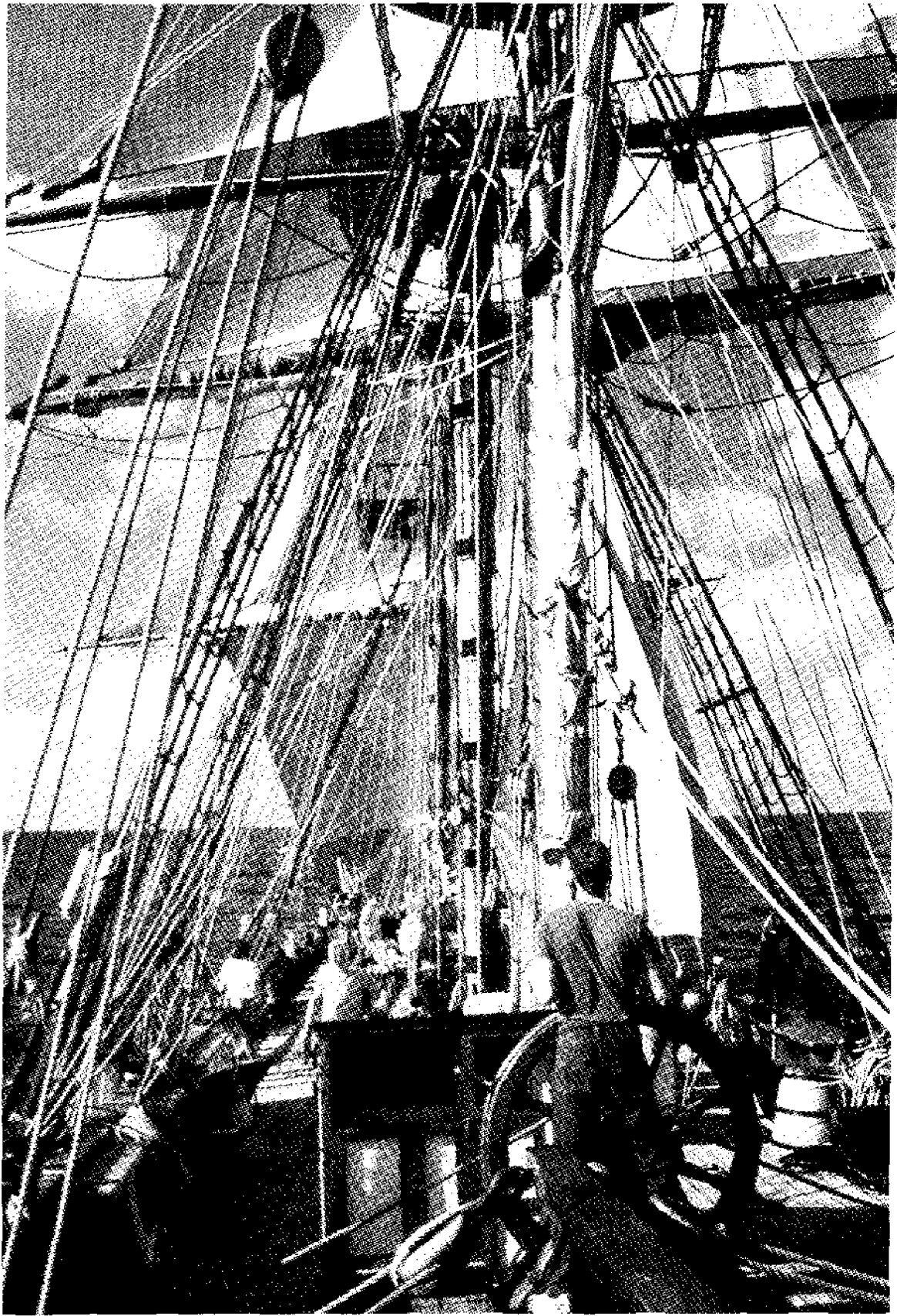
There are no authentic contemporary models of *Bounty*. The photographs in this section show the two full-scale replicas of the ship used for the 1962 and 1979 recreations for the cinema of Bligh's famous voyage. Both replicas were built to a very high standard, and, in external appearance at least, provide a very good overall impression of the original ship. Deck fittings and internal appearance, however, are not entirely authentic on these replicas, and views of such features have necessarily been kept to a minimum here. The photographs of the earlier replica shown here, built by the Smith & Rhuland Shipyard, Lunenburg, were taken by John Mannering; those of the later replica are courtesy of Mike Davidson of Bounty Voyages Pty of Australia.



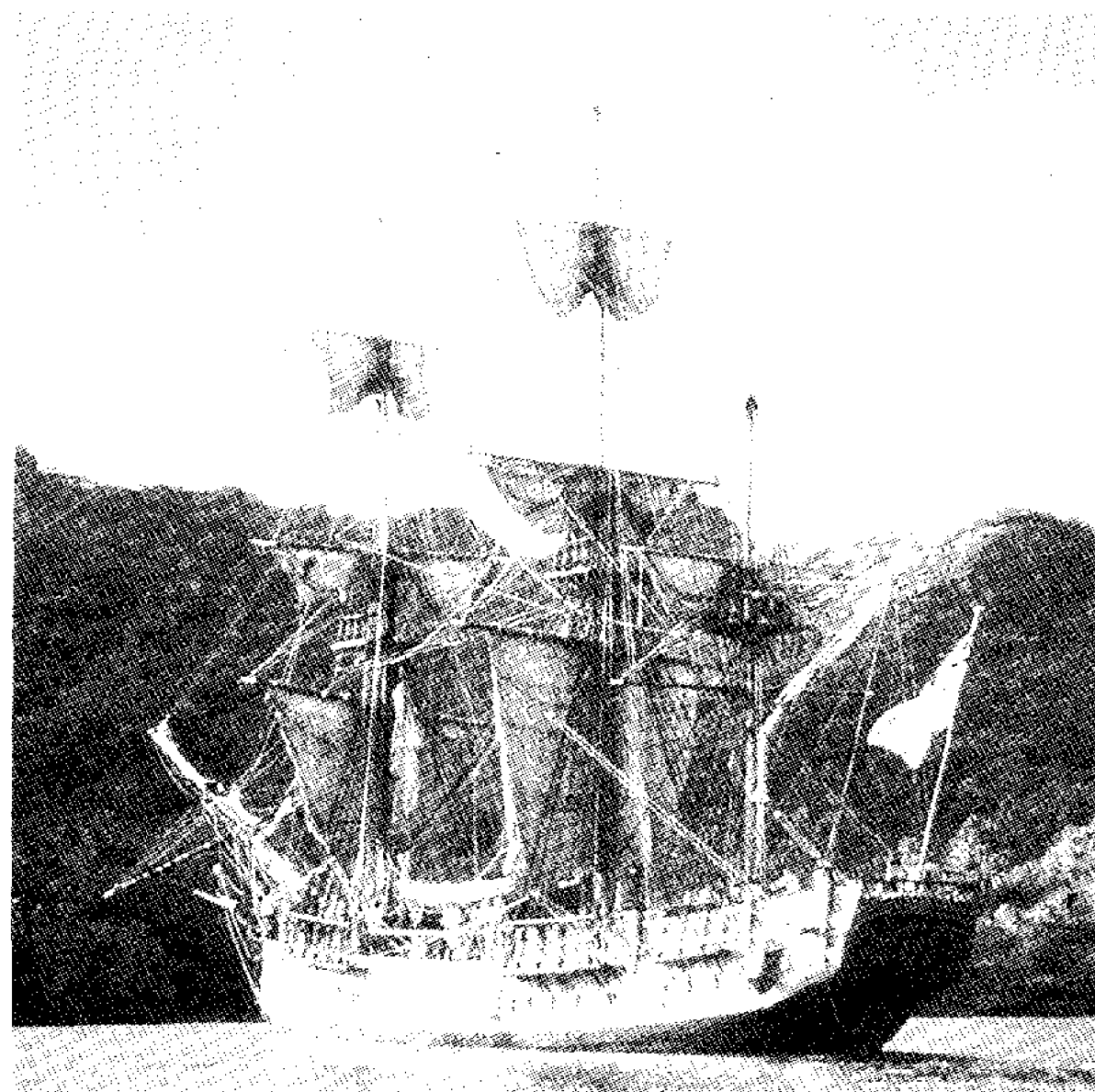
2. The more modern replica of *Bounty* was launched in 1979 in New Zealand. She is seen here from the port bow.



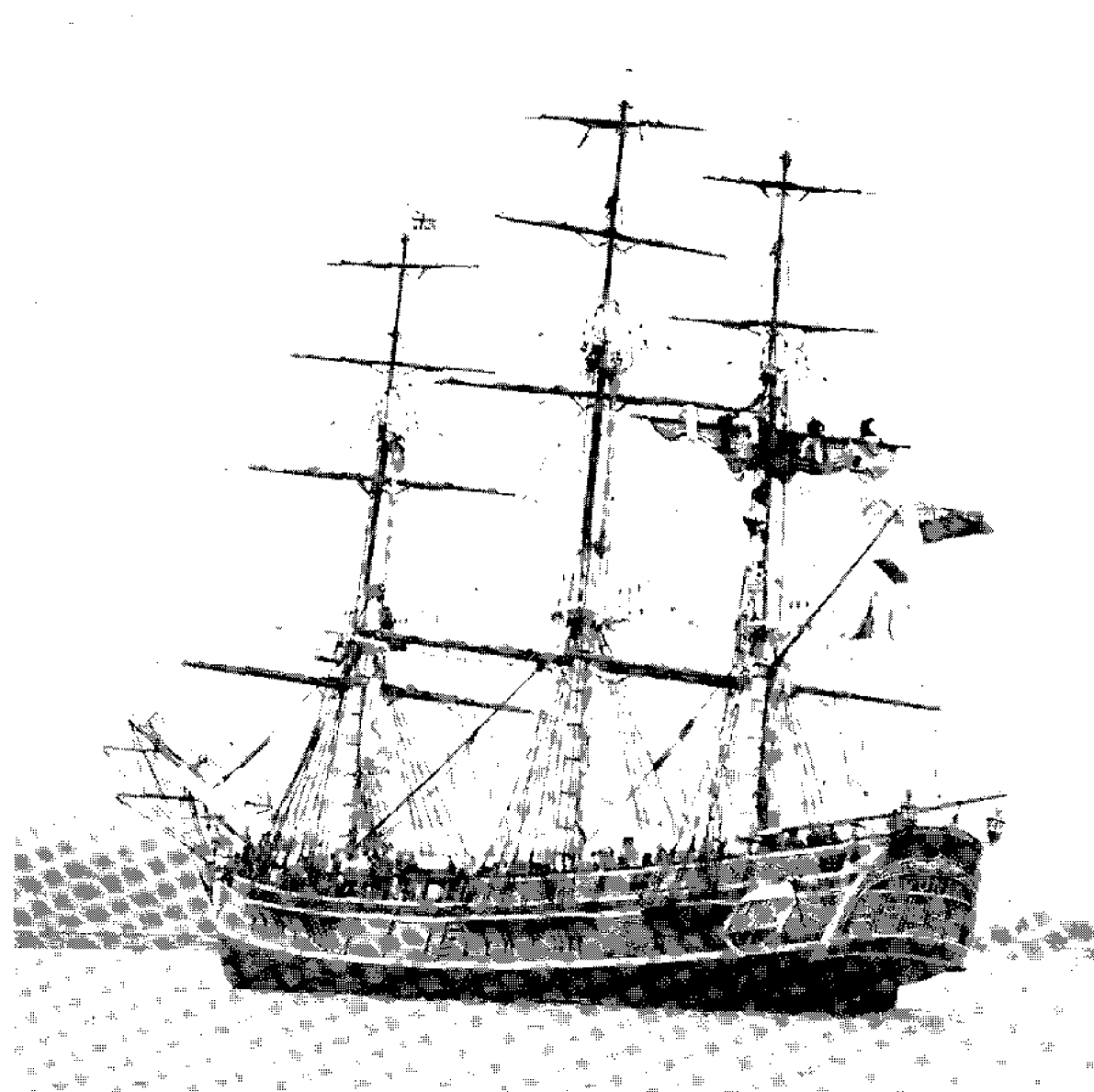
3. The replica of 1979 under full sail.



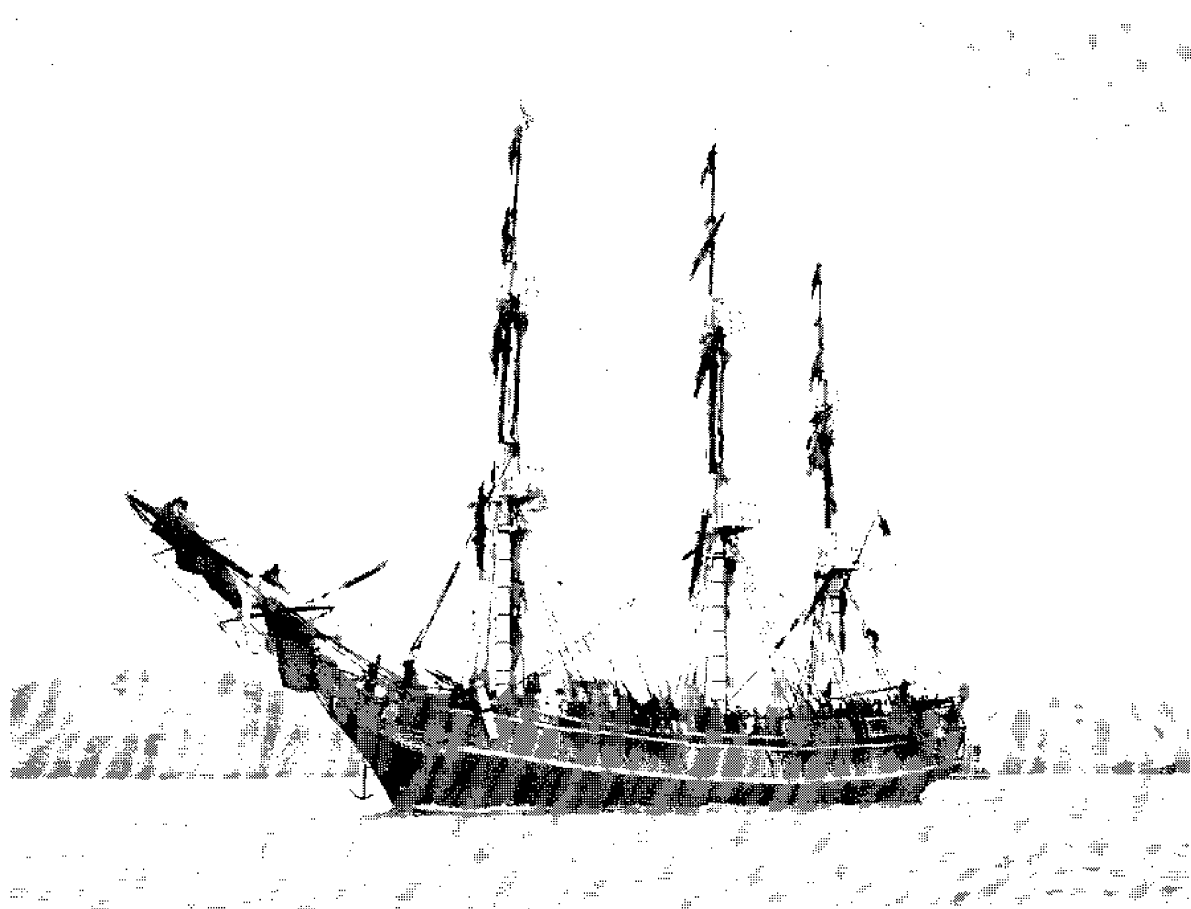
5. Apart from the clothes of the crew members, this view of the 1979 replica gives a good impression of the deck of the original ship.

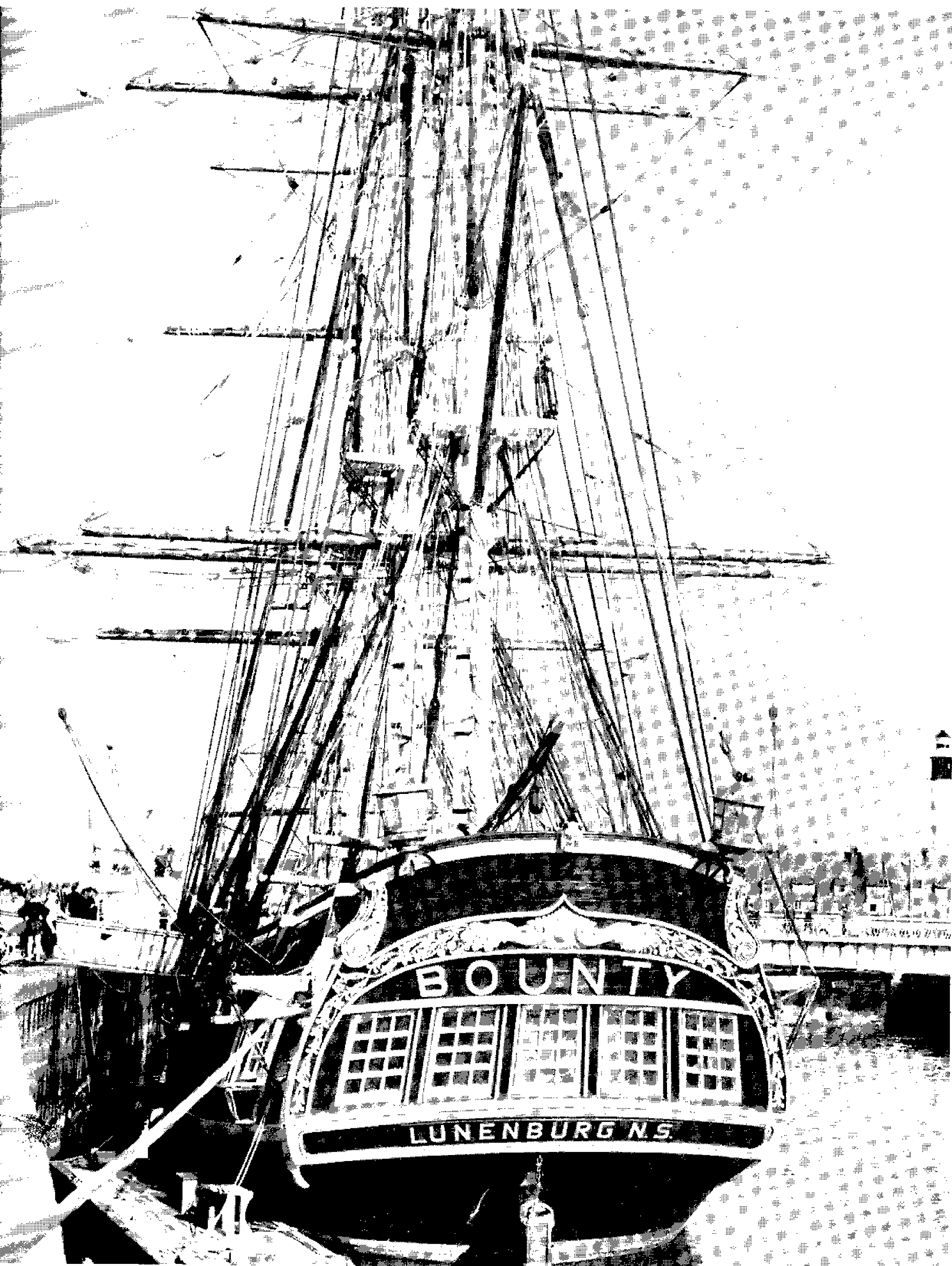


4. A port quarter view of the 1979 replica.



6. Above right: This port quarter view of the earlier *Bounty* replica, apart from the large number of modern passengers, shows the authenticity of the first reconstruction.

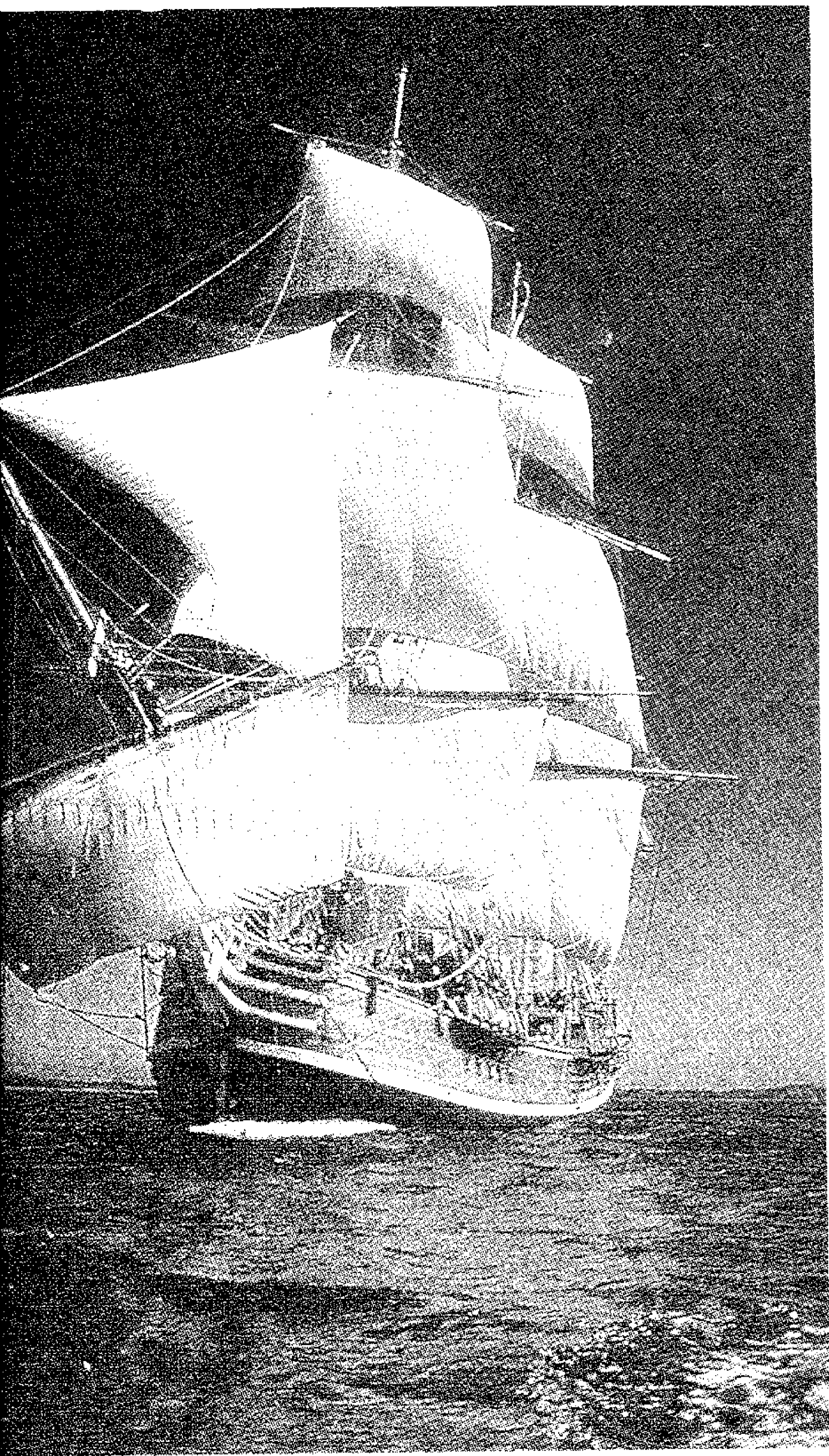




8. The earlier replica tied up at Calais. The large lettering on the transom giving the ship's name and her place of construction is not authentic.



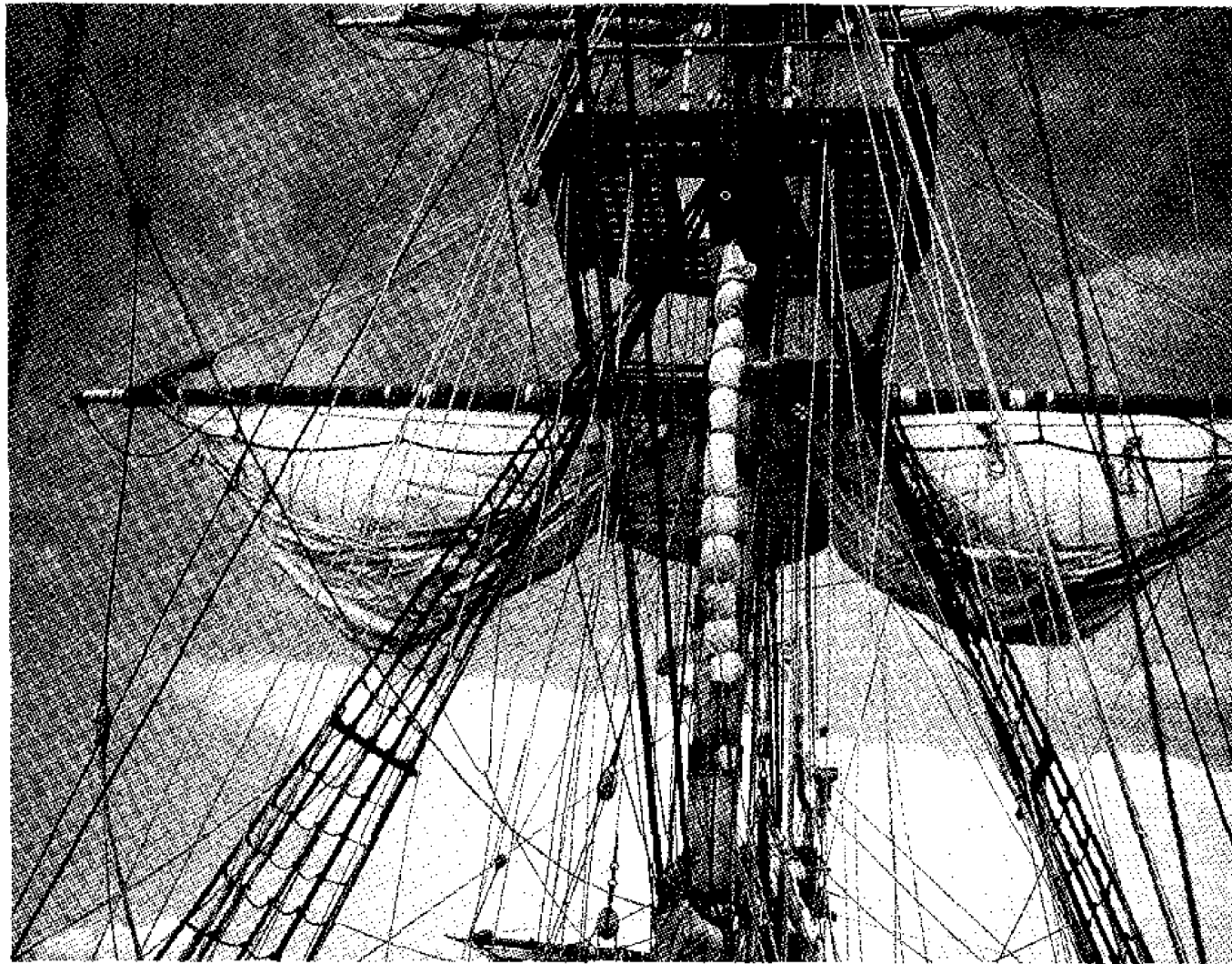
9. A close-up of the figurehead of the earlier replica; the original was described by Bligh as 'a pretty figurehead of a woman in riding habit'.



10. The 1979 replica under full sail in the Hauraki Gulf, New Zealand, in 1981.



11. A deck view forward on the starboard side of the more recent replica, showing the main shrouds.



12. The fore course of the 1979 replica, seen from the deck looking forward.



13. A detail view of the main lower mast head rigging on the 1979 replica.

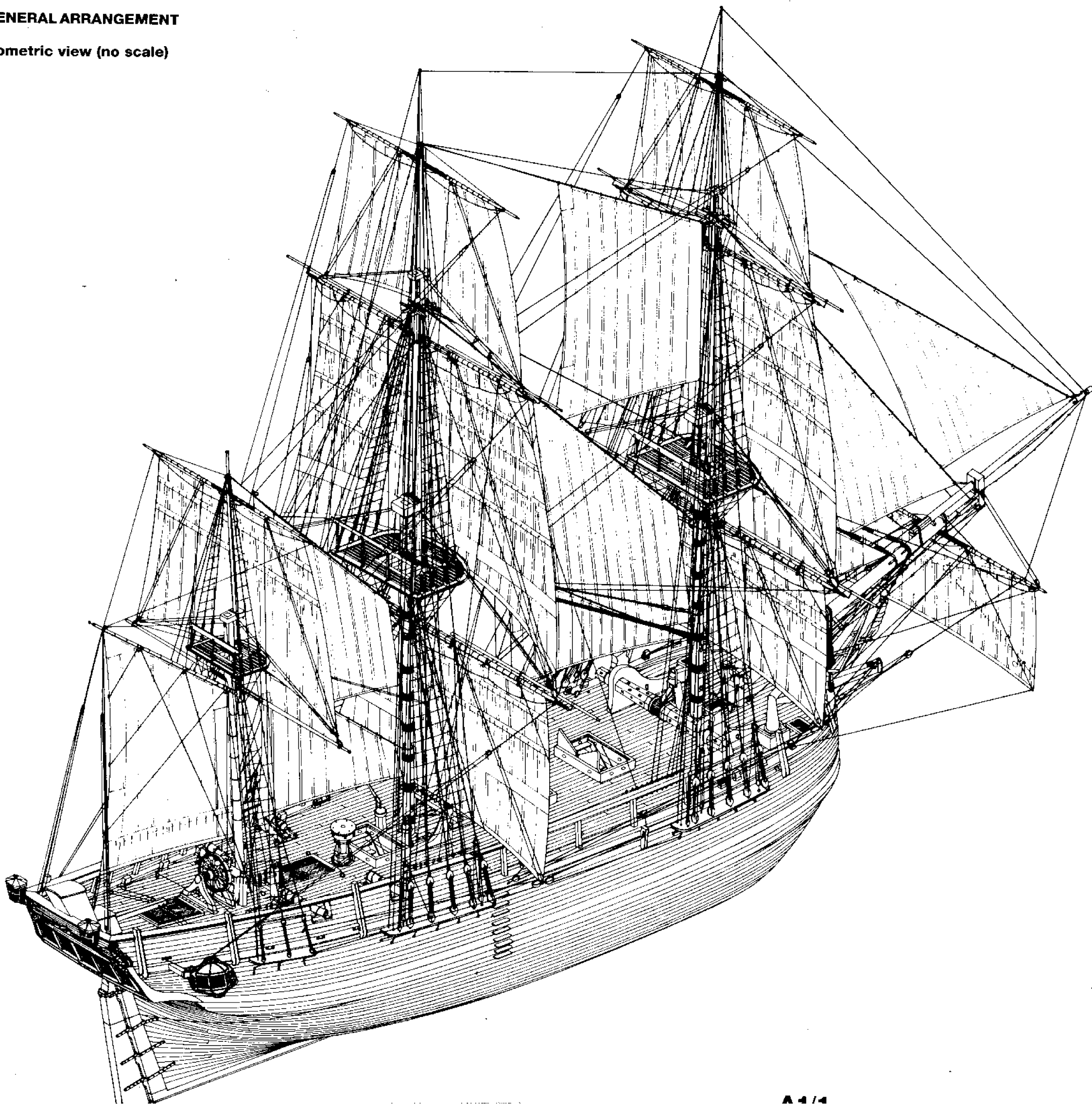
The Drawings

Large scale copies of the drawings reproduced in this book can be obtained from the author. Details from: John McKay, PO Box 752, Fort Langley, British Columbia, Canada V0X 1J0.

A General arrangement and lines

A1 GENERAL ARRANGEMENT

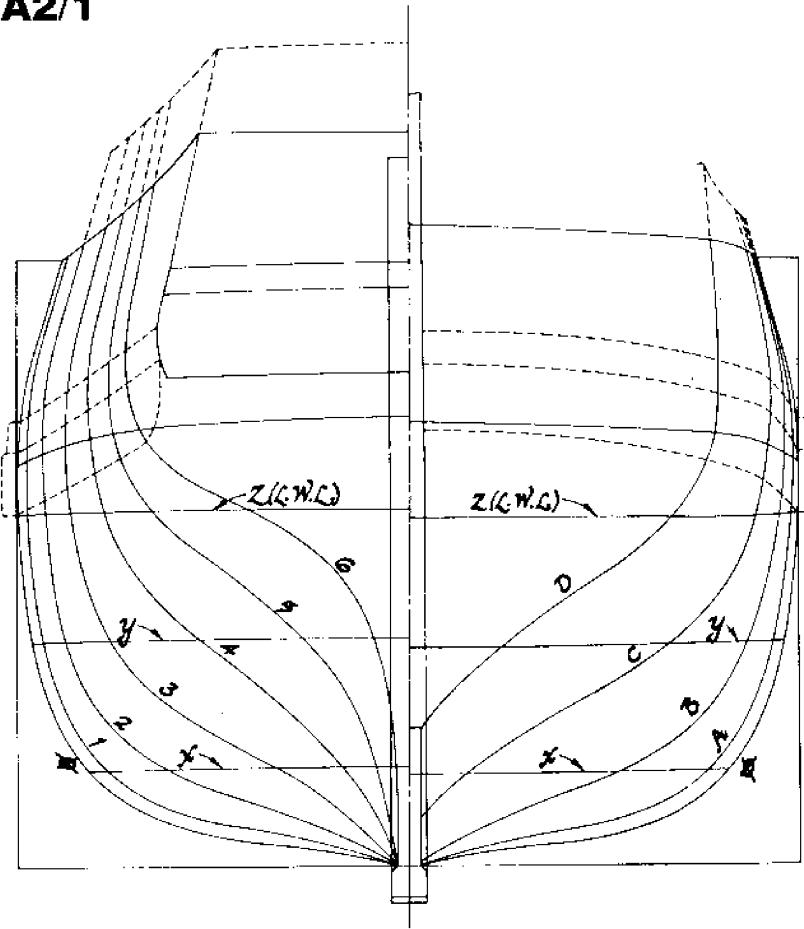
A1/1 Isometric view (no scale)



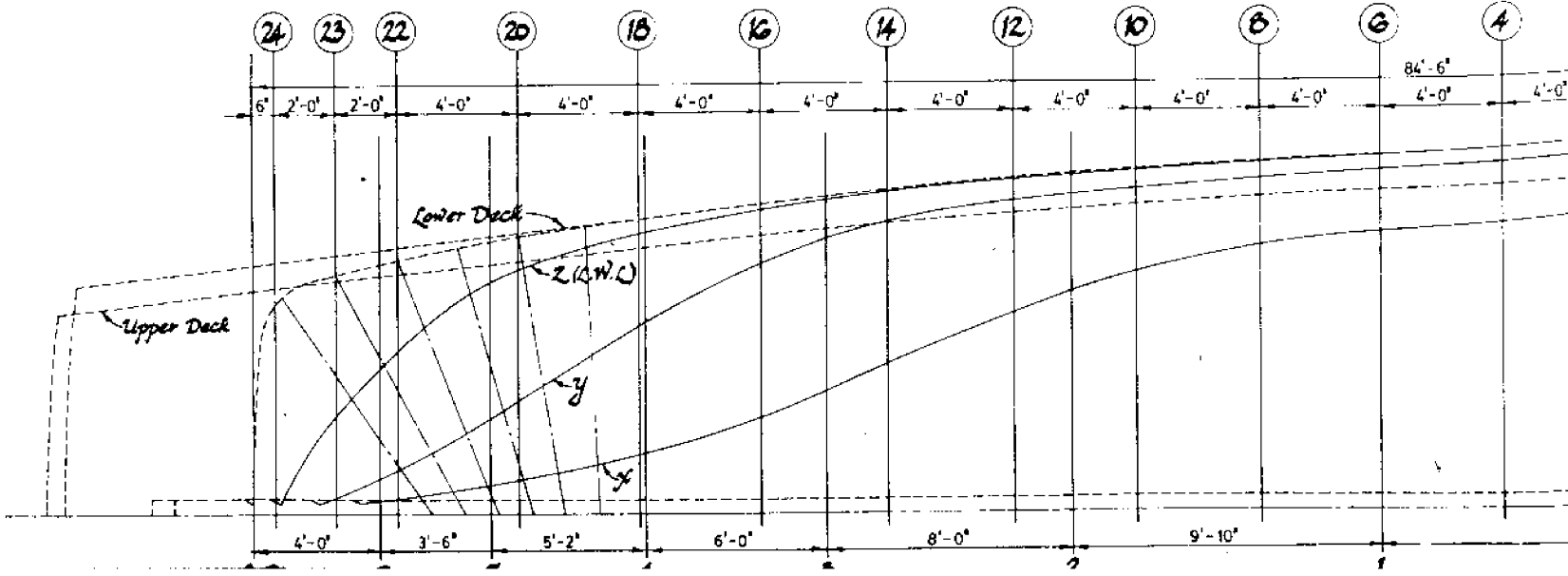
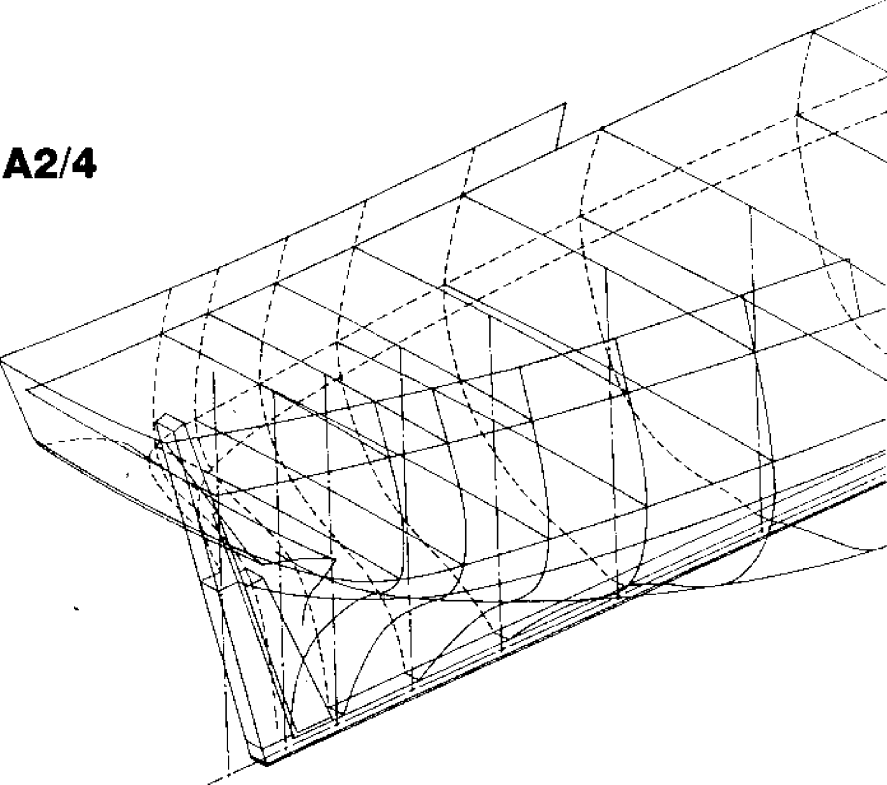
A General arrangement and lines

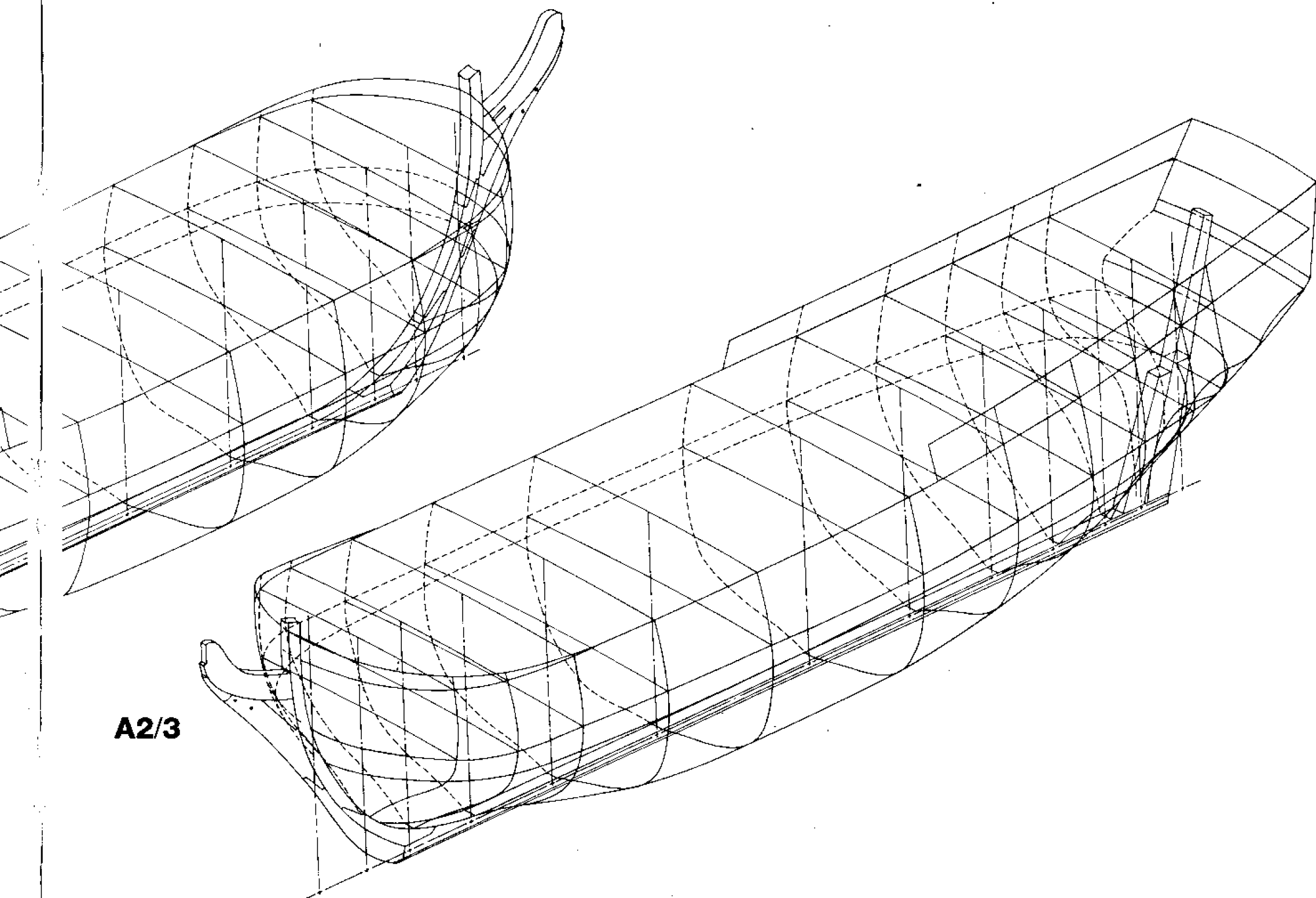
- A2 LINES
- A2/1 Body plan (1/96 scale)
- A2/2 Half breadth plan (1/96 scale)
- A2/3 Isometric of body lines – from forward, port (no scale)
- A2/4 Isometric of body lines – from aft, starboard (no scale)

A2/1

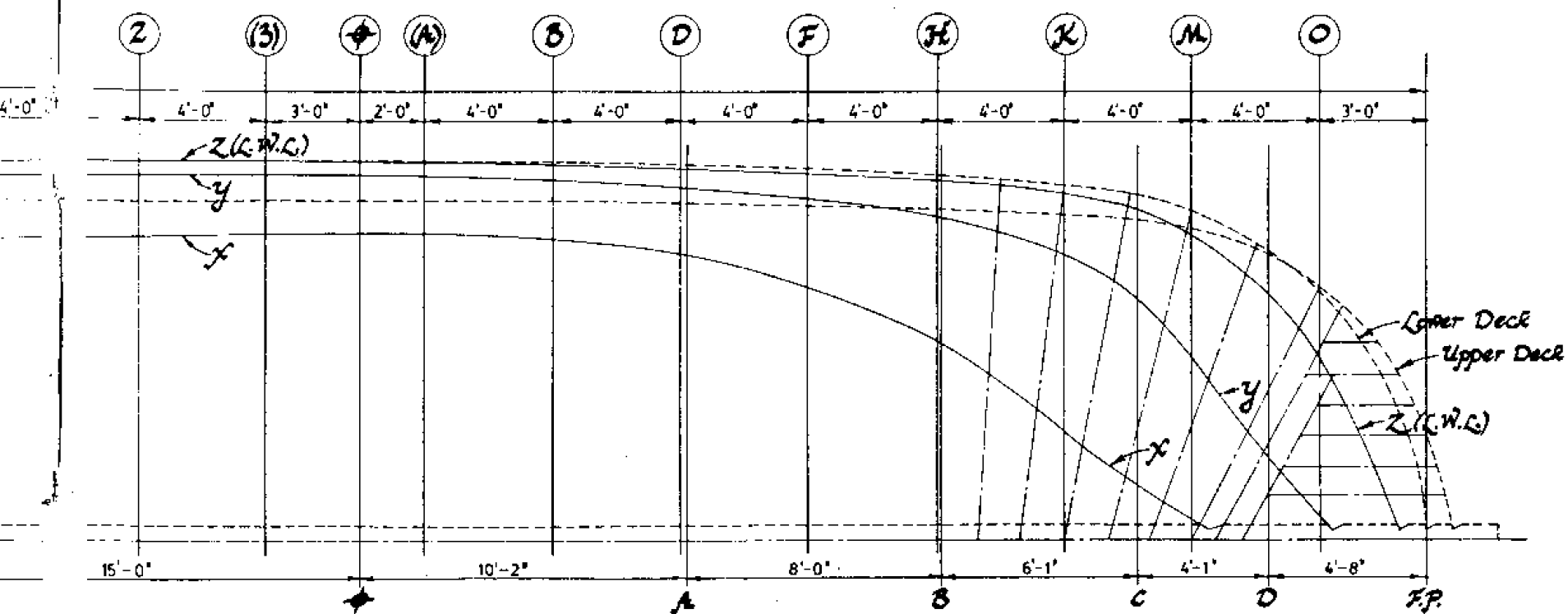


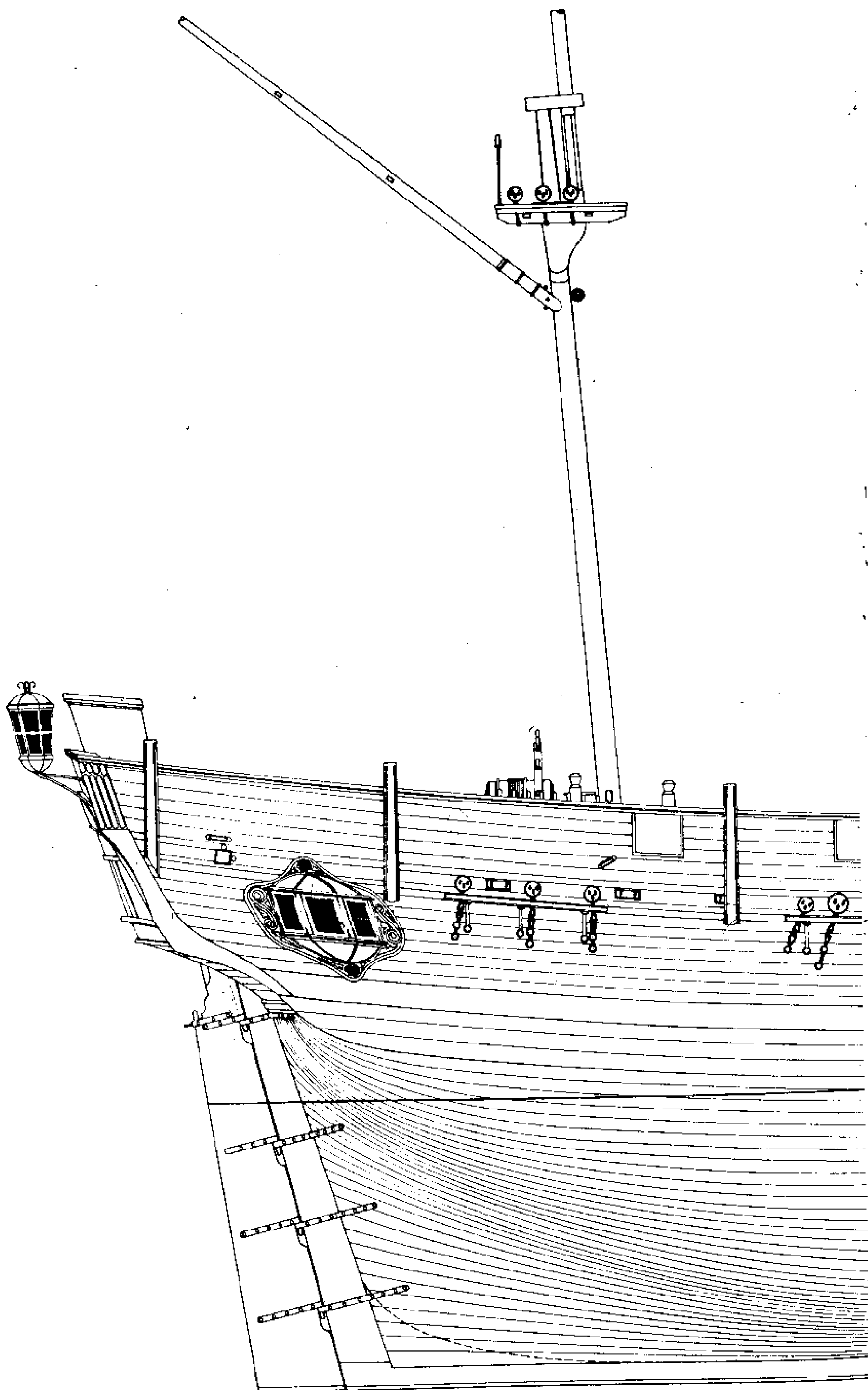
A2/4





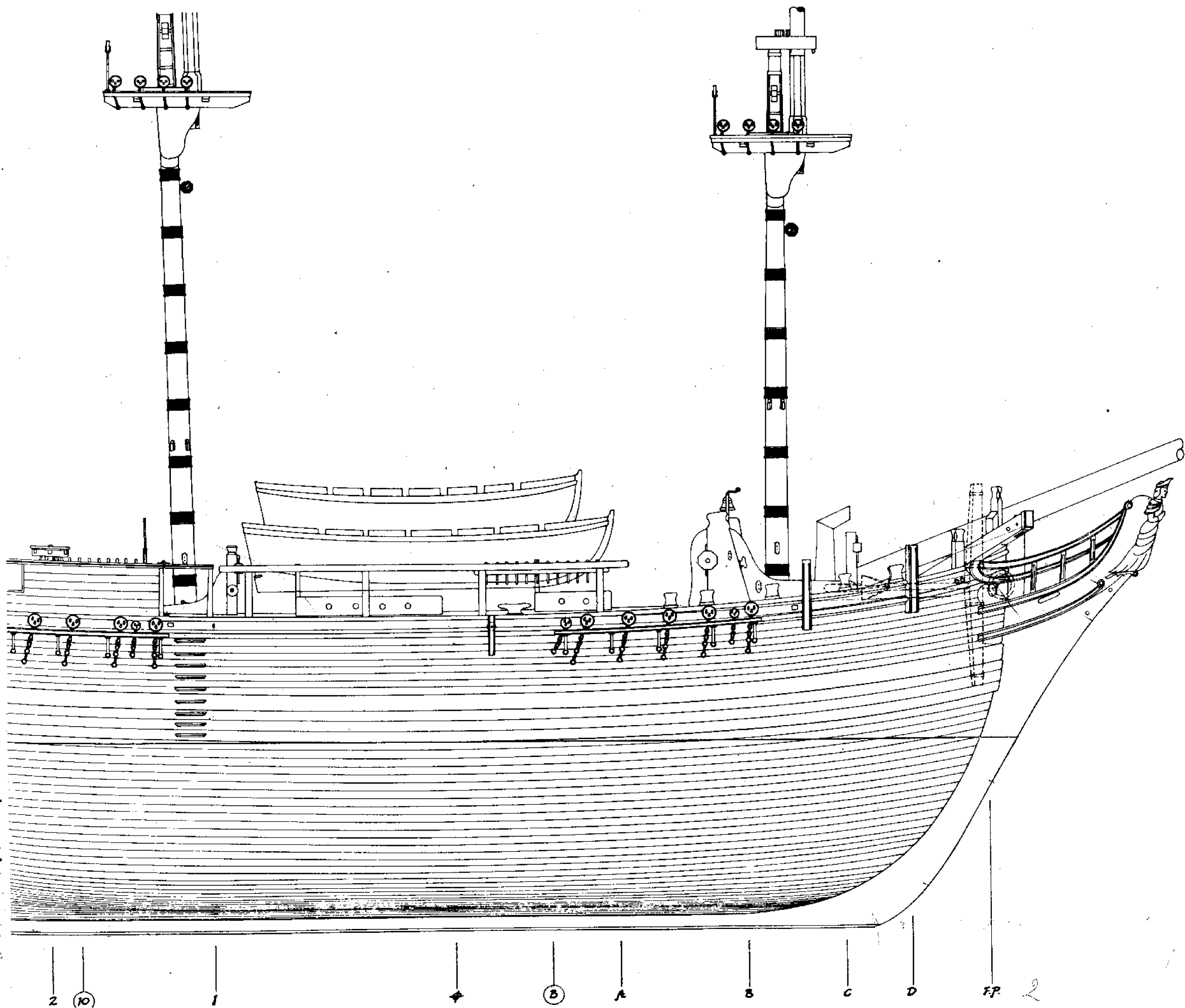
A2/3





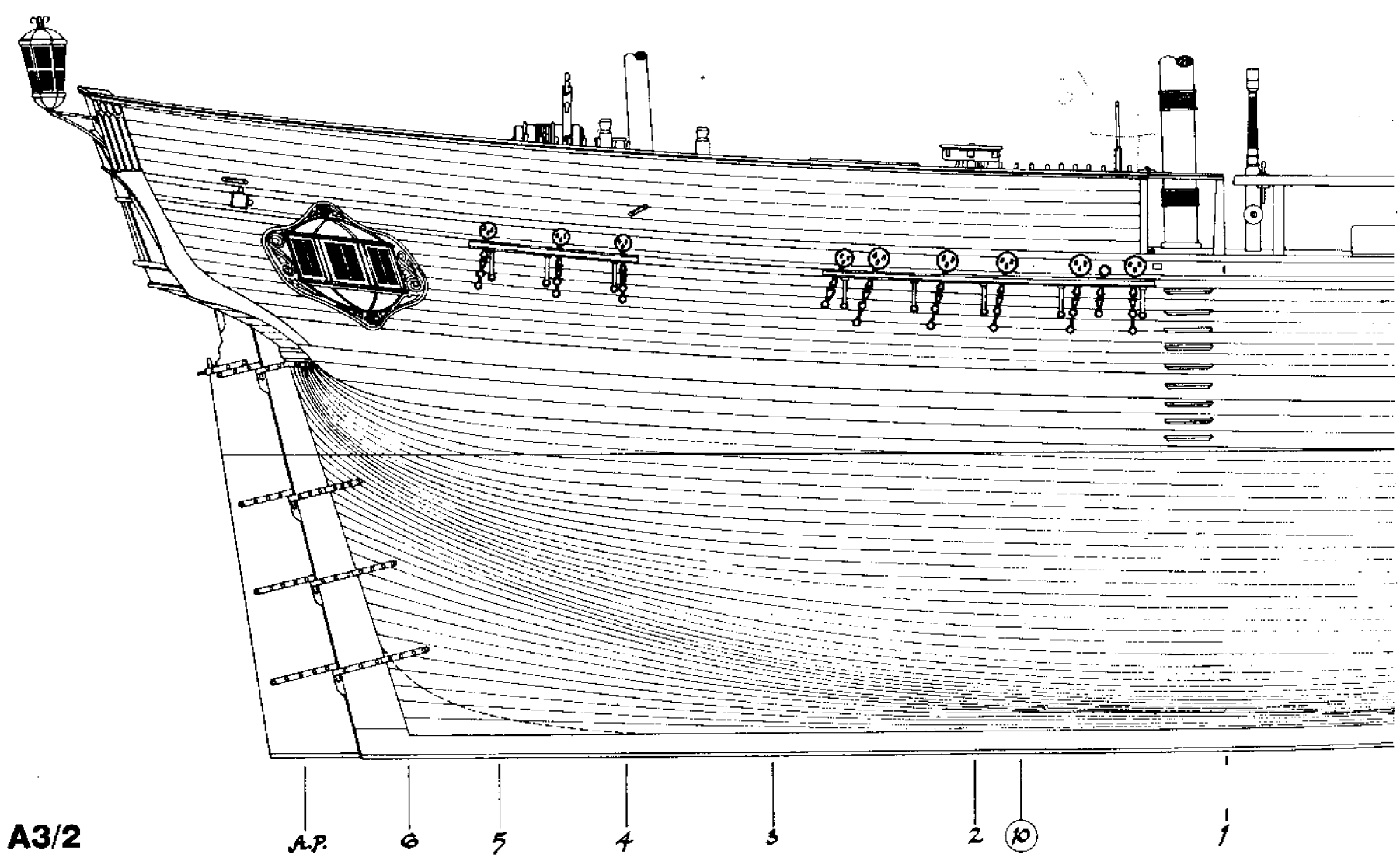
A3/1

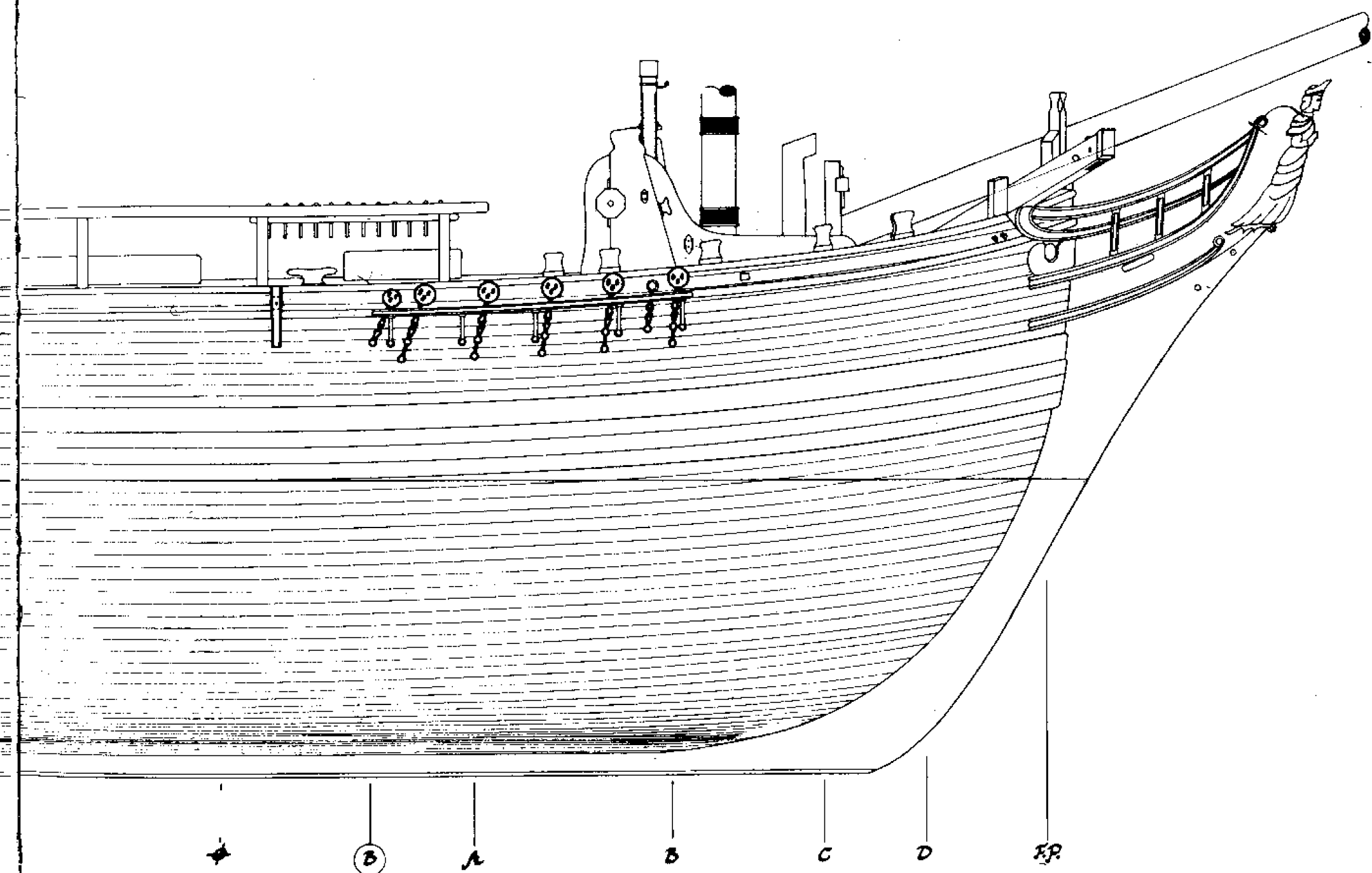
A.P. 6 5 4 3



A General arrangement and lines

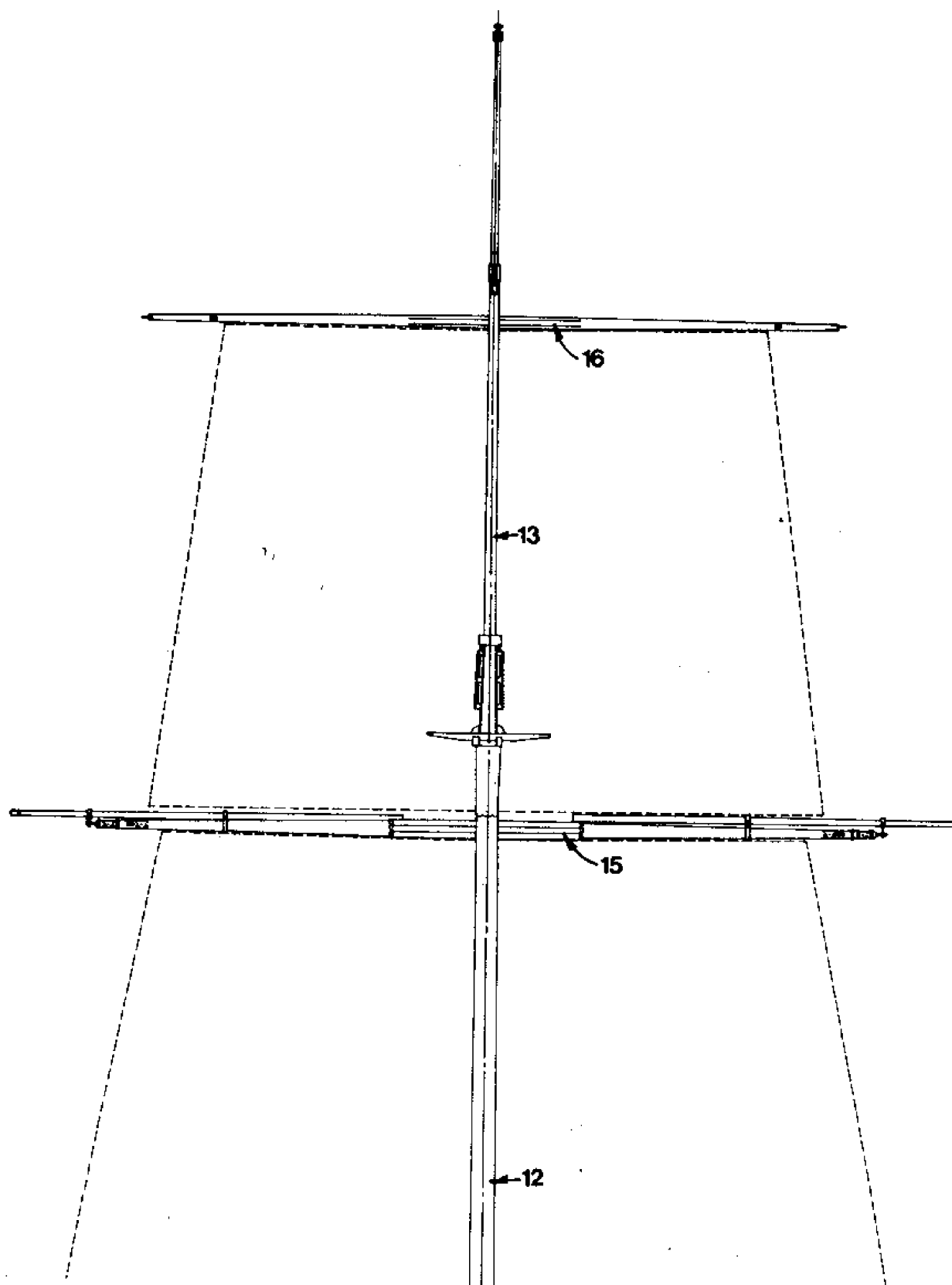
A3/2 Outboard profile of *Bethia*
(1/96 scale)

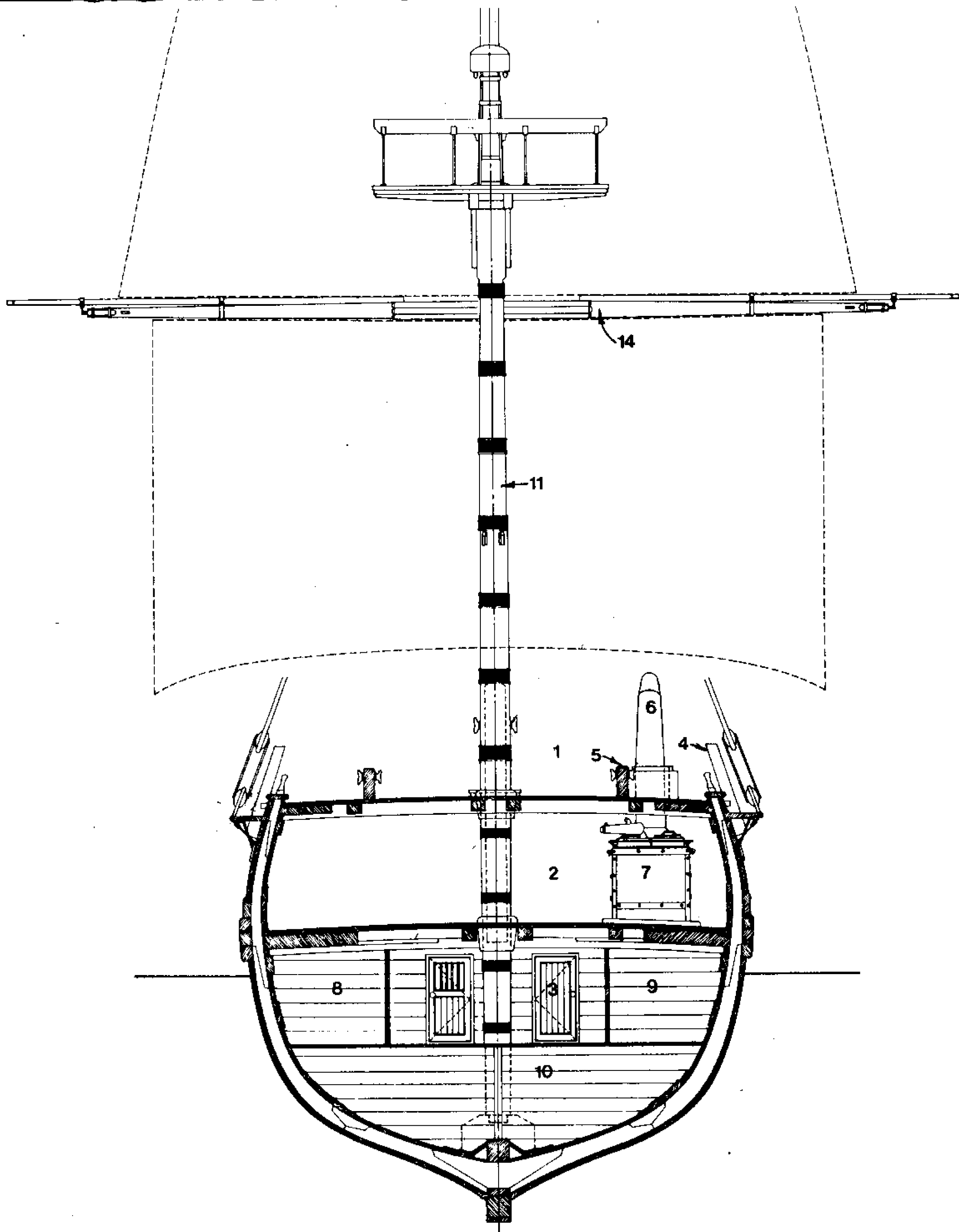




**A3/3 Cross section at 'B' (foremast)
looking forward (1/96 scale)**

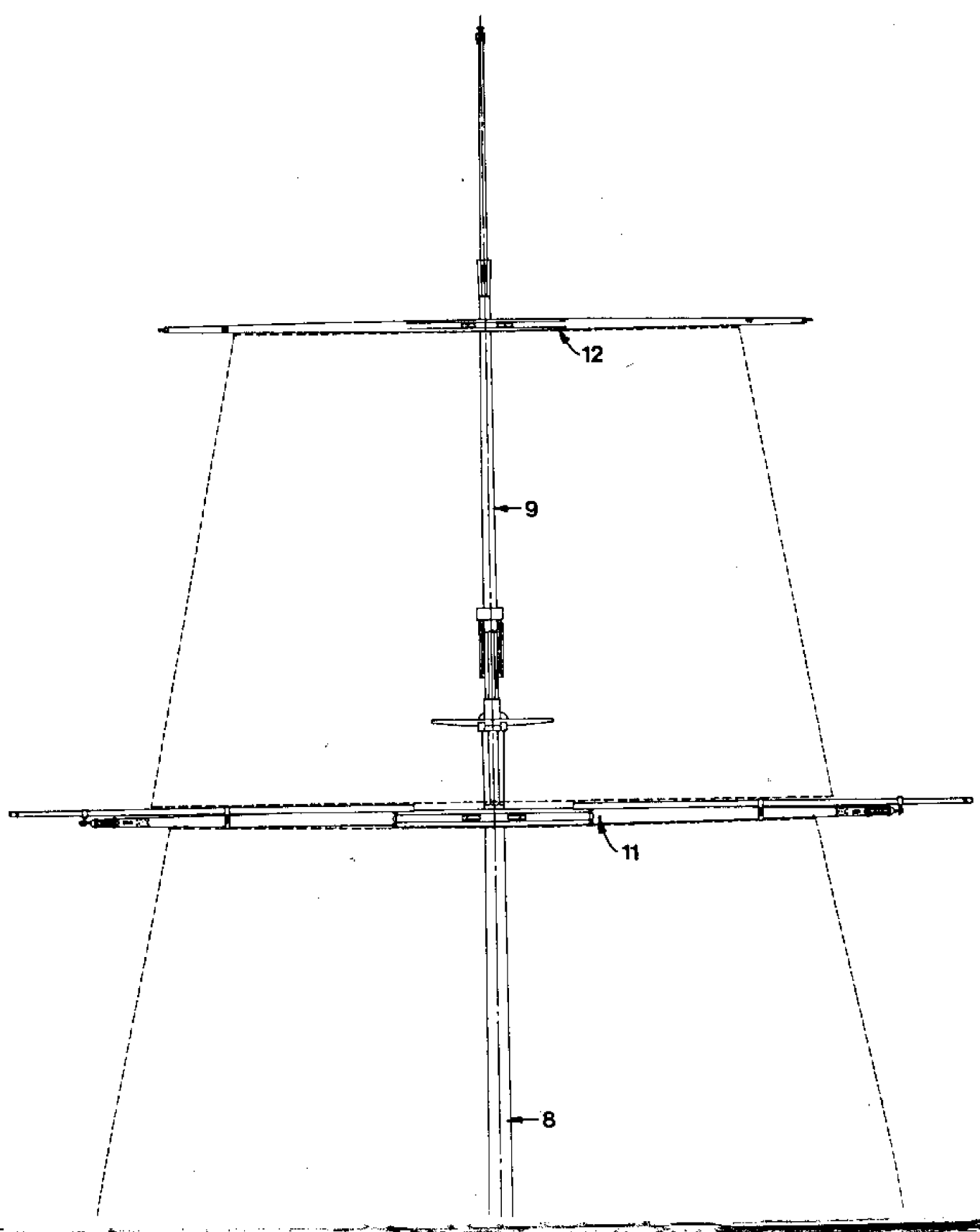
1. Forecastle
2. Lower deck
3. Hold
4. Swivel stanchion
5. Carrick bitts
6. Galley stove chimney
7. Galley stove
8. Boatswain's cabin
9. Carpenter's cabin
10. Sail room
11. Fore mast
12. Fore topmast
13. Fore topgallant mast
14. Fore yard
15. Fore topyard
16. Fore topgallant yard

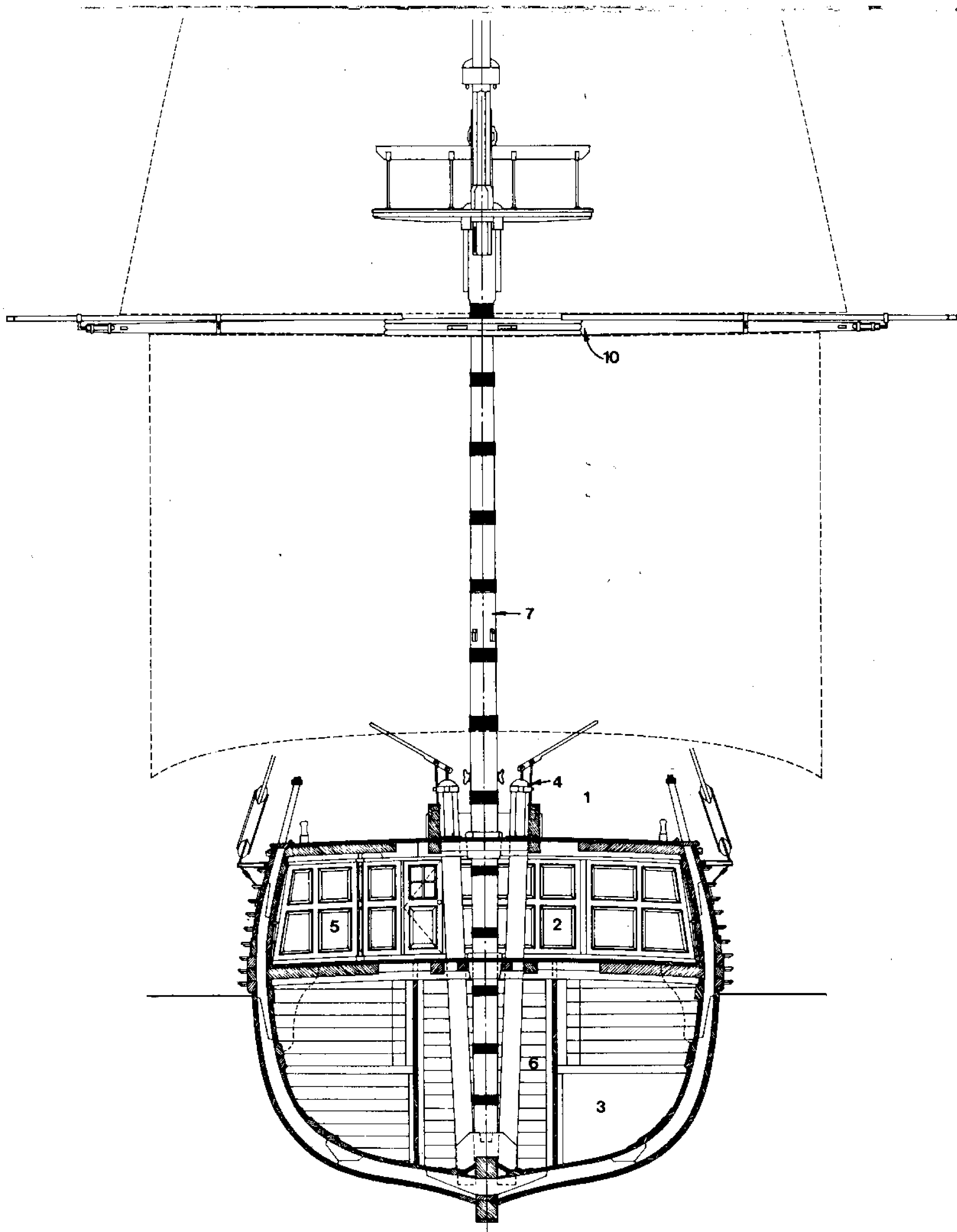


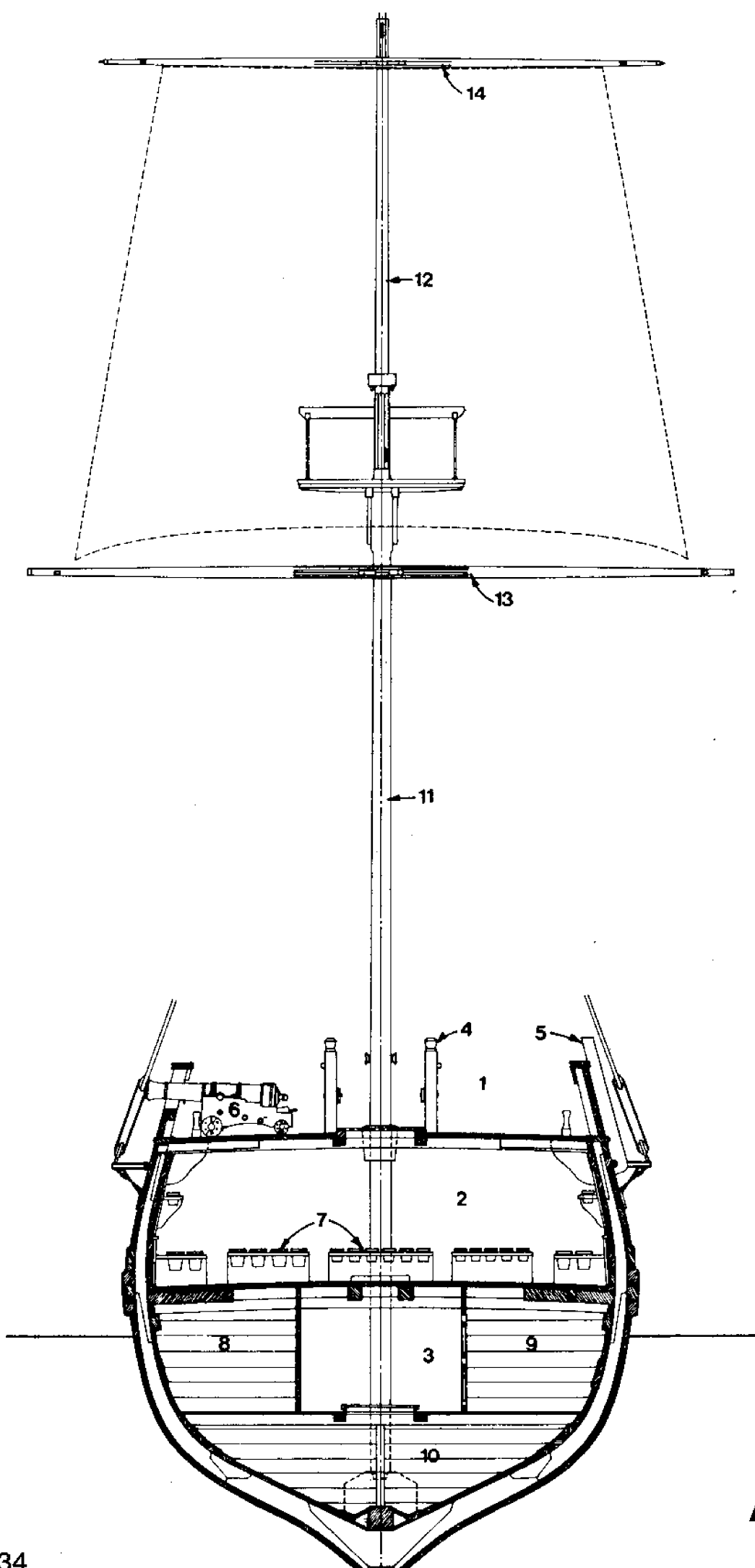


**A3/4 Cross section at '1' (mainmast)
looking aft (1/96 scale)**

- 1. Upper deck
- 2. Lower deck (Captain's dining cabin)
- 3. Hold
- 4. Elm tree pumps
- 5. Pantry
- 6. Hold well or pump well
- 7. Main mast
- 8. Main topmast
- 9. Main topgallant mast
- 10. Main yard
- 11. Main topyard
- 12. Main topgallant yard





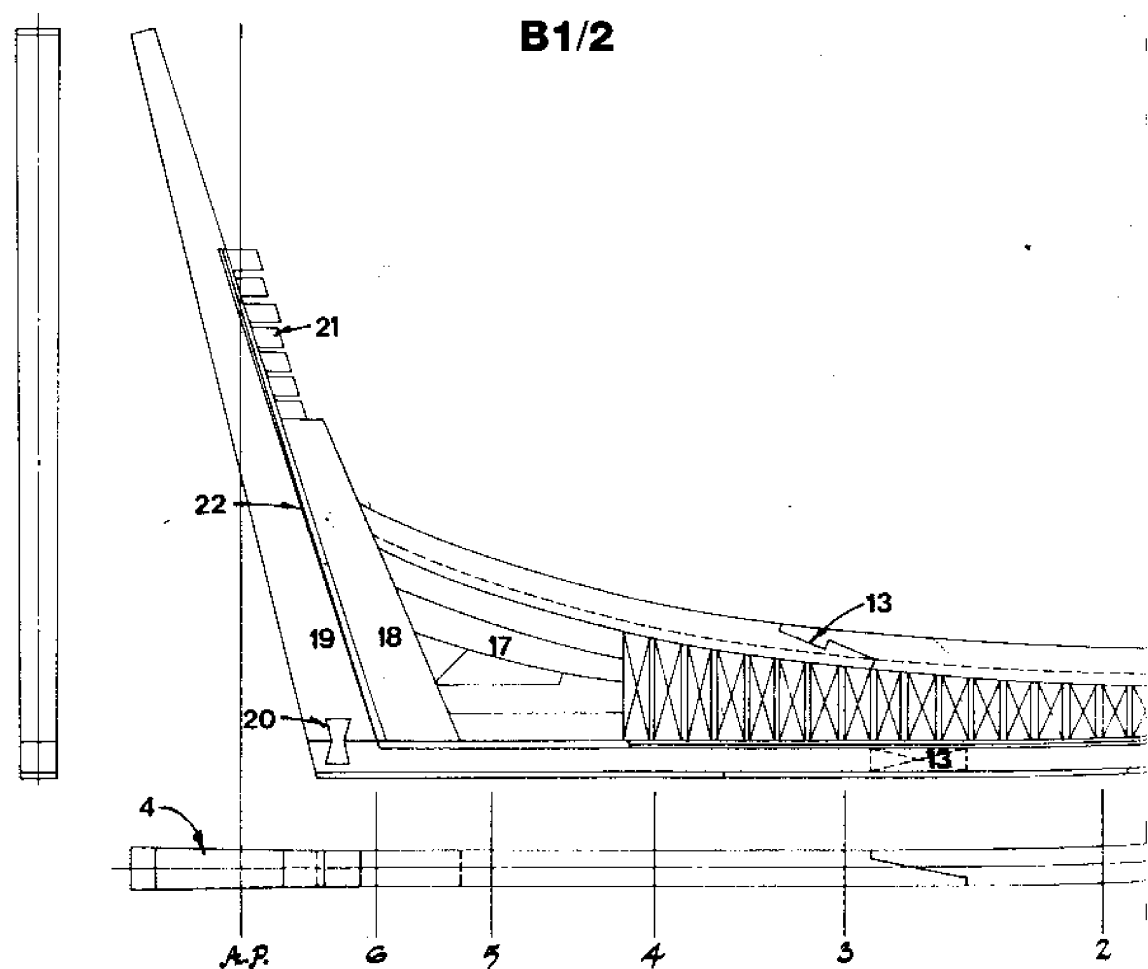


A3/5 Cross section at '3' (mizzen mast) looking aft (1/96 scale)

1. Quarter deck
2. Lower deck (garden)
3. Hold
4. Mizzen topsail sheet bitts
5. Swivel stanchion
6. 4-pounder gun
7. Pot racks
8. Gunner's cabin
9. Surgeon's cabin
10. Fish room
11. Mizzen mast
12. Mizzen topmast
13. Crossjack yard
14. Mizzen topyard

B1/4

B1/2



B1/1

B Hull construction

B1 KEEL

B1/1 Keel plan (1/96 scale)

1. Cutwater
2. Stern
3. Keel (note scarphs)
4. Stern post

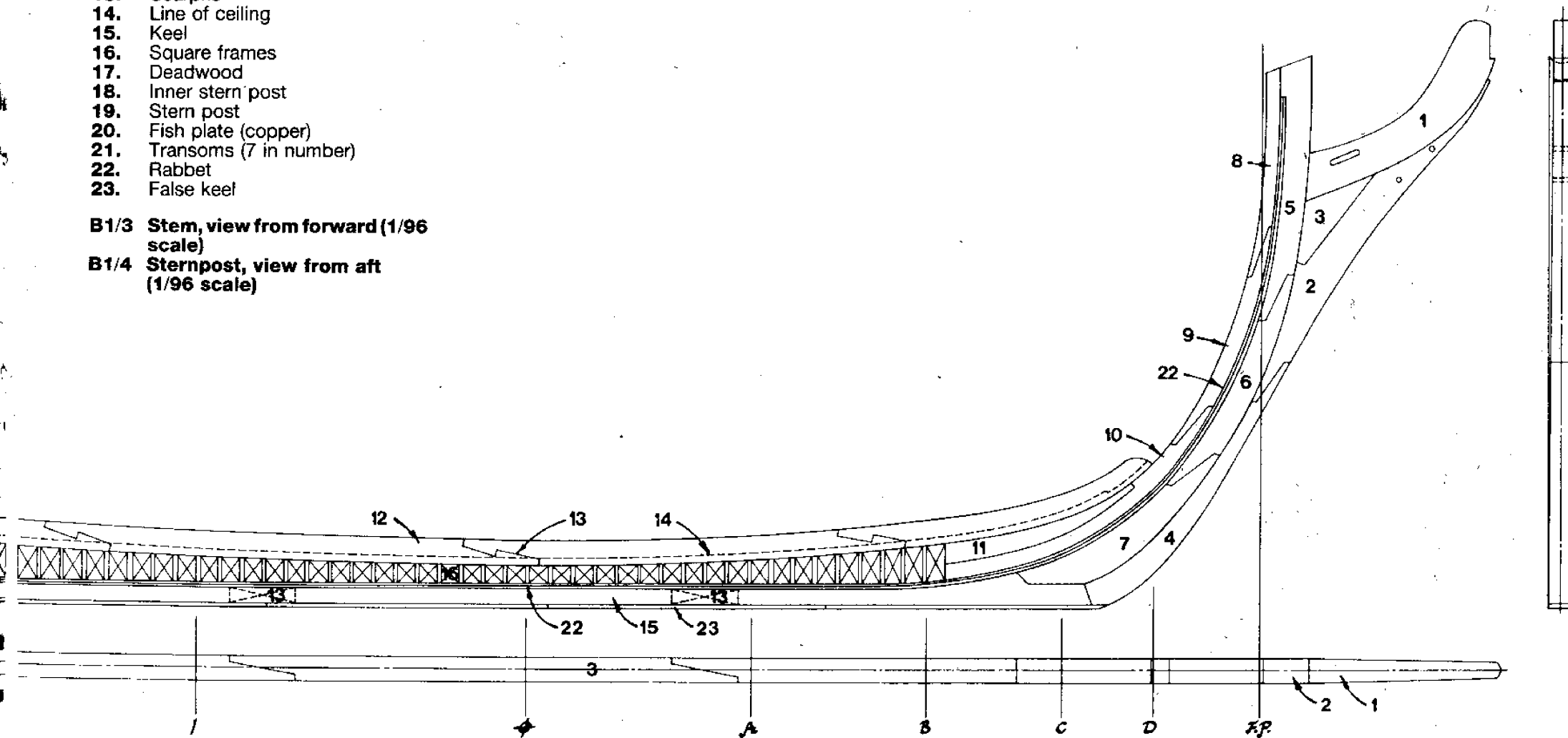
B1/2 Keel elevation (1/96 scale)

1. Gammoning piece
2. Lacing or main piece
3. Chock piece
4. Gripe
5. Upper piece of stem
6. Middle piece of stem
7. Lower piece of stem
8. Upper piece of apron
9. Middle piece of apron
10. Lower piece of apron
11. Deadwood
12. Keelson
13. Scarphs
14. Line of ceiling
15. Keel
16. Square frames
17. Deadwood
18. Inner stern post
19. Stern post
20. Fish plate (copper)
21. Transoms (7 in number)
22. Rabbet
23. False keel

B1/3 Stem, view from forward (1/96 scale)

B1/4 Sternpost, view from aft (1/96 scale)

B1/3



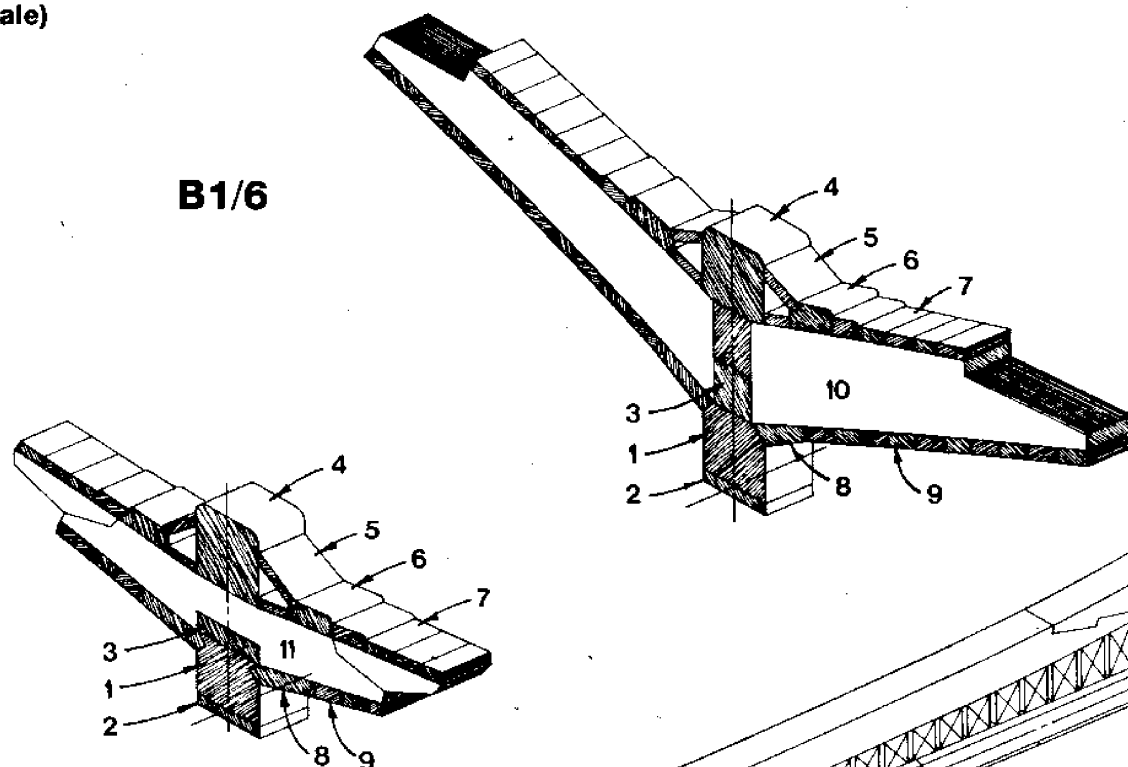
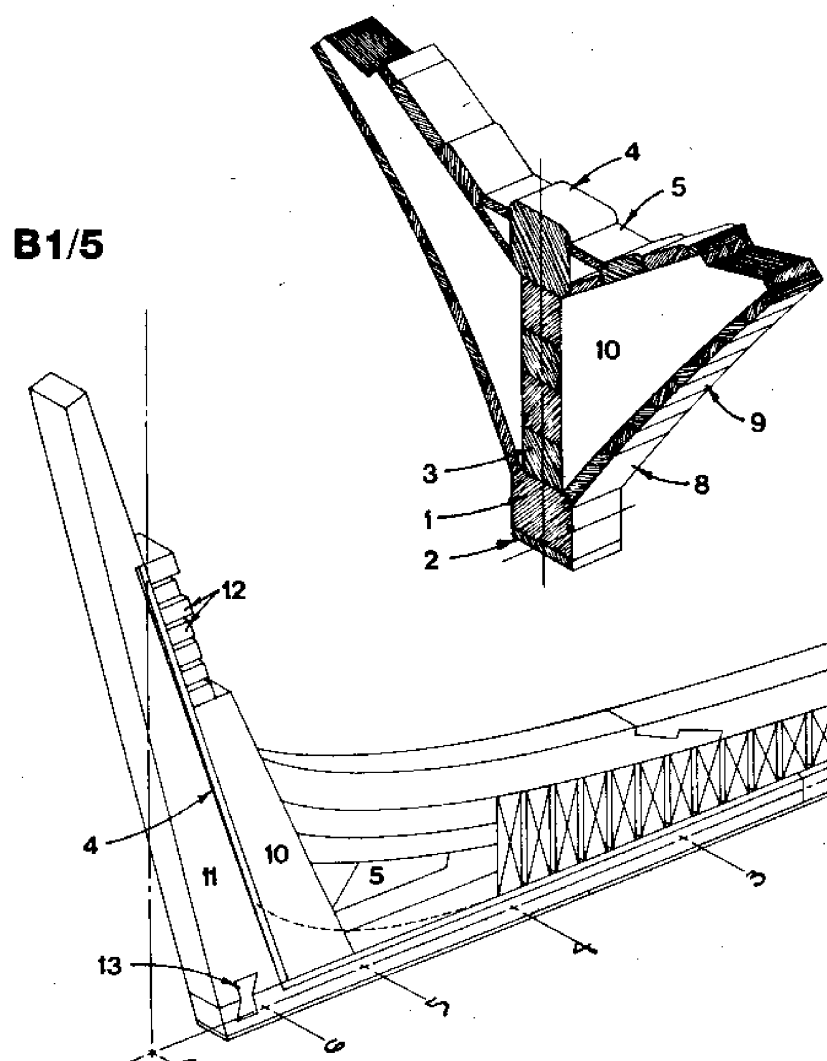
B Hull construction

B1/5 Isometric showing keel construction (no scale)

1. Cutwater
2. Stern
3. Apron
4. Rabbet
5. Deadwood
6. False keel
7. Keel
8. Square frames
9. Keelson
10. Inner stern post
11. Stern post
12. Transoms
13. Fish plate

B1/6 Keel detail at fore deadwood, keel detail at square frame, keel detail at aft deadwood (no scale)

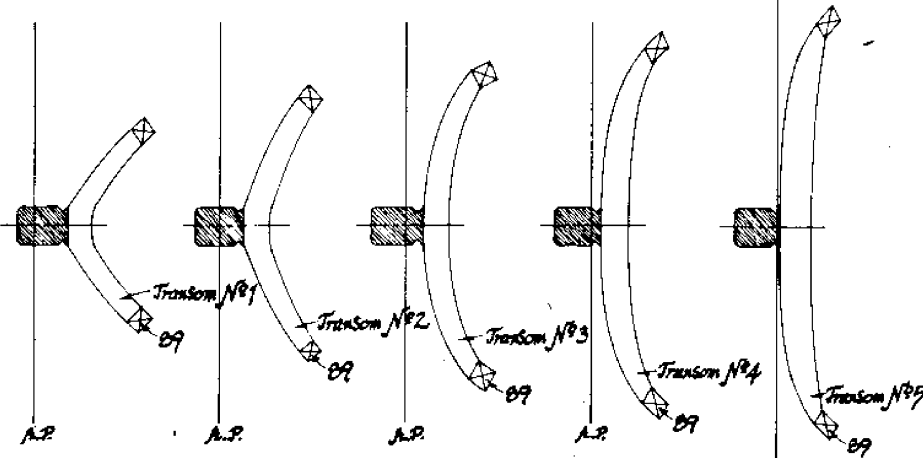
1. Keel
2. False keel
3. Deadwood
4. Keelson
5. Limber board
6. Limber strake
7. Ceiling
8. Garboard strake
9. External planking
10. Cant frame
11. Square frame

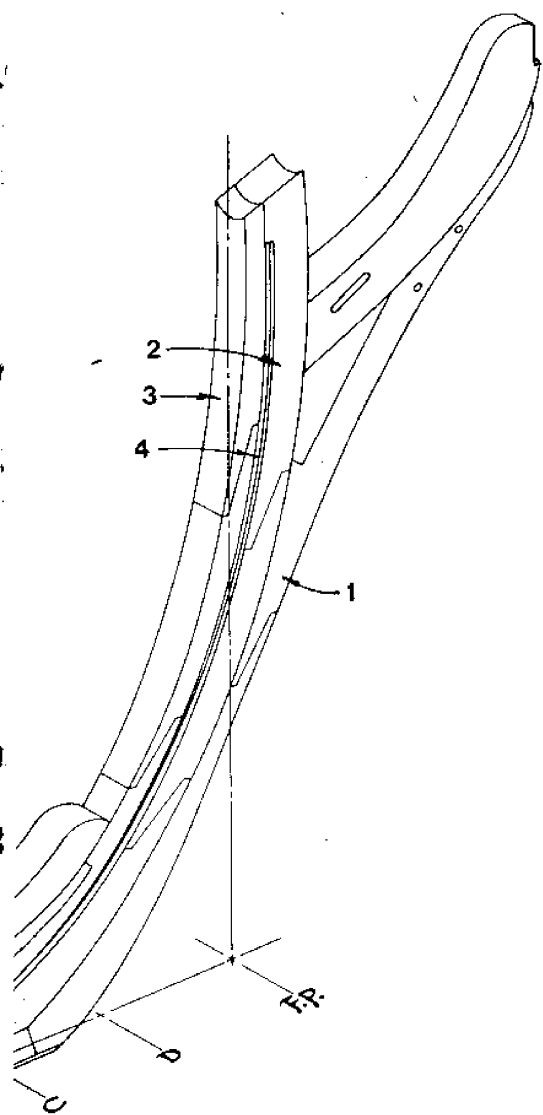


B3 STERN

B3/2 Stern transoms - 1 to 7 (1/96 scale)

B2/2



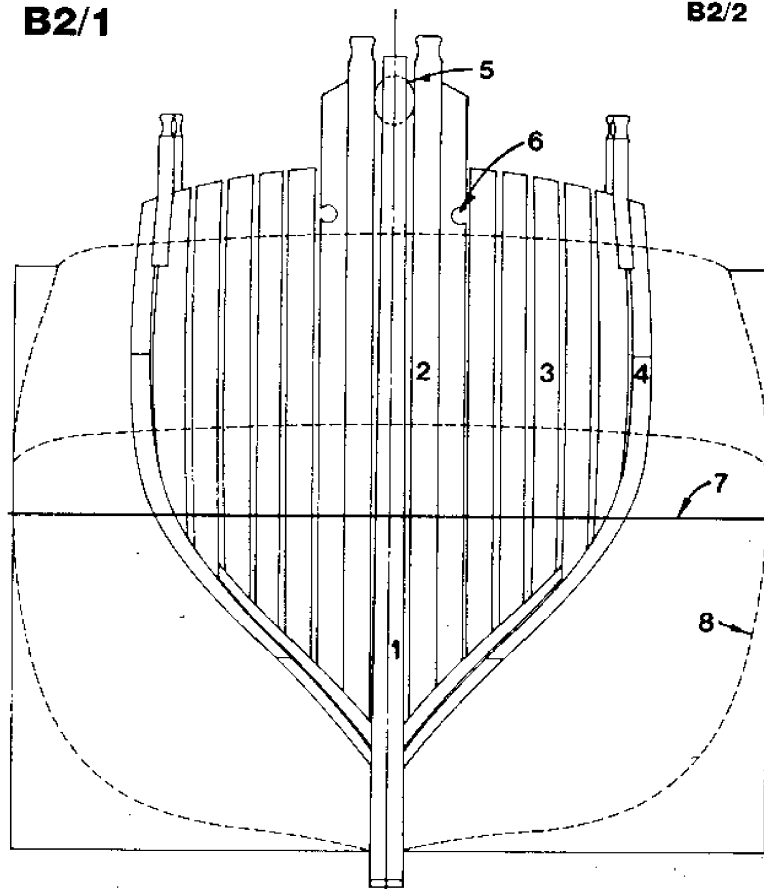


B2 BOW

B2/1 Bow framing (1/96 scale)

1. Stern
2. Knighthead
3. Hawse frames

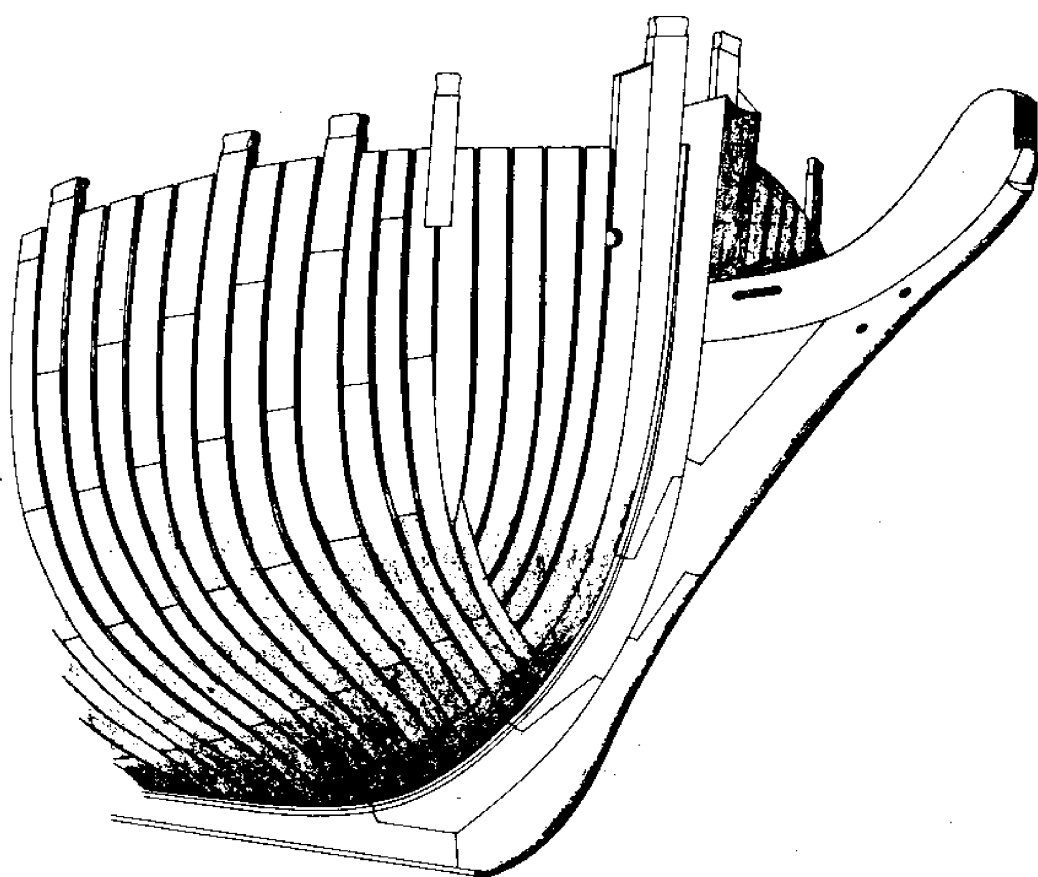
B2/1



4. Cant frame
5. Bowsprit
6. Hawse hole
7. Load waterline
8. Profile at dead flat

B2/2 Sketch of bow framing (no scale)

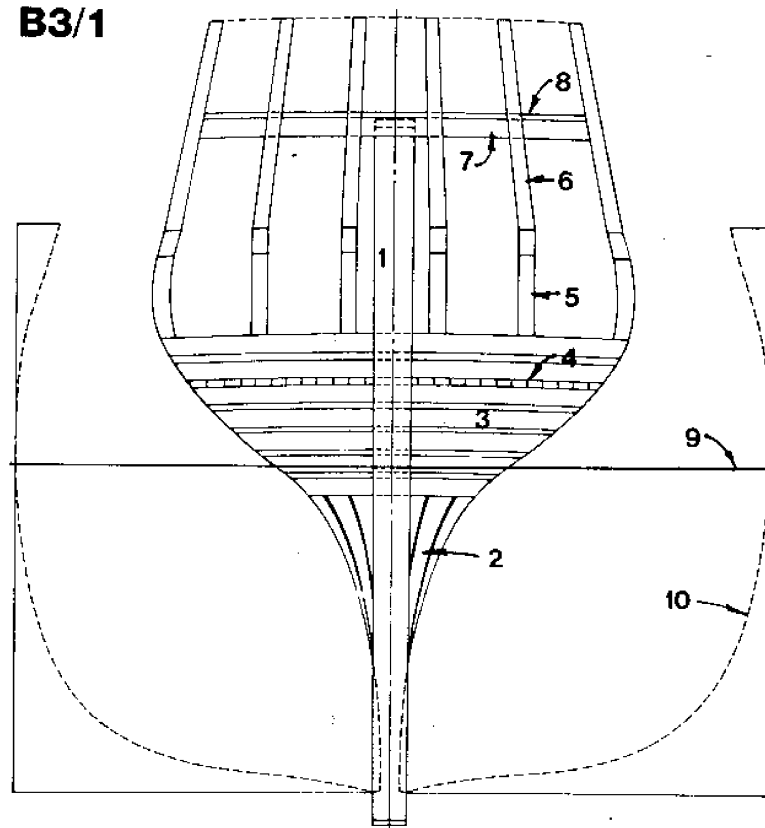
B2/2



B3/1 Stern framing (1/96 scale)

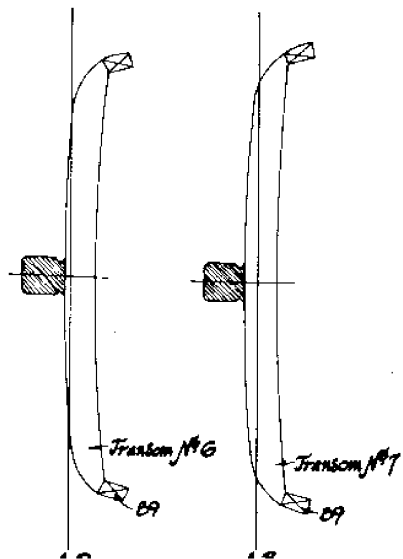
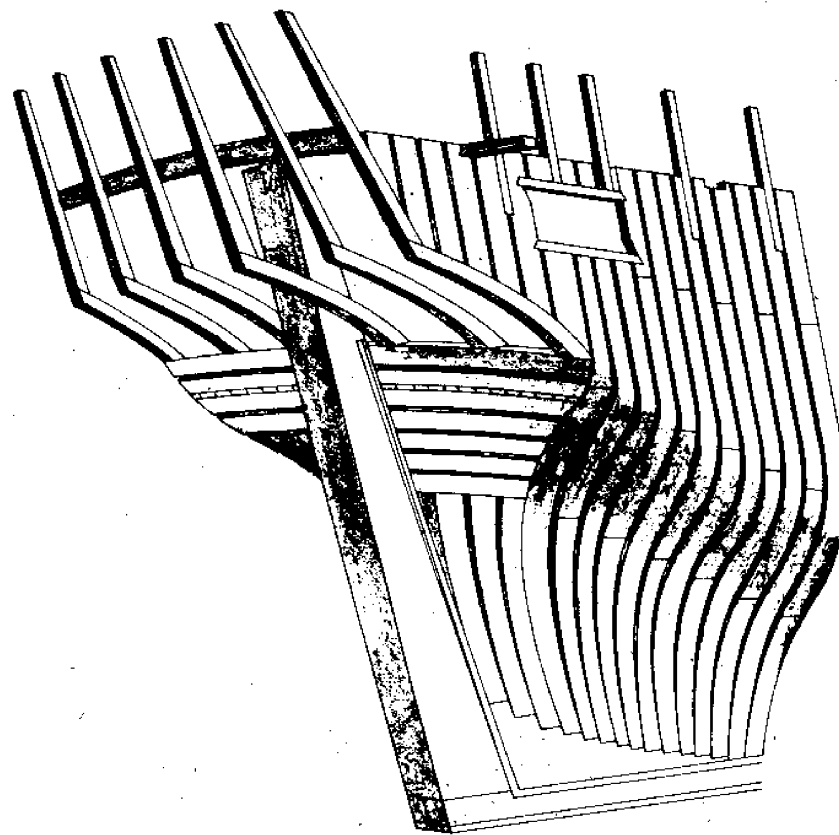
1. Stern post
2. Fashion pieces
3. Transoms
4. Lower deck
5. Counter timber
6. Stern timber
7. Deck transom
8. Upper deck
9. Load waterline
10. Profile at dead flat

B3/1



B3/3 Sketch of stern framing (no scale)

B3/3



B Hull construction

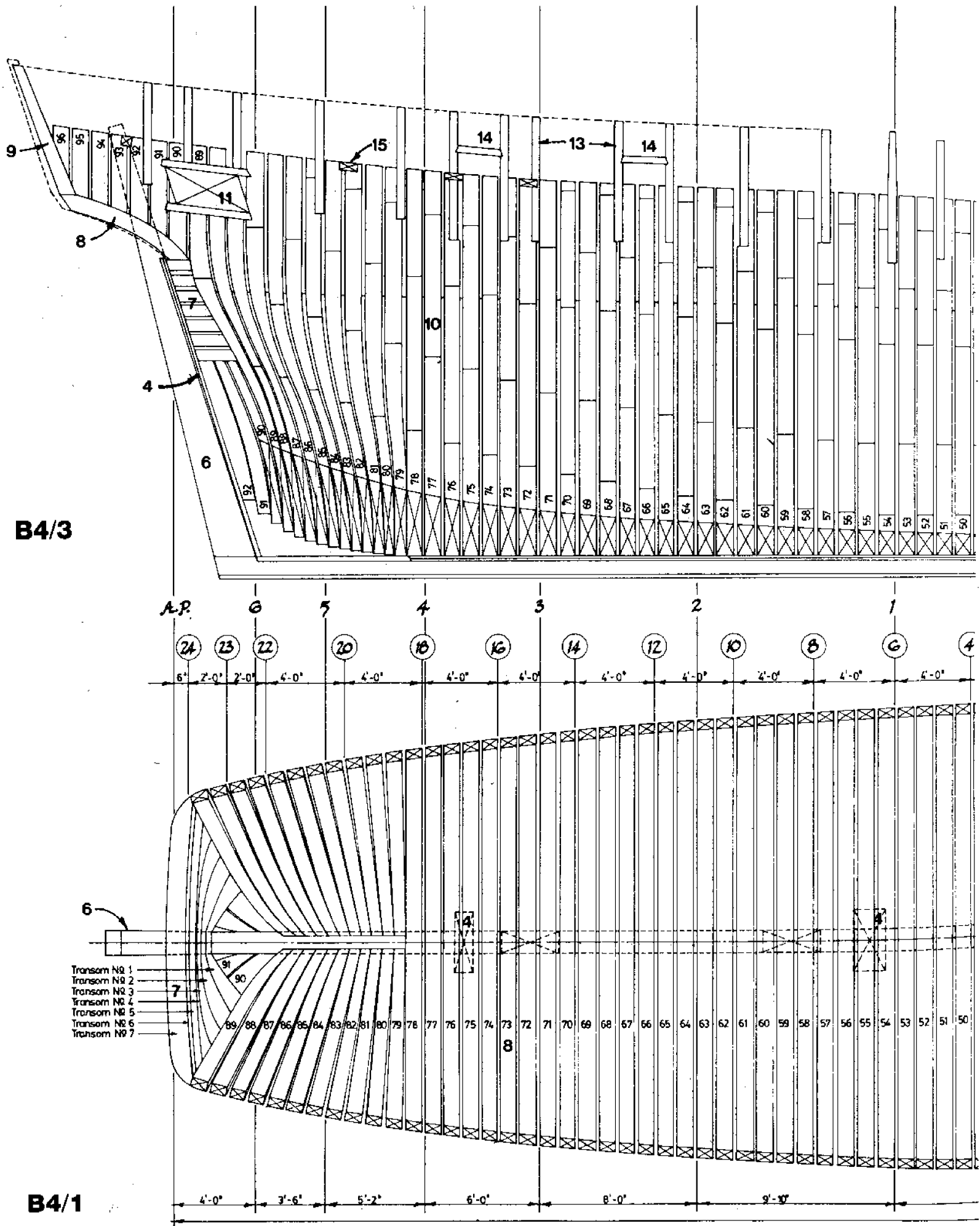
B4 FRAMES

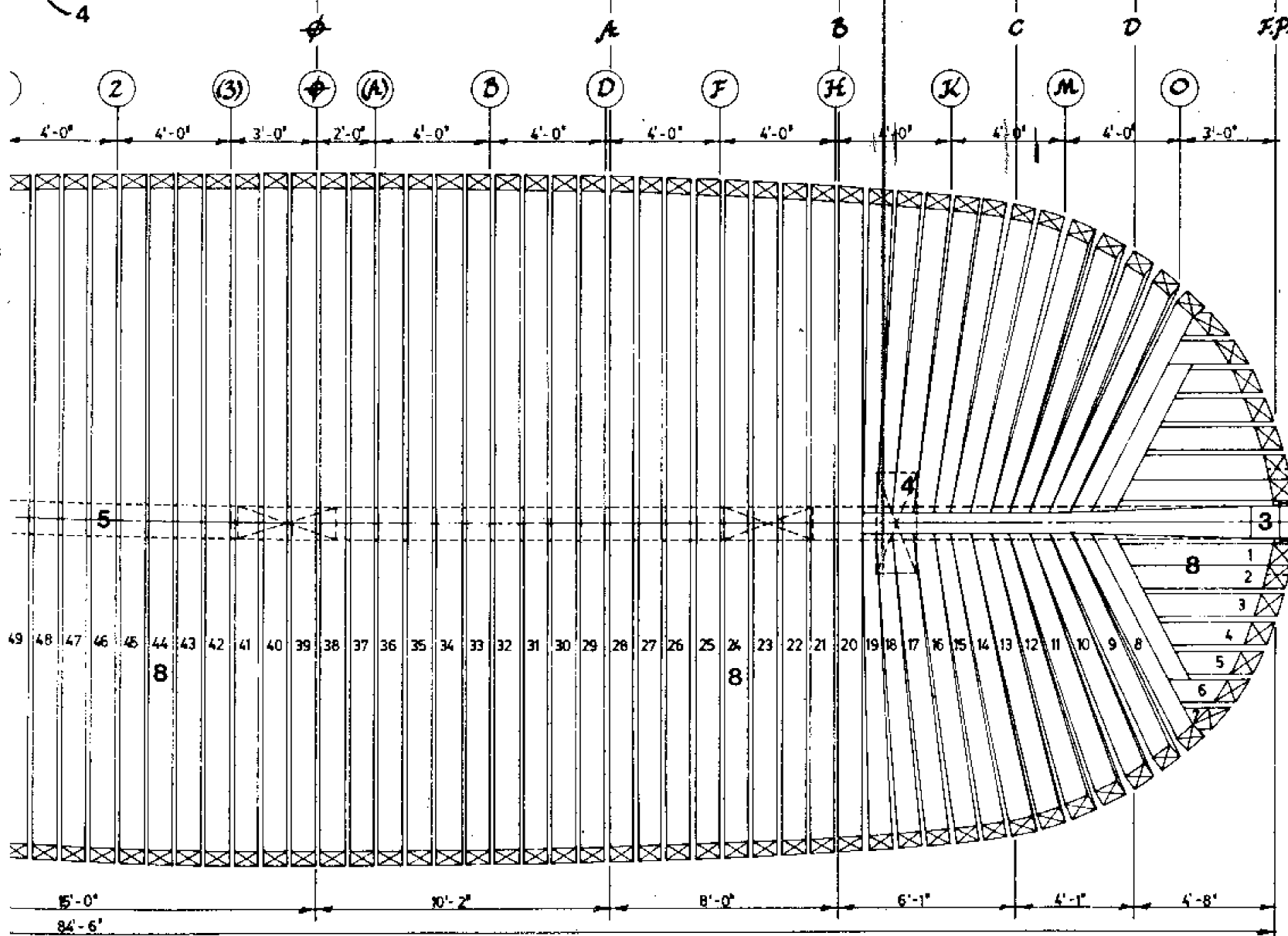
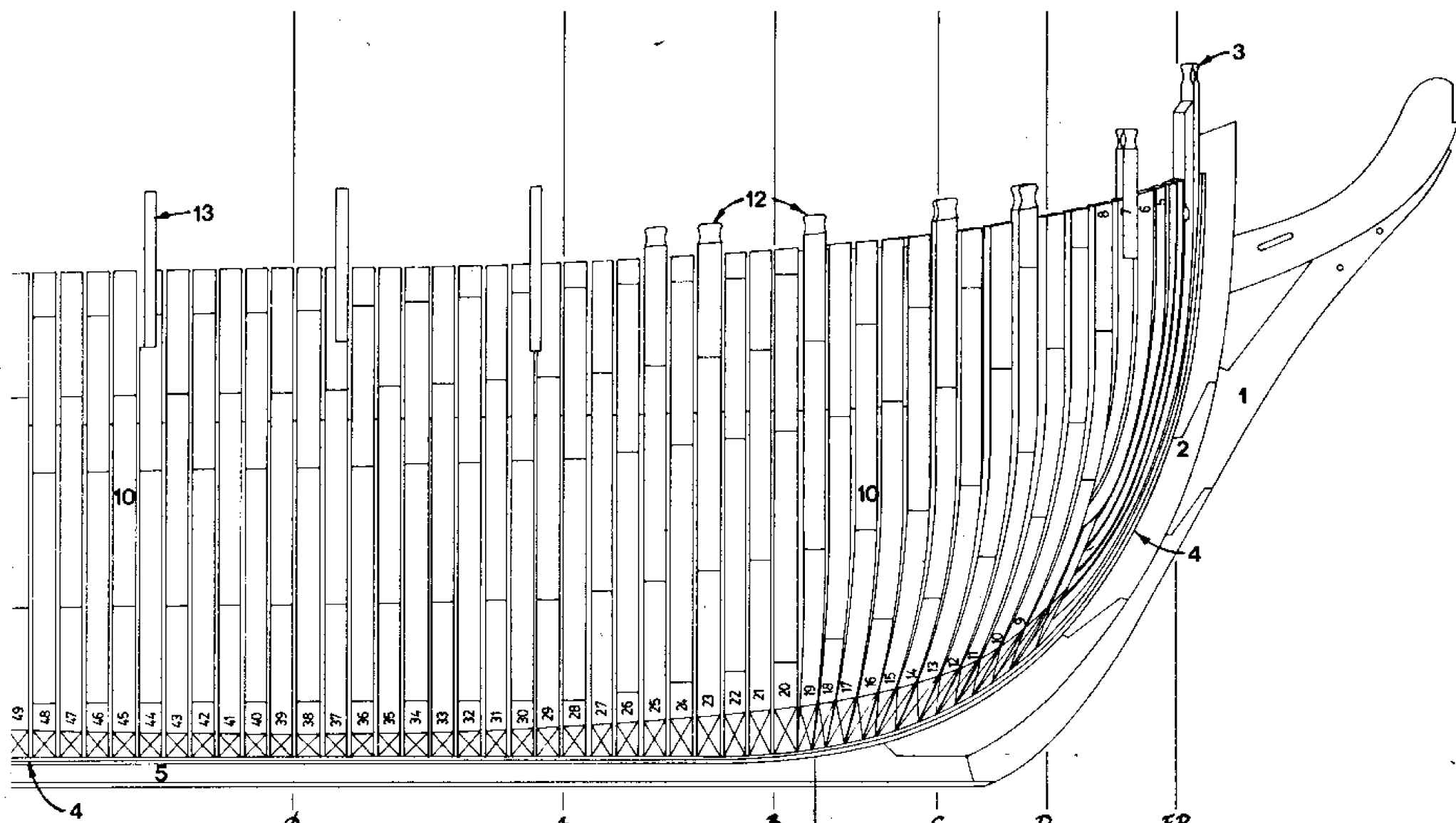
- B4/1 Framing plan (1/96 scale)**
- 1. Cutwater
 - 2. Stem
 - 3. Apron
 - 4. Mast step
 - 5. Keelson
 - 6. Stern post
 - 7. Wing transom and transoms – seven in number
 - 8. Frames:
 - numbers 1 to 7 – hawse pieces
 - numbers 8 to 19 – cant frames (bow)
 - numbers 20 to 78 – square frames
 - numbers 79 to 89 – cant frames (stern)
 - numbers 90 to 92 – fashion and filling pieces

- B4/2 Room and space detail (1/32 scale)**

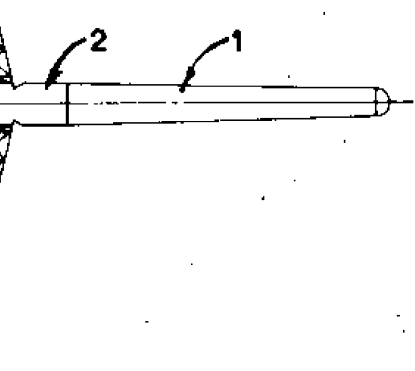
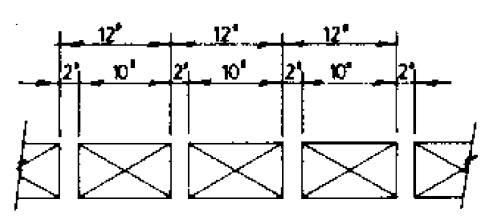
- B4/3 Outboard profile: framing (1/96 scale)**

- 1. Cutwater
- 2. Stem
- 3. Knighthead
- 4. Rabbet
- 5. Keel
- 6. Stern post
- 7. Transoms
- 8. Counter timber
- 9. Stern timber
- 10. Frames
- 11. Opening for quarter gallery
- 12. Timber heads
- 13. Stanchion
- 14. Gunport
- 15. Air scuttle



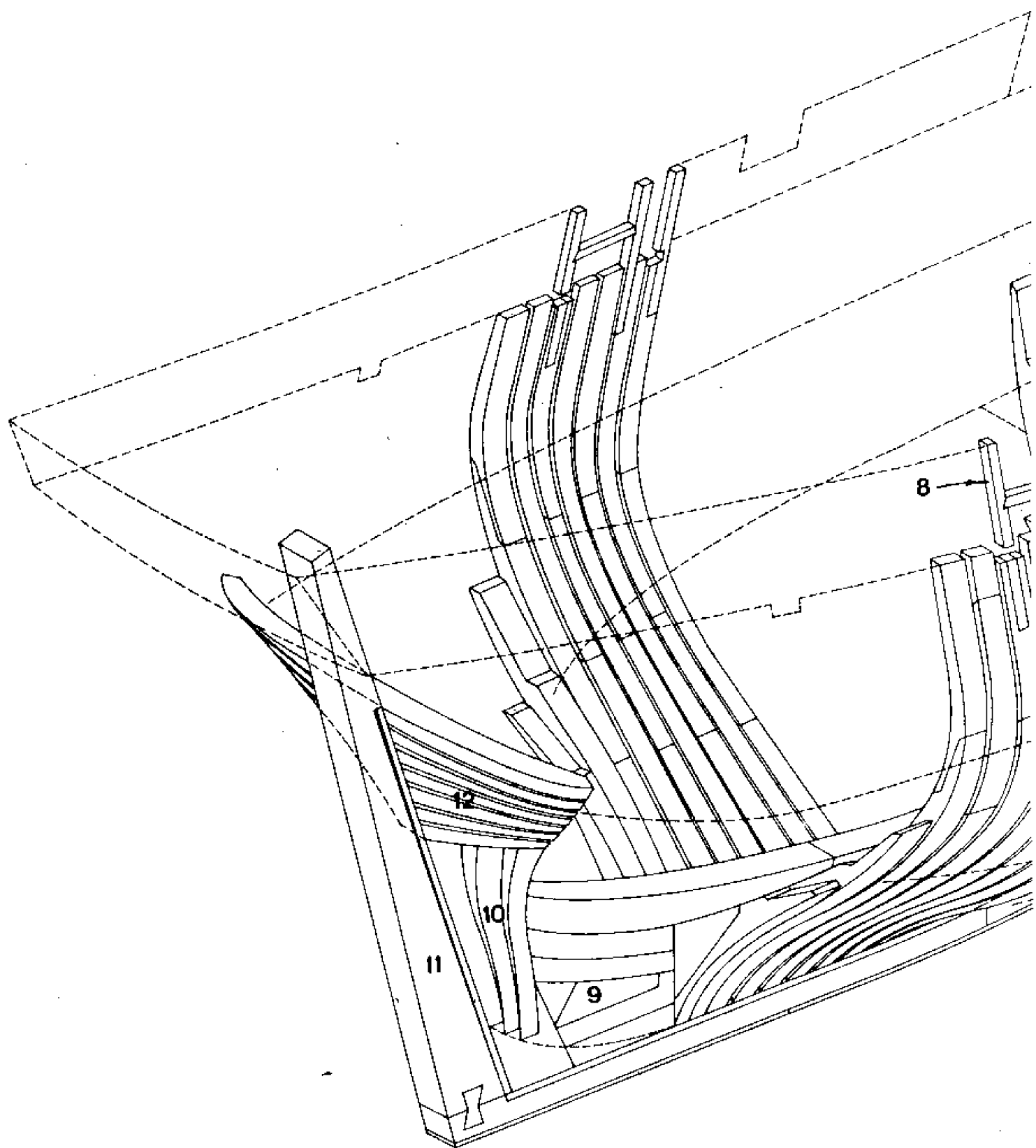


B4/2

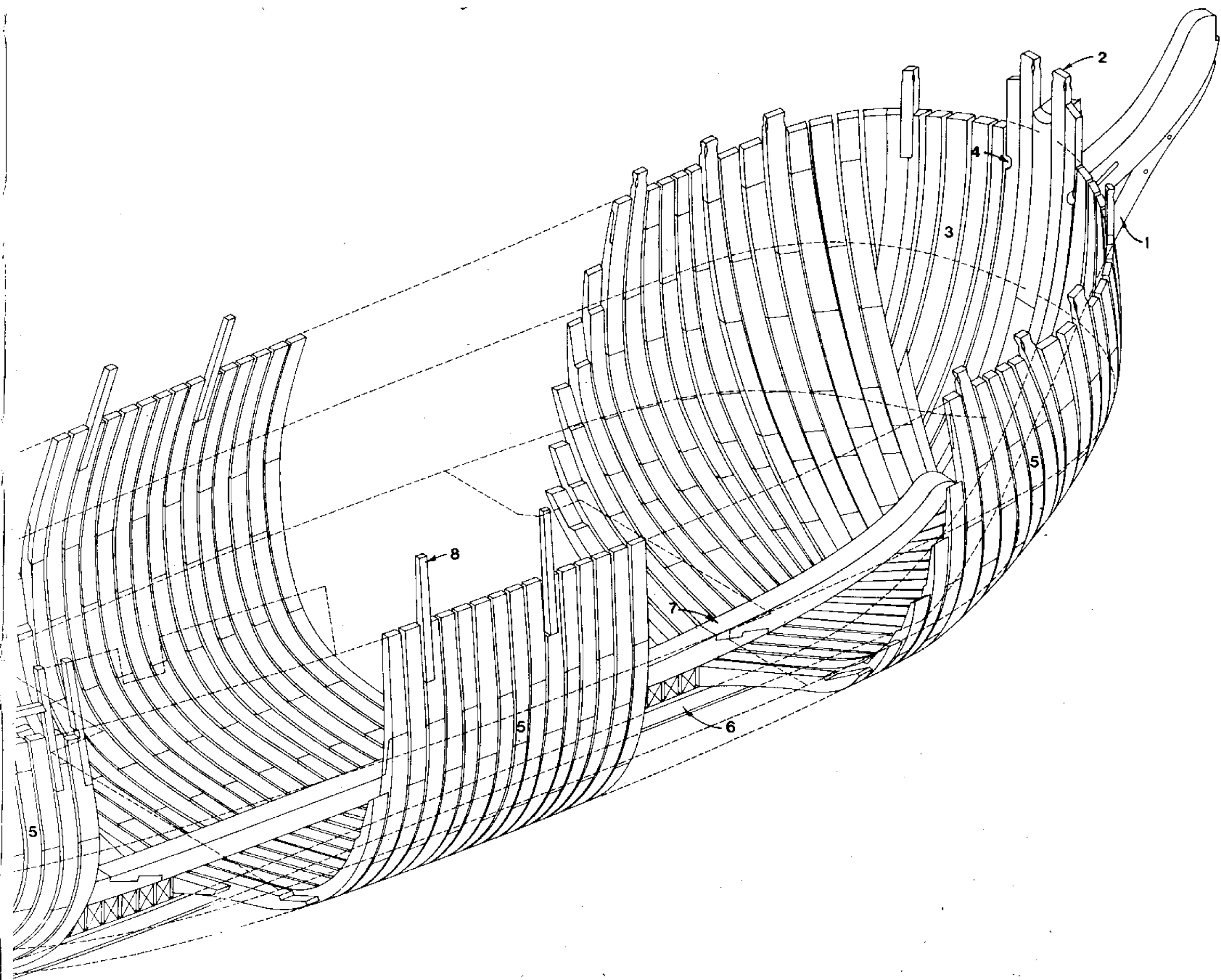


**B4/4 Isometric showing framing
(no scale)**

- 1. Cutwater
- 2. Knighthead
- 3. Hawse pieces
- 4. Hawse hole
- 5. Frames
- 6. Keel
- 7. Keelson
- 8. Stanchion
- 9. Deadwood
- 10. Fashion pieces
- 11. Stern post
- 12. Transoms



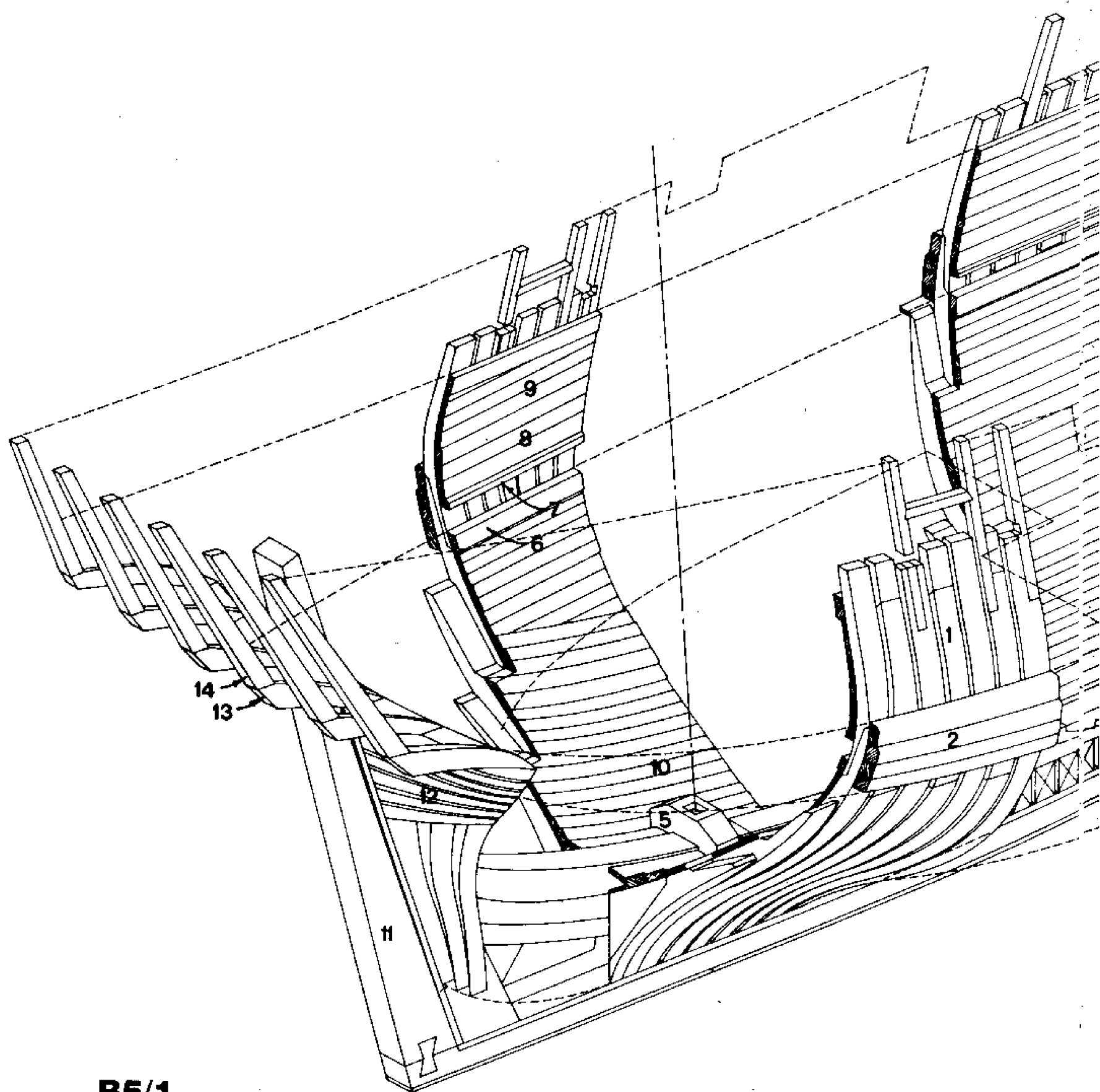
B4/4



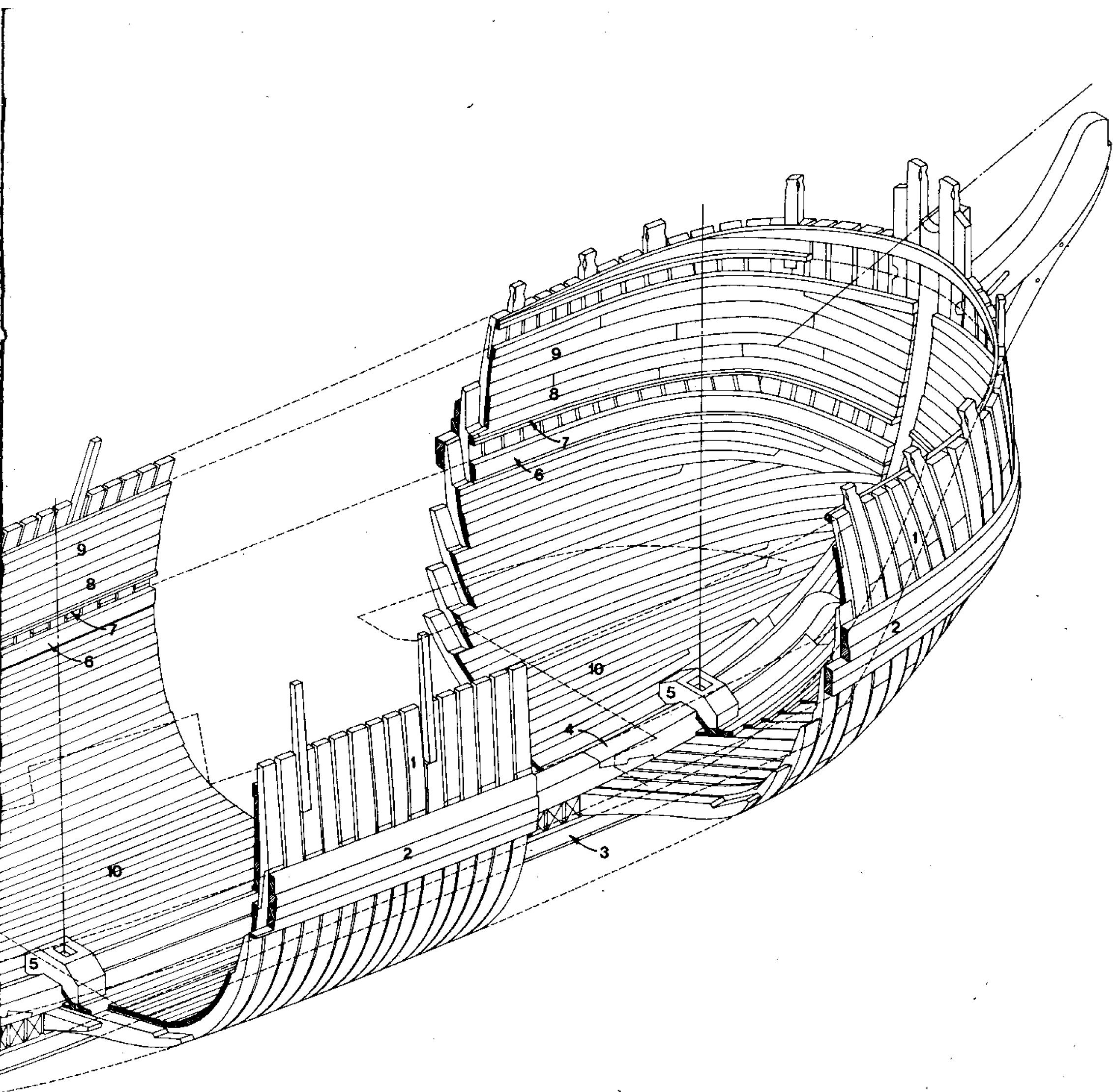
B5 PLANKS

B5/1 Isometric showing wales and planking (no scale)

1. Frames
2. Wale
3. Keel
4. Keelson
5. Mast steps
6. Deck clamp
7. Waterway plank
8. Spirketing
9. Lining or quickwork
10. Ceiling
11. Stern post
12. Transoms
13. Counter timbers
14. Stern timber



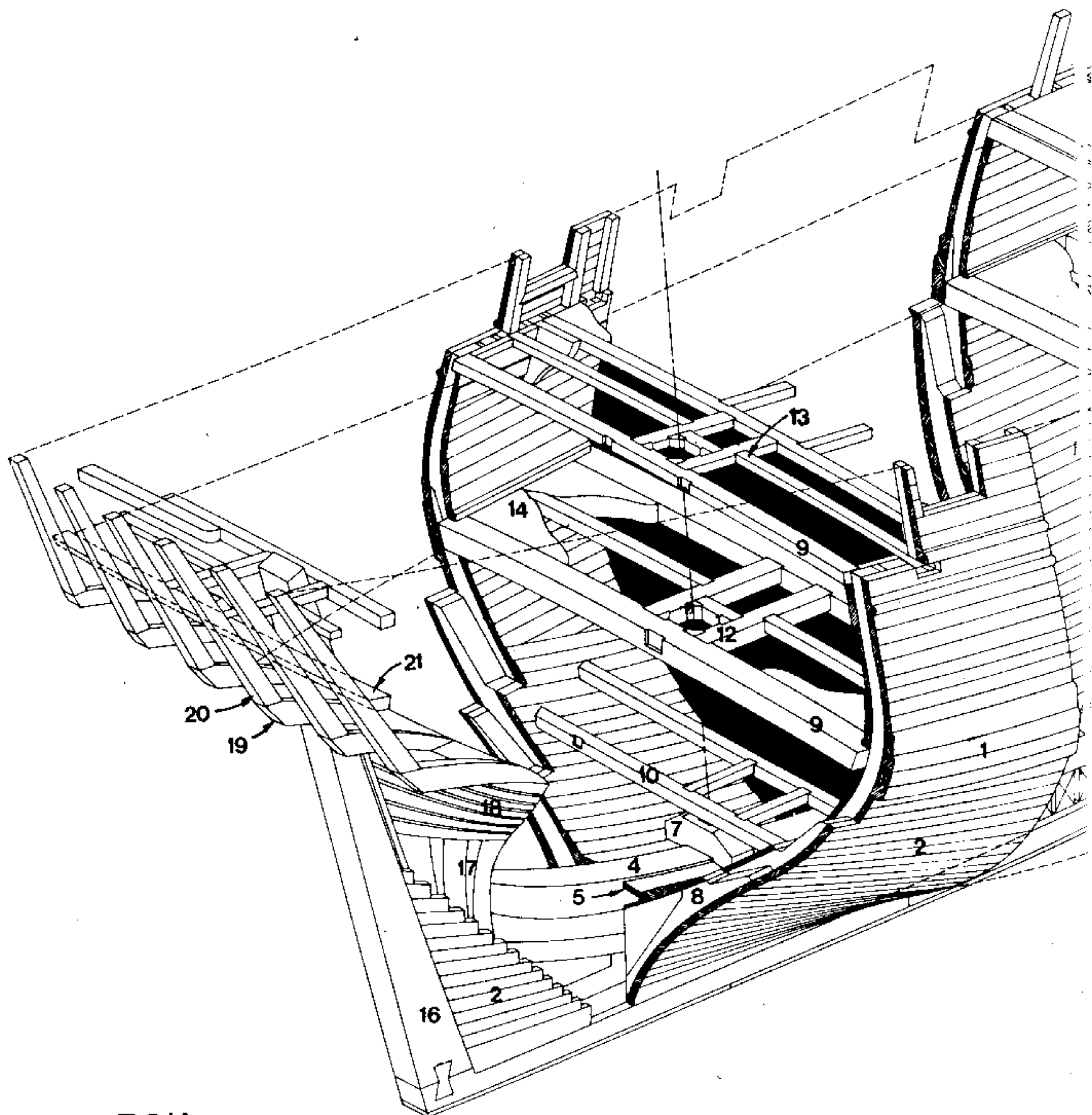
B5/1



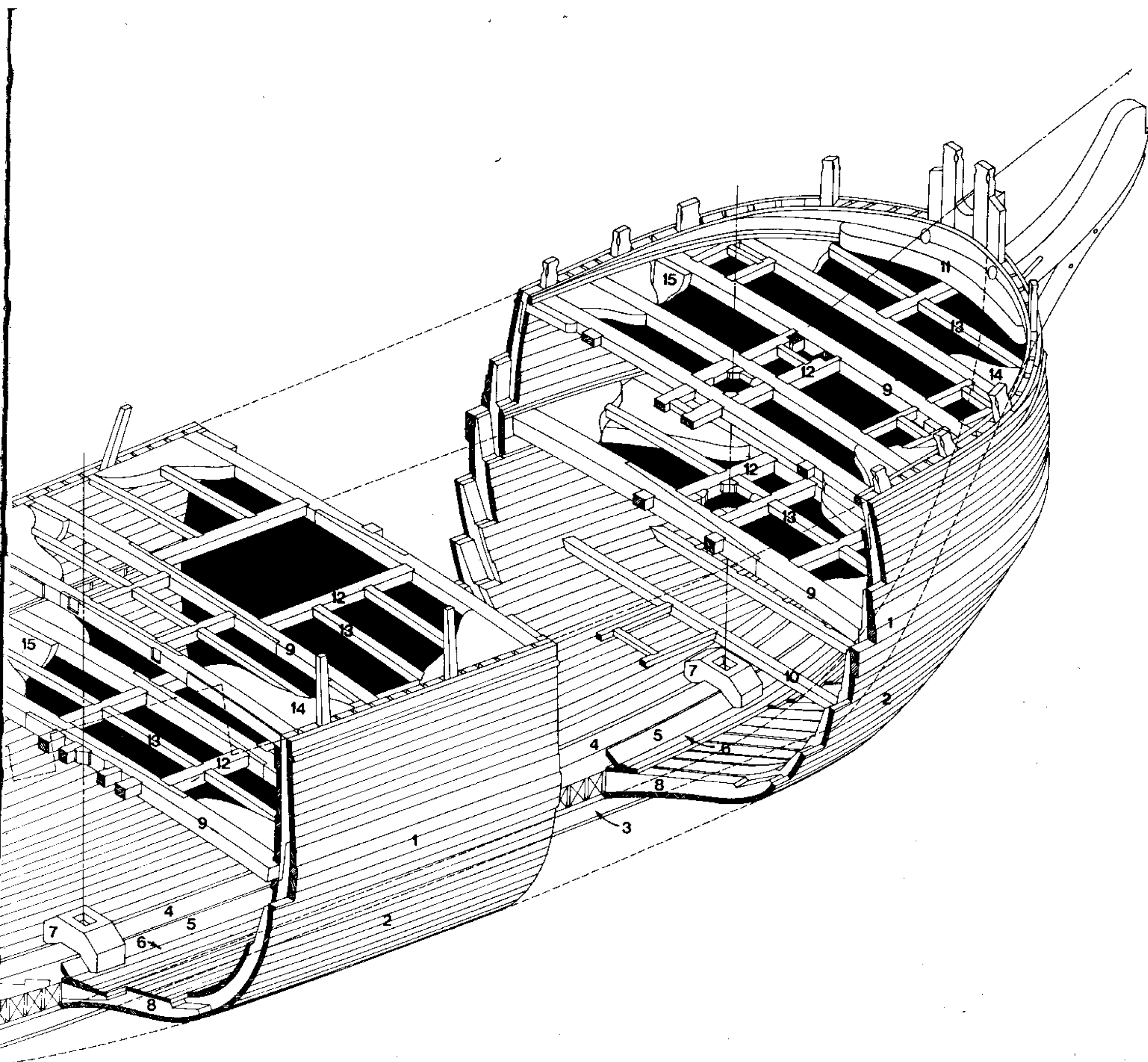
B6 BEAMS

B6/1 Isometric showing deck beams (no scale)

1. Wale
2. External planking
3. Keel
4. Keelson
5. Limber board
6. Limber strake
7. Mast steps
8. Frames
9. Deck beams
10. Hold platform beams
11. Breast hook
12. Fore and aft carlings
13. Athwartship carlings (ledges)
14. Lodging knee
15. Hanging knee
16. Stern post
17. Fashion pieces
18. Transoms
19. Counter timbers
20. Stern timbers
21. Deck transom



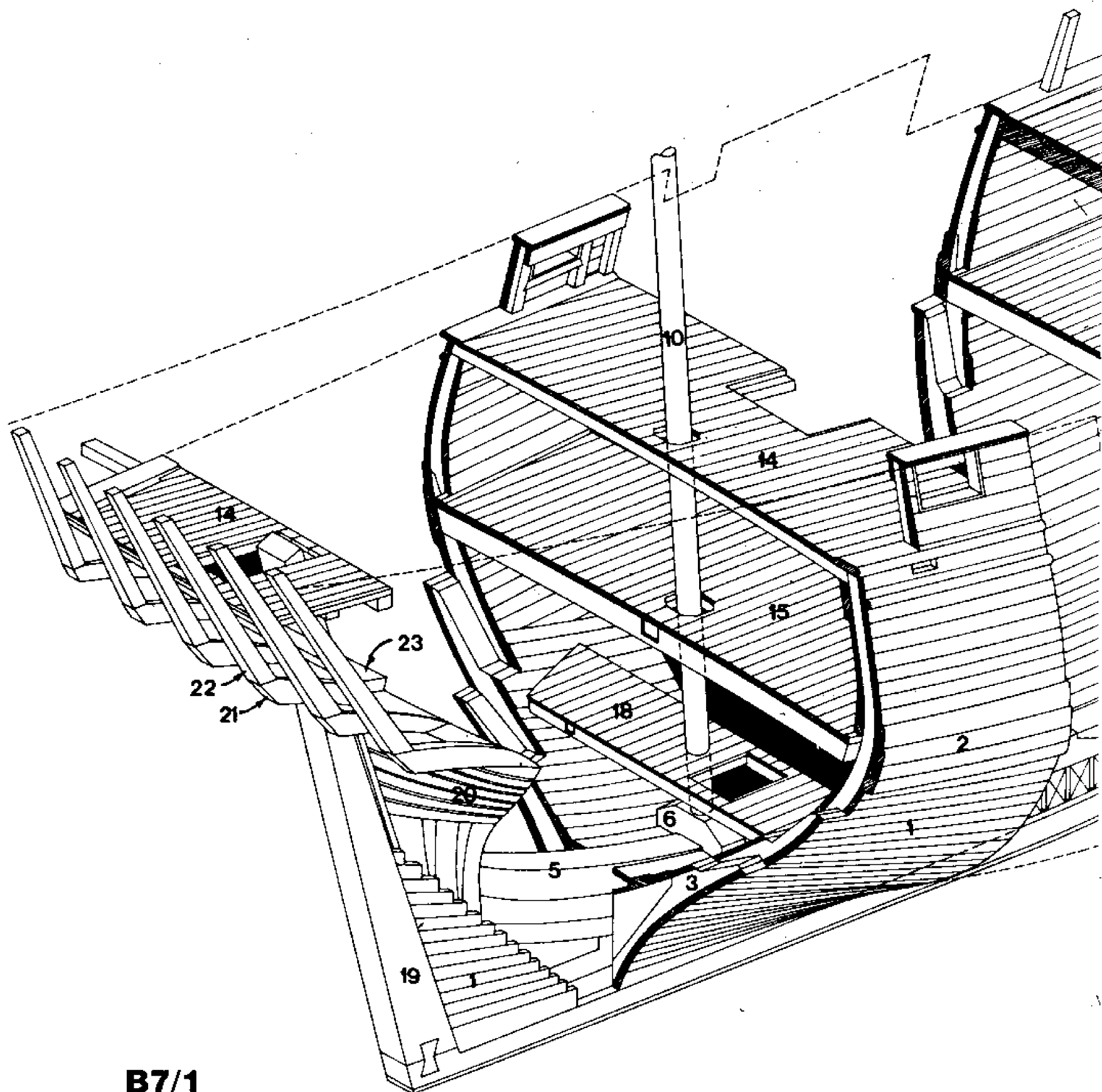
B6/1



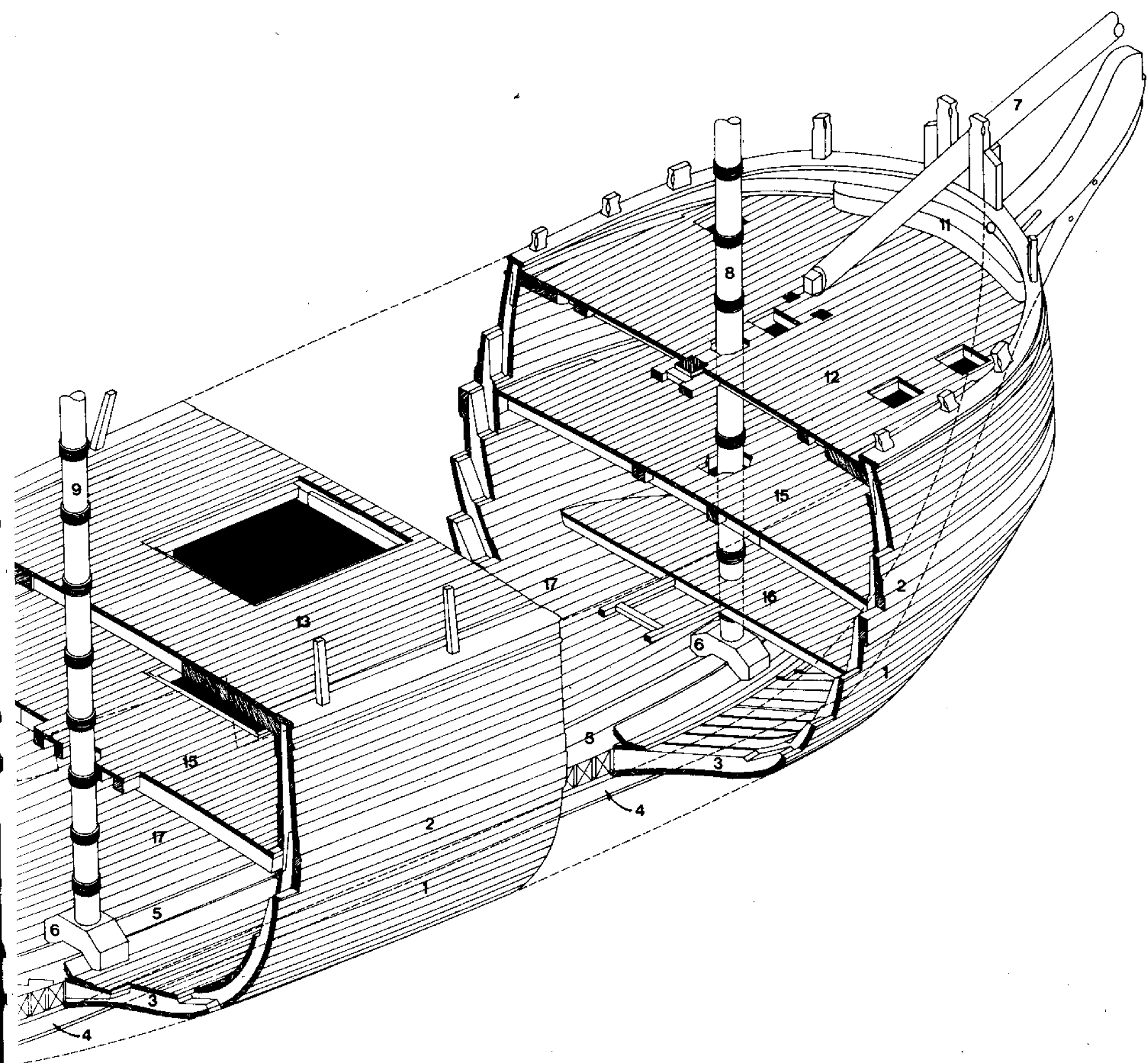
B7 DECKS

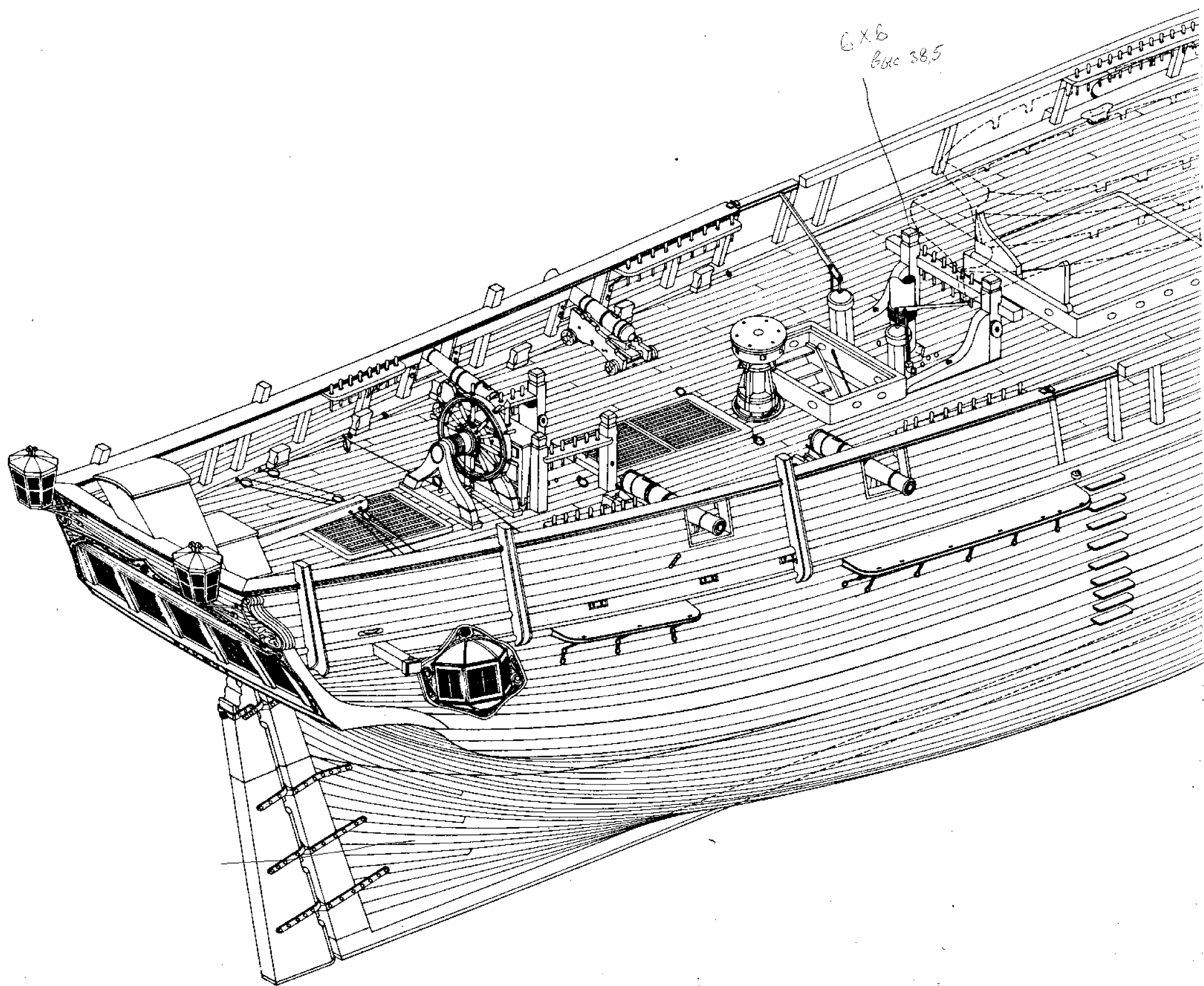
B7/1 Isometric showing decks (no scale)

1. External planking
2. Wale
3. Frames
4. Keel
5. Keelson
6. Mast steps
7. Bowsprit
8. Foremast
9. Mainmast
10. Mizzen mast
11. Breast hook
12. Forecastle
13. Upper deck
14. Quarterdeck
15. Lower deck
16. Forward hold platform
17. Hold
18. Aft hold platform
19. Stern post
20. Transoms
21. Counter timbers
22. Stern timbers
23. Deck transoms



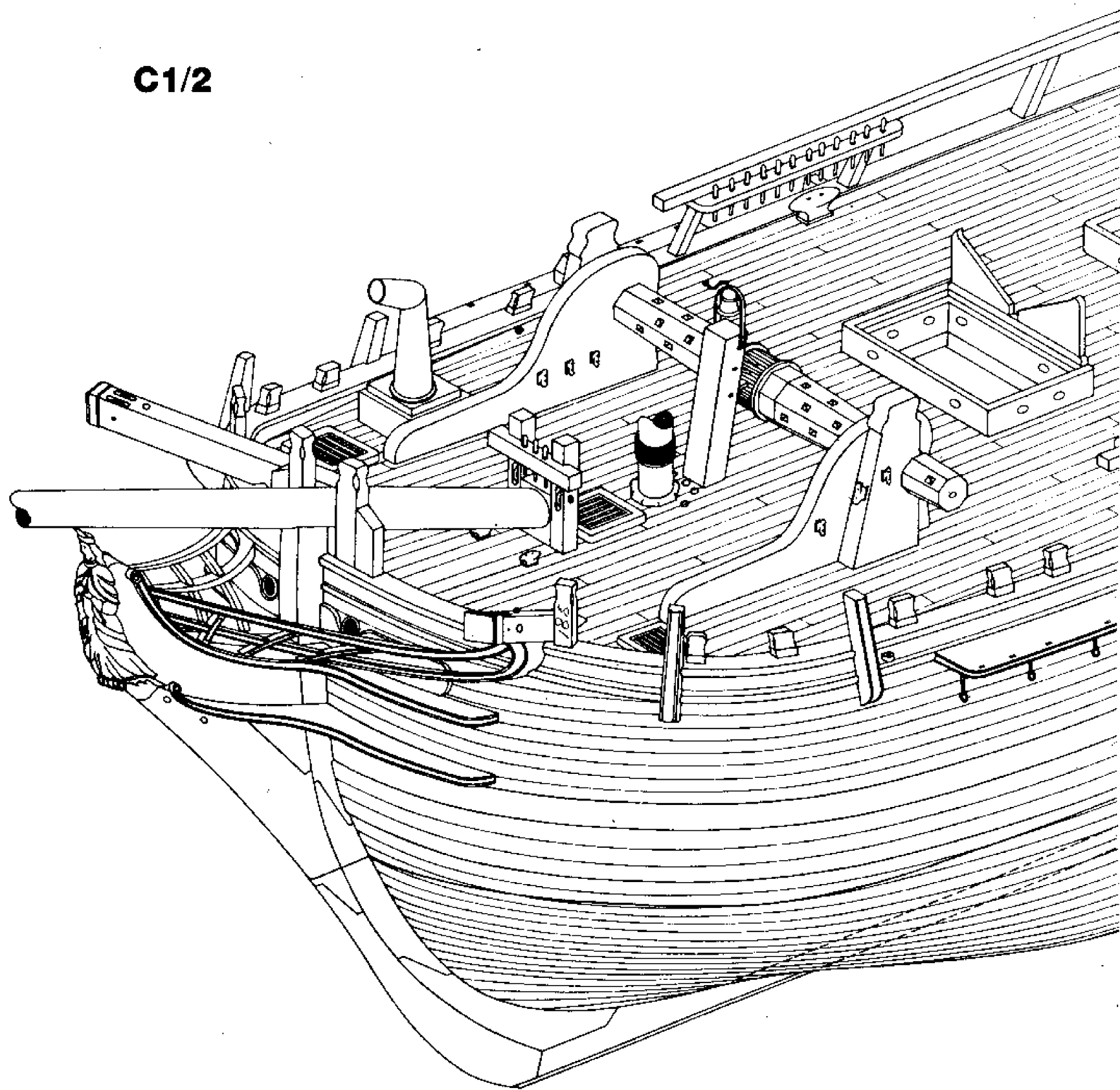
B7/1

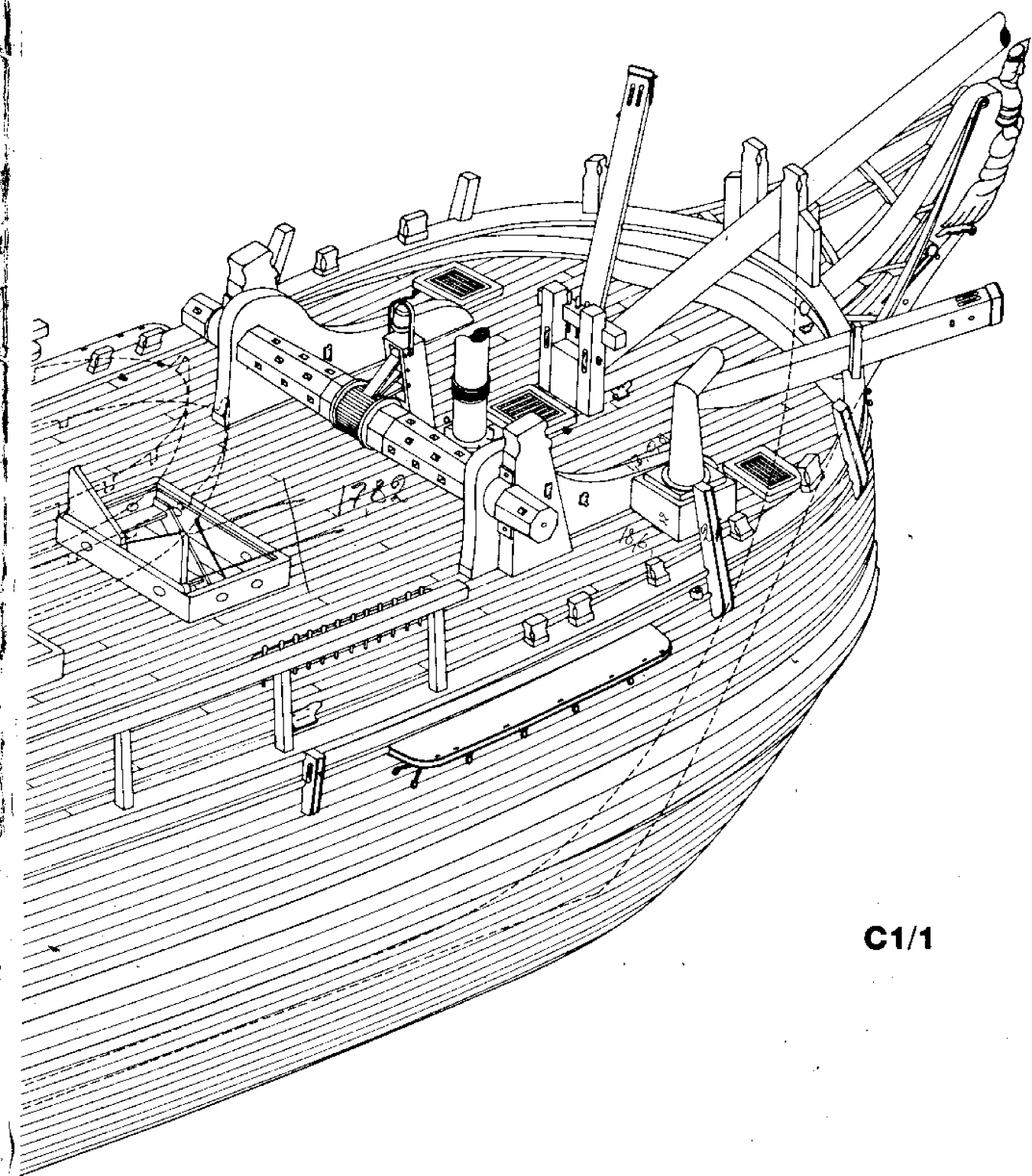




**C1/2 Isometric of the completed hull
(no scale)**

C1/2

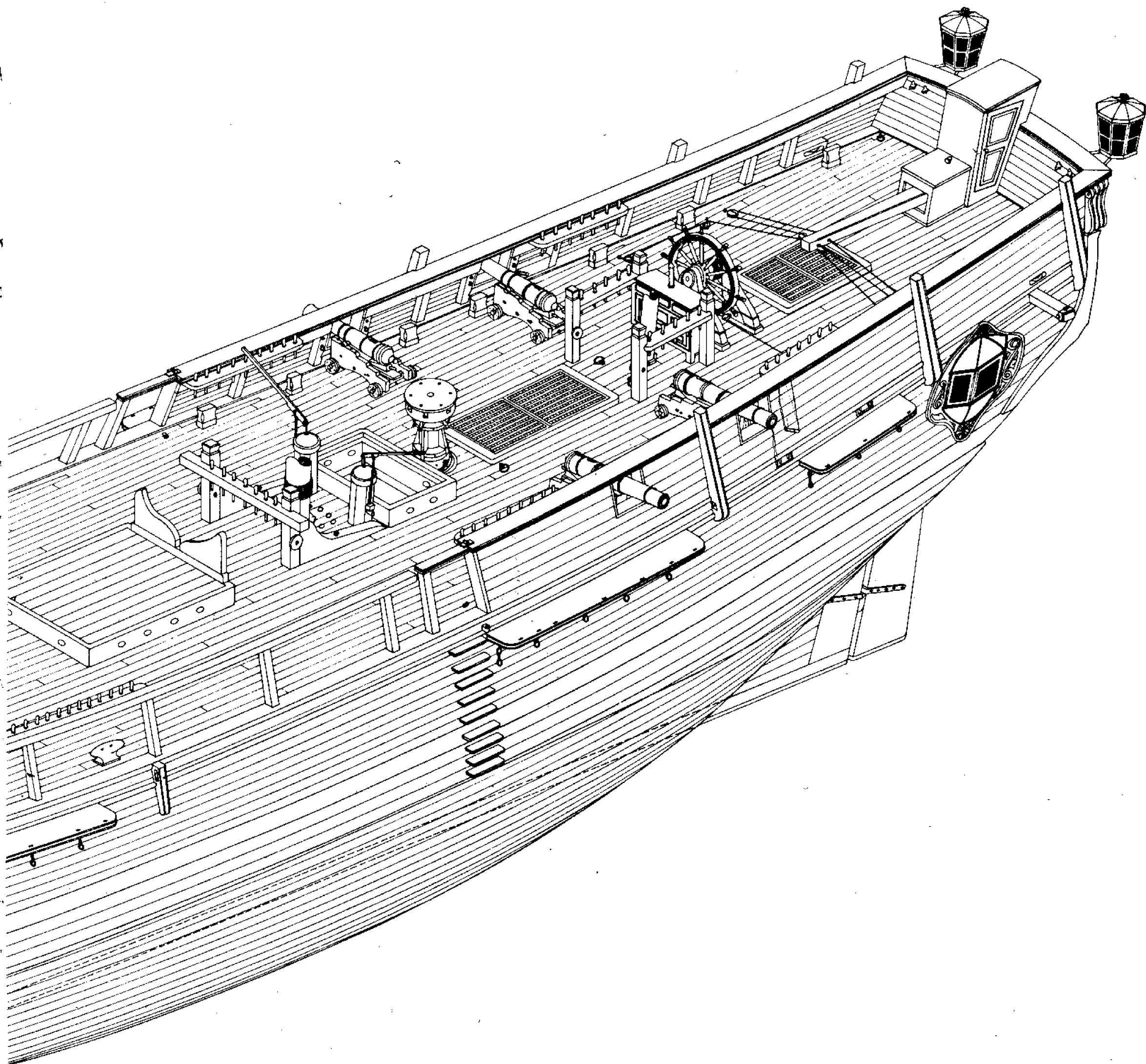


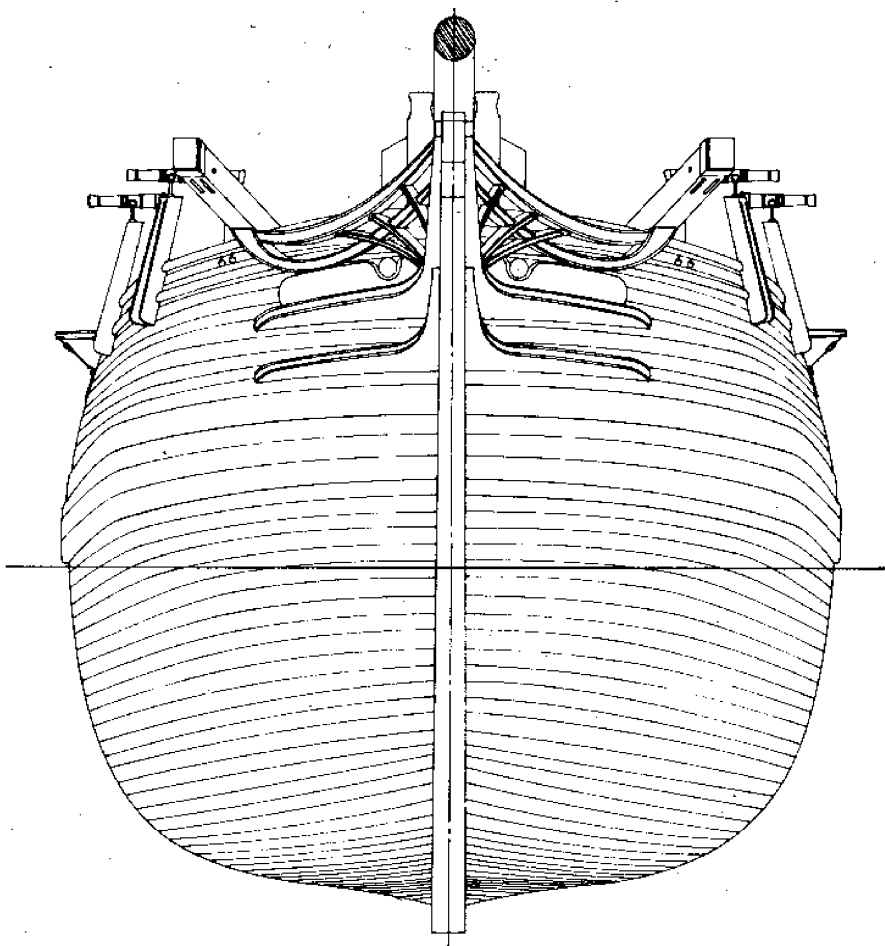


C1 GENERAL ARRANGEMENT

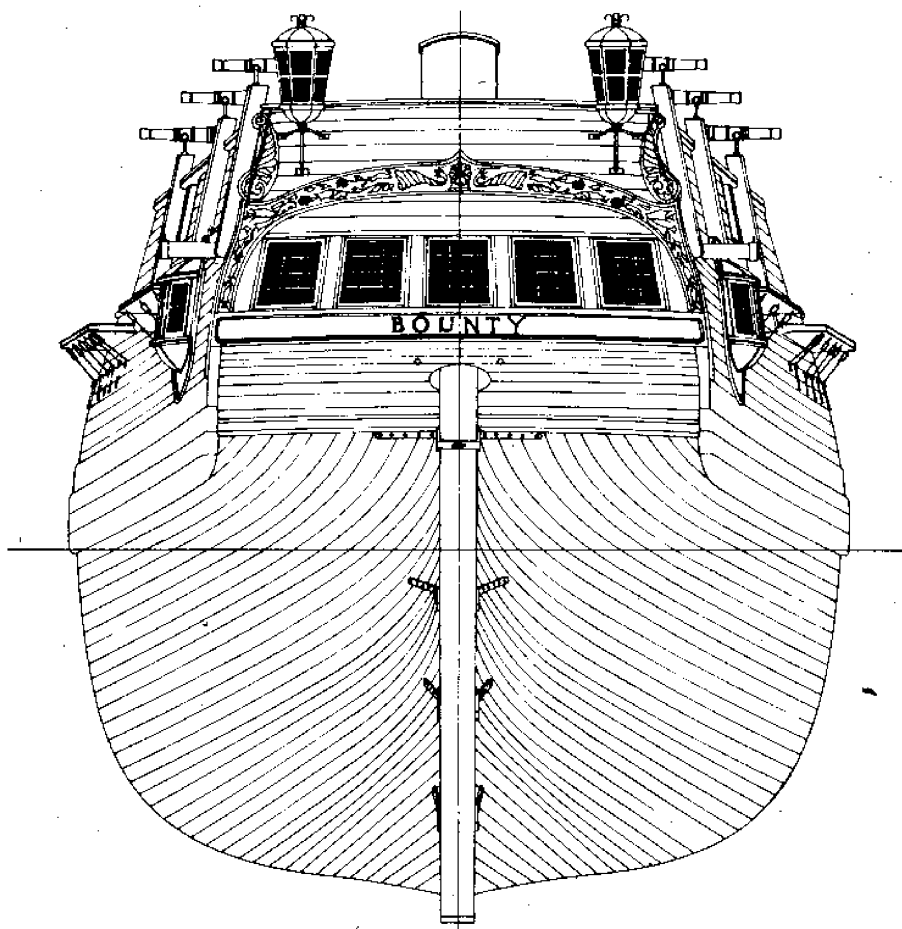
**C1/1 Isometric of the completed hull
(no scale)**

C1/1





C2/1



C3/1

C2 BOW

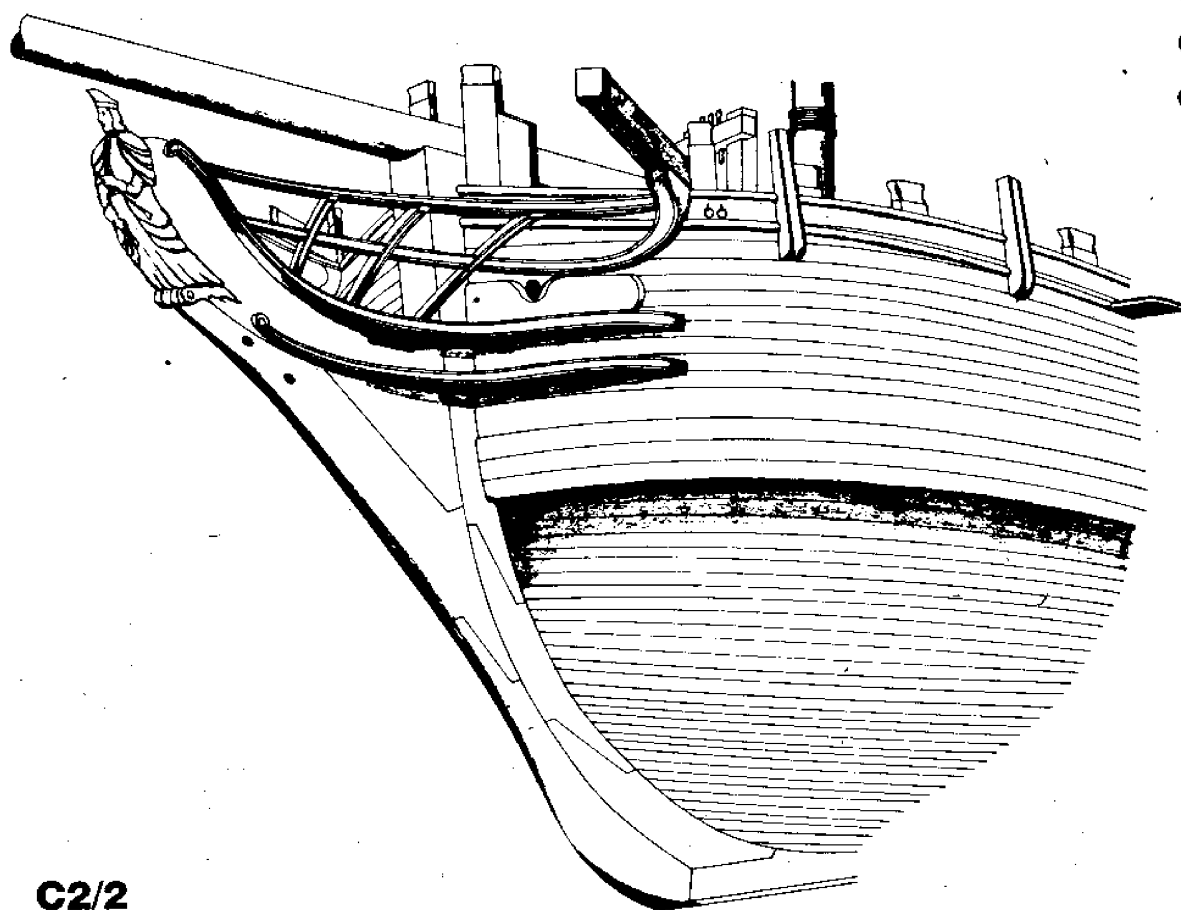
C3 STERN

C2/1 Bow elevation (1/96 scale)

C3/1 Stern elevation (1/96 scale)

C2/2 Sketch of bows (no scale)

C2/3 Figurehead (no scale)

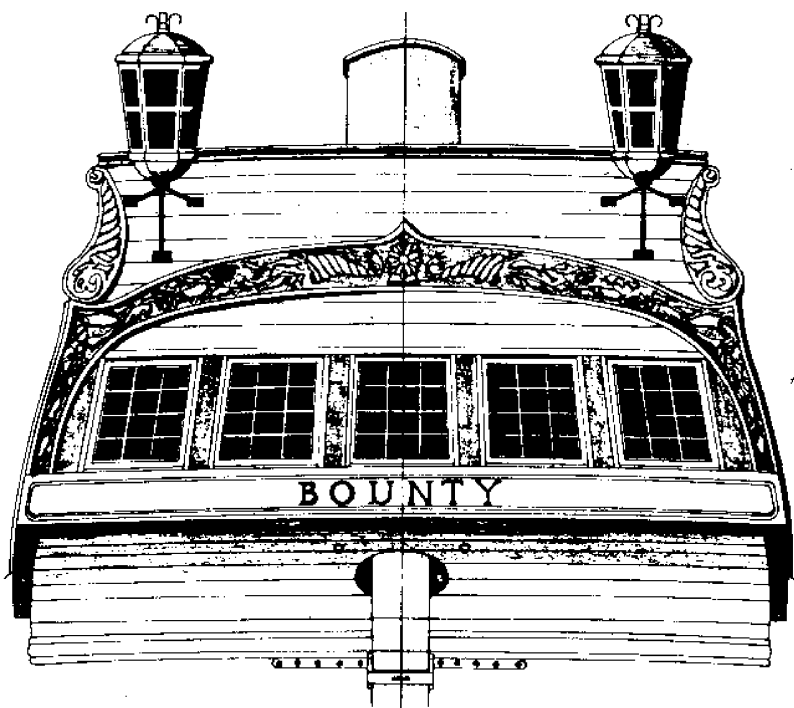


C2/2



C2/3

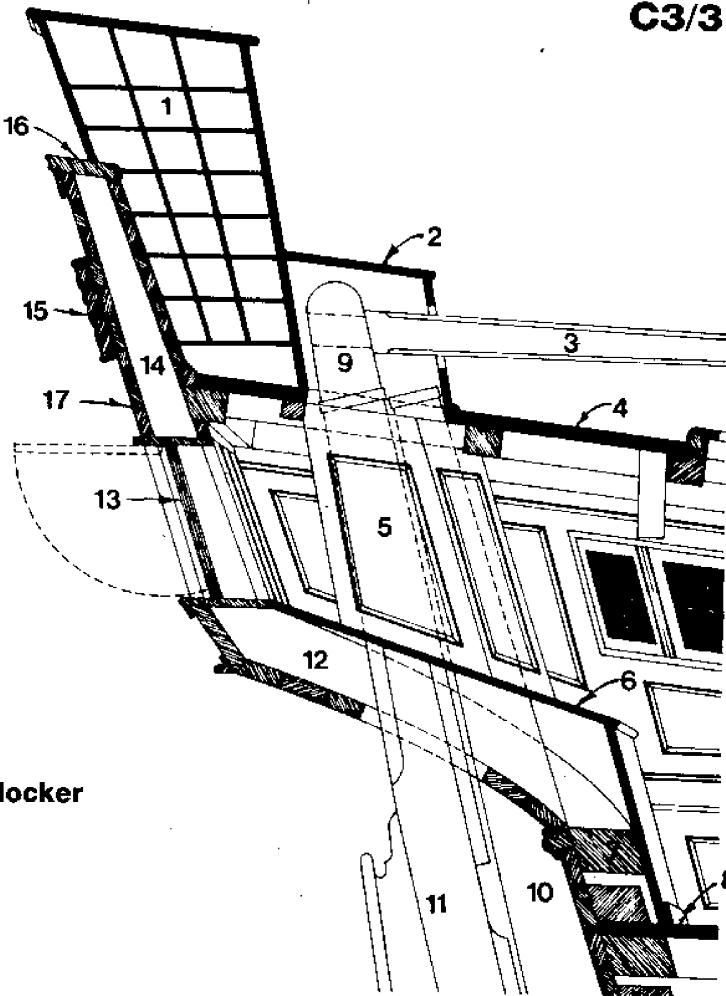
C3/2



C3/2 Stern decoration (1/48 scale)

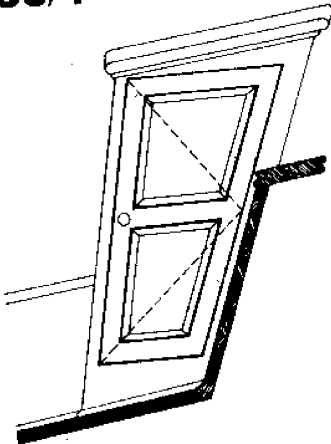
- C3/3 Stern detail (1/48 scale)**
1. Compartmented flag locker
 2. Rudder head housing
 3. Tiller
 4. Quarterdeck
 5. Stern post shroud
 6. Pannelling
 7. Wing transom
 8. Lower deck
 9. Rudder head
 10. Stern post
 11. Rudder
 12. Counter timber
 13. Stern window
 14. Stern timber
 15. Stern decoration
 16. Taffrail
 17. External planking

C3/3

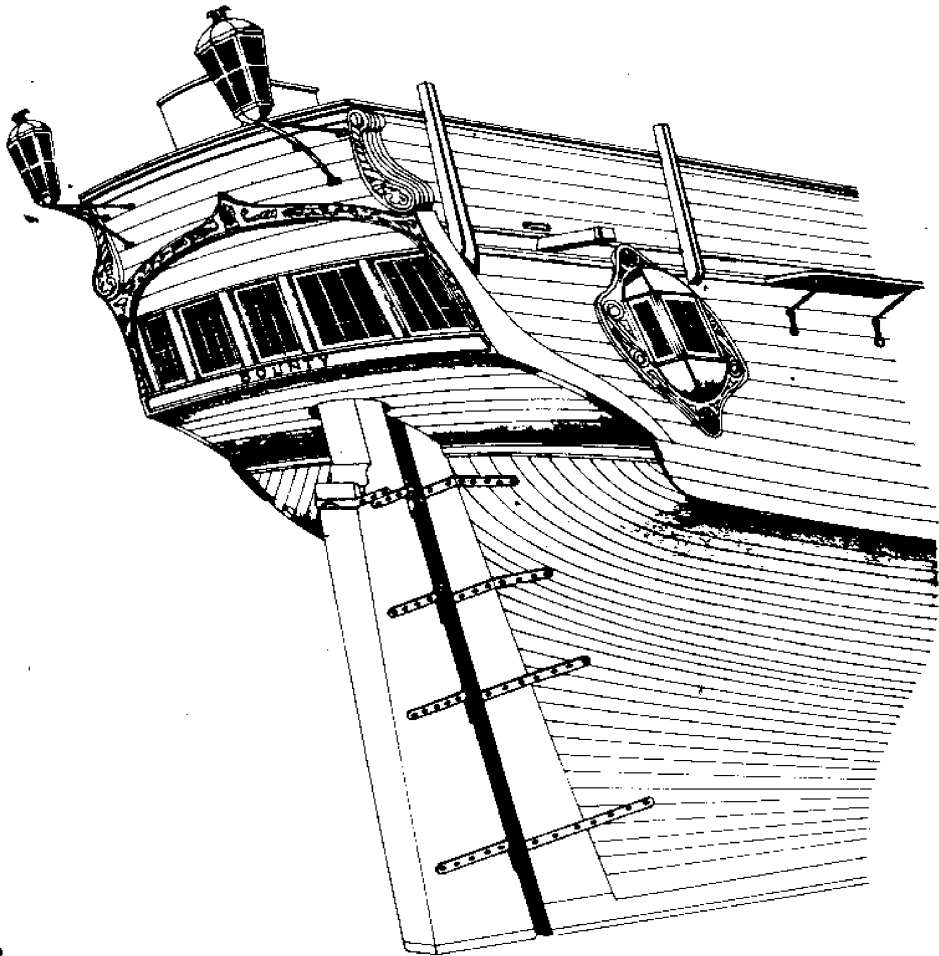


C3/4 Port elevation of flag locker (1/48 scale)

C3/4

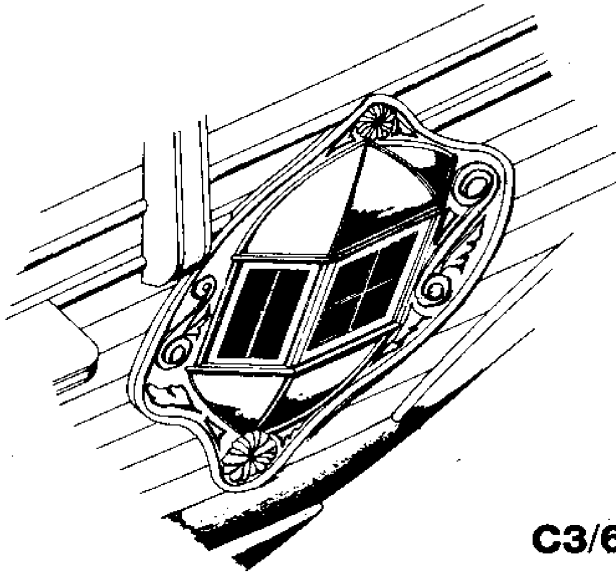


C3/5 Sketch of stern (no scale)



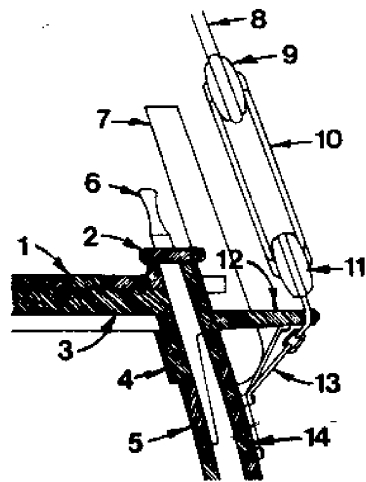
C3/5

C3/6 Quarter gallery (no scale)

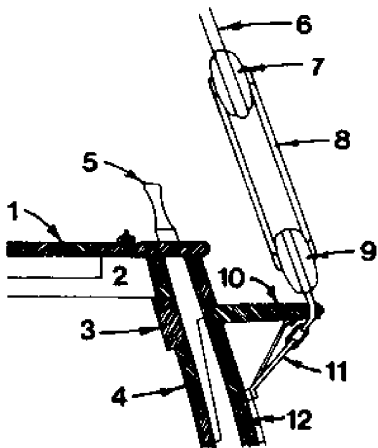


C3/6

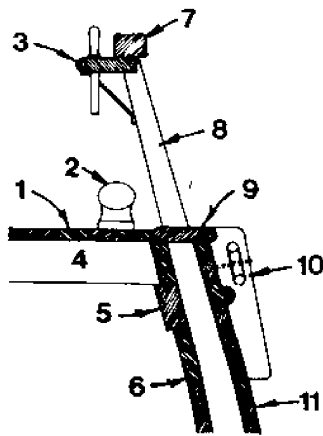
C4/1



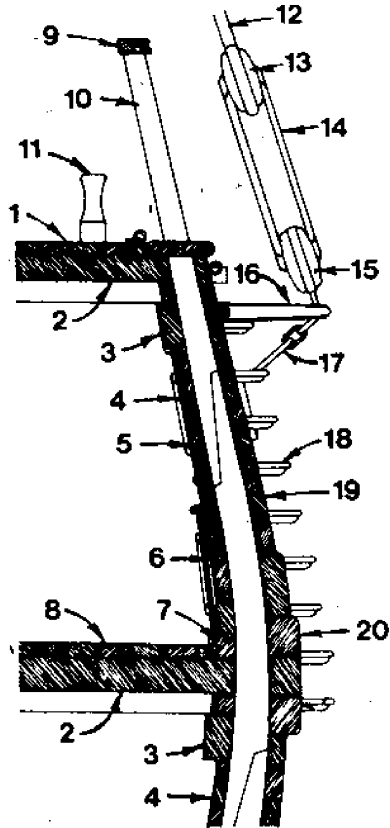
C4/2



C4/3



C4/4



C4 RAIL DETAILS

C4/1 Rail detail at station 'B' (1/48 scale)

1. Fore-castle deck
2. Planksheer rail
3. Lodging knee
4. Deck clamp
5. Lining or quickwork
6. Timber head
7. Swivel stanchion
8. Shroud
9. Shroud deadeye
10. Lanyard
11. Chain deadeye
12. Fore channel
13. Chain
14. External planking

C4/2 Rail detail at station 'A' (1/48 scale)

1. Upper deck
2. Beam
3. Deck clamp
4. Lining or quickwork
5. Timber head
6. Shroud
7. Shroud deadeye
8. Lanyard
9. Chain deadeye
10. Fore channel
11. Chain
12. External planking

C4/3 Rail detail at station B (1/48 scale)

1. Upper deck
2. Cleat
3. Fore pin rail
4. Beam
5. Deck clamp
6. Lining or quickwork
7. Rail
8. Stanchion
9. Planksheer
10. Chesstree
11. External planking

C4/4 Rail detail at station '1' (1/48 scale)

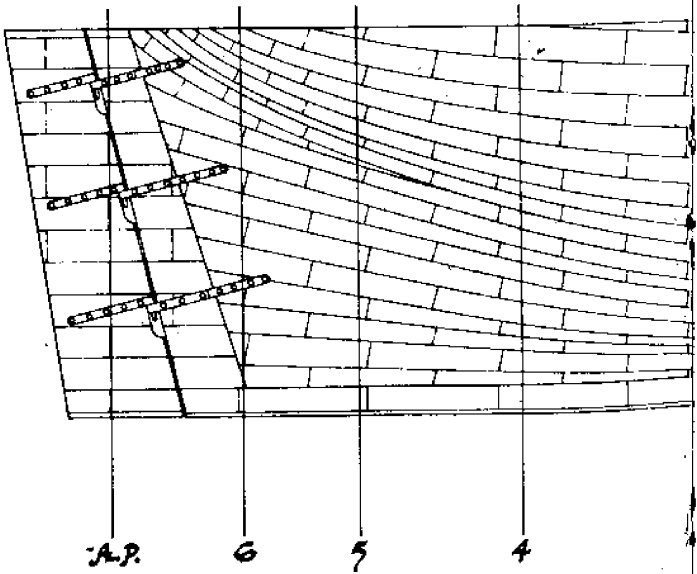
1. Upper deck
2. Lodging knee
3. Deck clamp
4. Cabin panelling
5. Lining or quickwork
6. Spirketing
7. Waterway plank
8. Lower deck
9. Rail
10. Stanchion
11. Cleat
12. Shroud
13. Shroud deadeye
14. Lanyard
15. Chain deadeye
16. Main channel
17. Chain
18. Side ladder
19. External planking
20. Wale

C4/5 Rail detail at station '2' (1/48 scale)

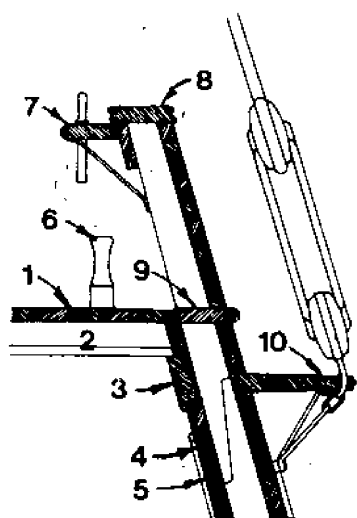
1. Upper deck
2. Beam
3. Deck clamp
4. Lining or quickwork
5. Cabin panelling
6. Cleat
7. Main pin rail
8. Planksheer rail
9. Planksheer
10. Main channel

C4/6 Rail detail at station '2' (1/48 scale)

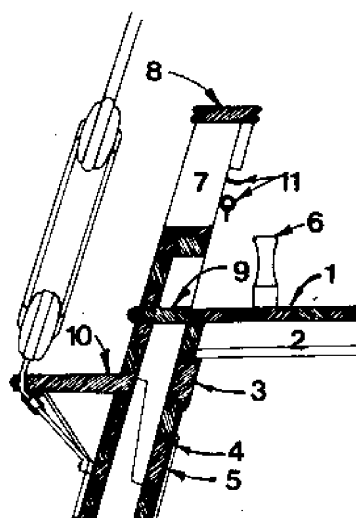
1. Upper deck
2. Beam
3. Deck clamp
4. Lining or quickwork
5. Cabin panelling
6. Cleat
7. Gun port
8. Planksheer rail
9. Planksheer
10. Main channel
11. Rings for gun tackles



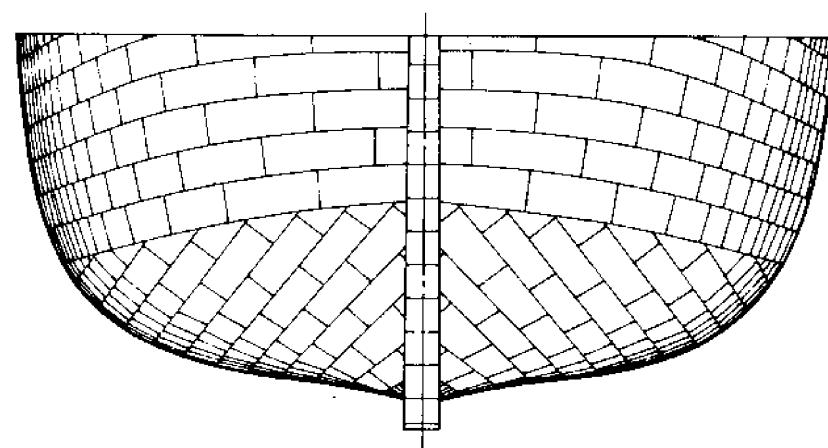
C4/5



C4/6

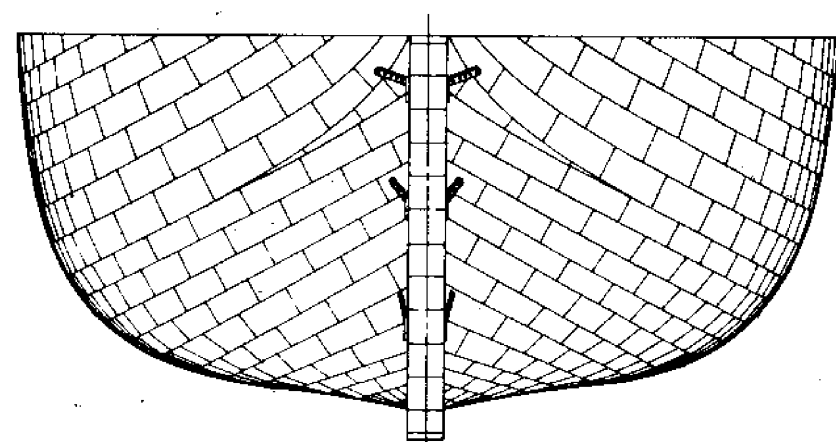


C5/2

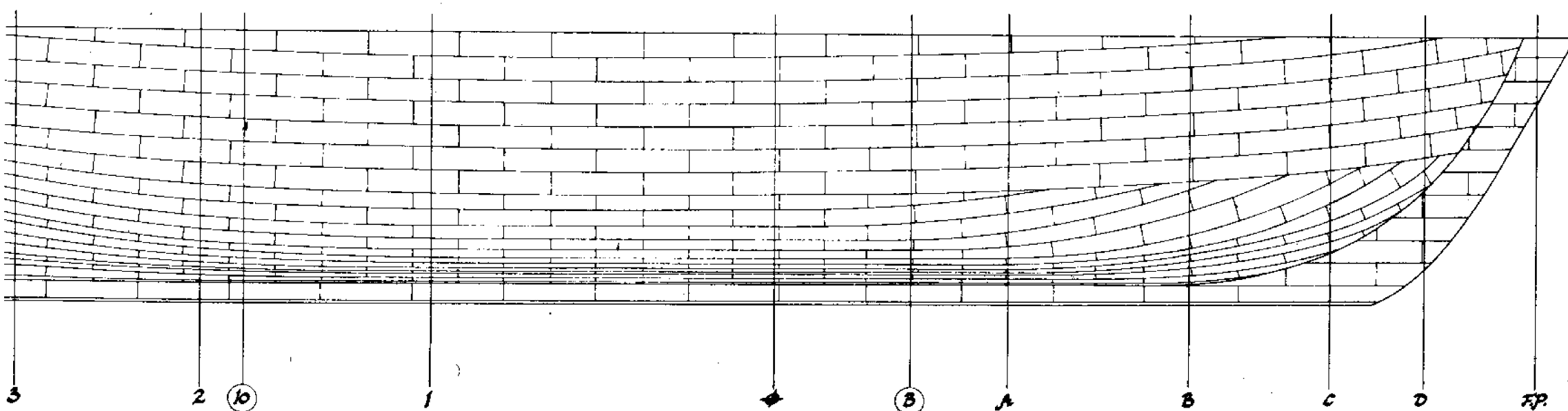


C5 COPPER SHEATHING
C5/1 Outboard (1/96 scale)
C5/2 Bow (1/96 scale)
C5/3 Stern (1/96 scale)

C5/3



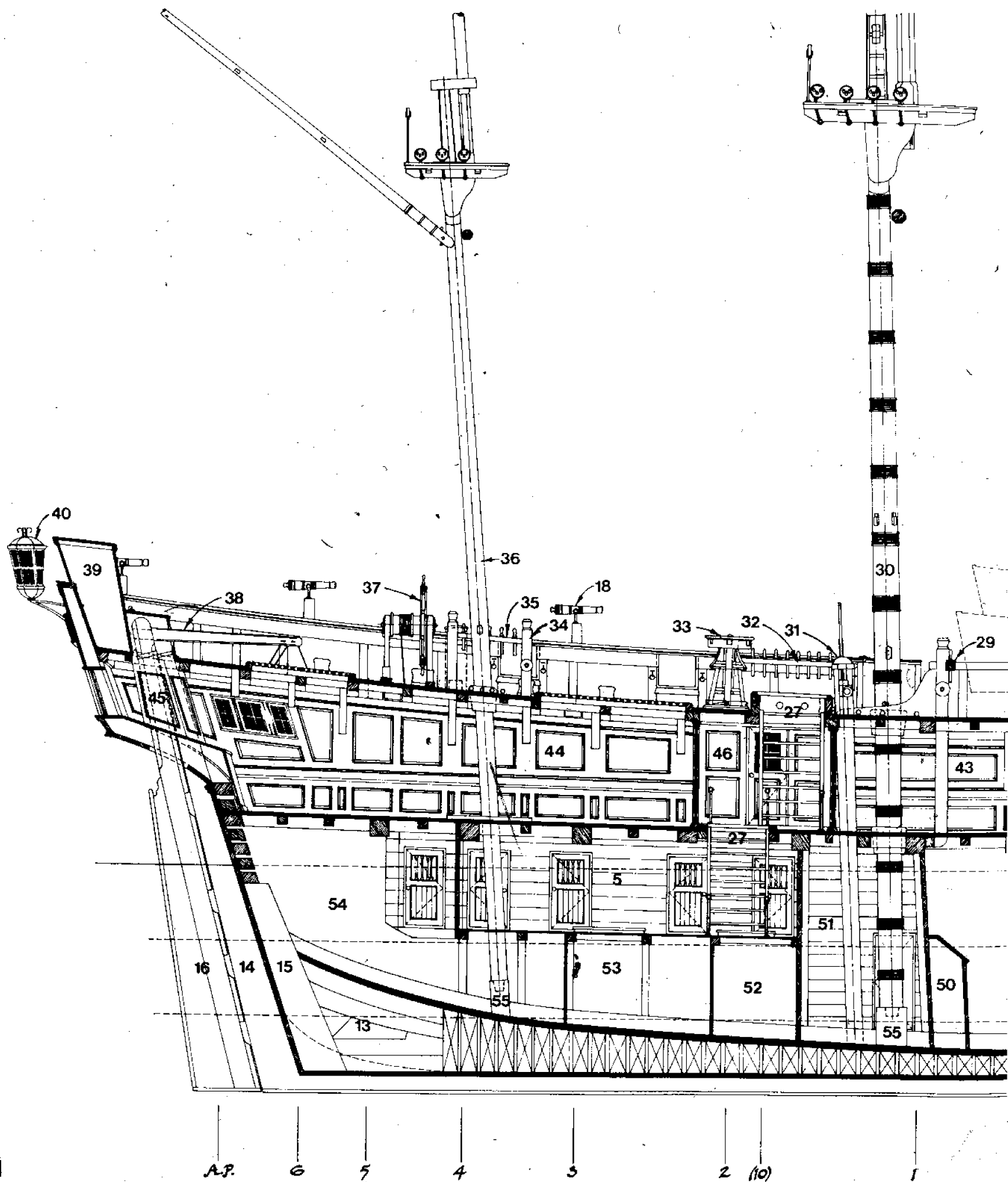
C5/1



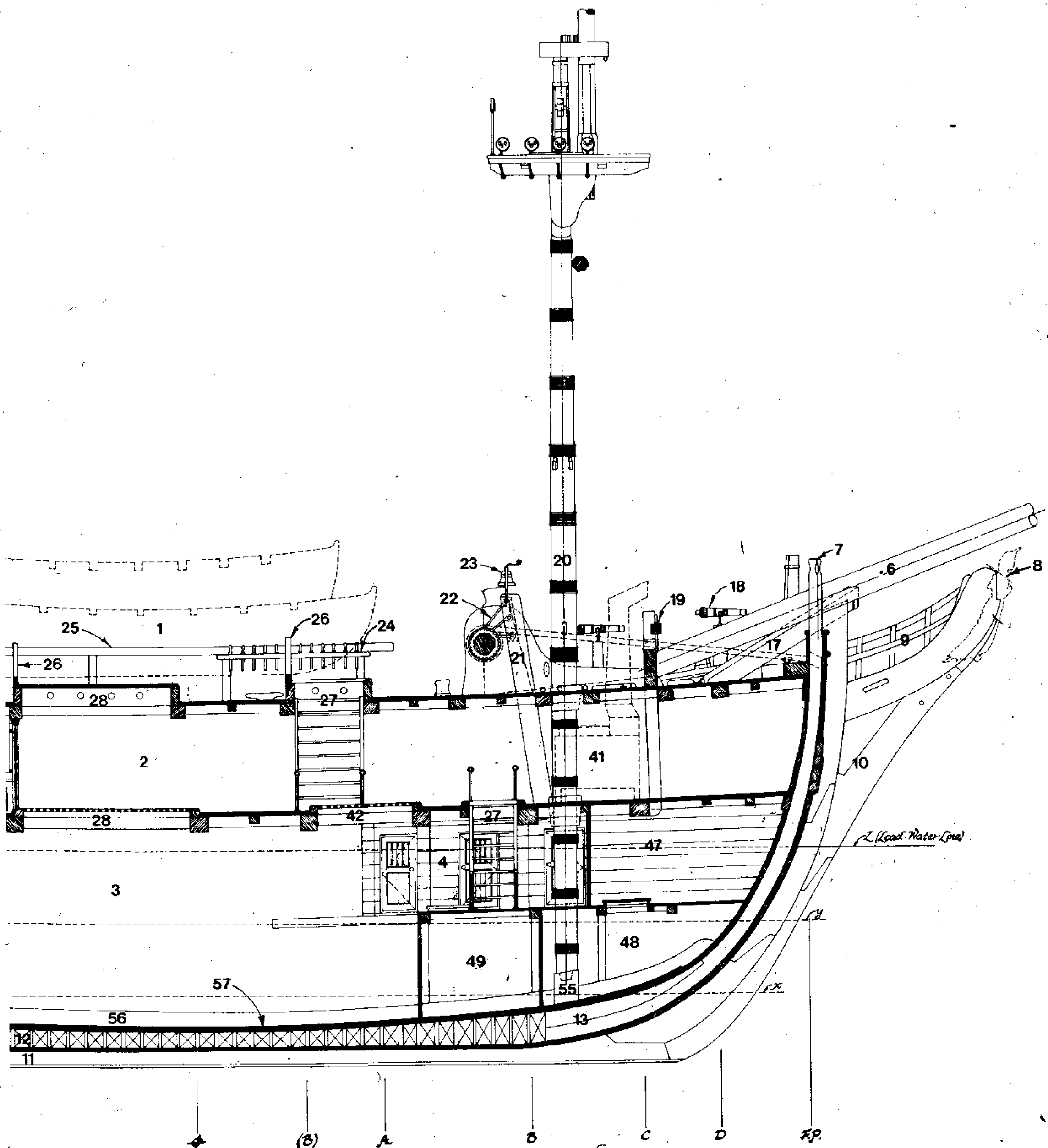
D1 GENERAL ARRANGEMENT

D1/1 Inboard profile (1/96 scale)

1. Upper deck
2. Lower deck
3. Hold
4. Fore platform
5. Aft platform
6. Bowsprit
7. Knighthead
8. Figurehead
9. Head rails
10. Cutwater
11. Keel
12. Frames
13. Deadwood
14. Stern post
15. Inner stern post
16. Rudder
17. Cathead
18. Half-pounder swivel
19. Fore topsail sheet bitts
20. Foremast
21. Pawl bitt post
22. Windlass
23. Bell
24. Fore pin rail
25. Rail
26. Boat chock
27. Companionway
28. Main hatch
29. Fore brace bitts
30. Mainmast
31. Pump
32. Main pin rail
33. Capstan
34. Mizzen topsail sheet bitts
35. Poop pin rail
36. Mizzen mast
37. Steering wheel
38. Tiller
39. Flag locker
40. Stern lantern
41. Galley stove (starboard)
42. Fore hatch
43. Captain's dining cabin
44. Garden (great cabin)
45. Rudder head housing
46. Lobby
47. Boatswain's store room
48. Boatswain's store room
49. Sail room
50. Shot locker
51. Hold well
52. Spirit room
53. Fish room
54. Bread room
55. Mast step
56. Keelson
57. Ceilings

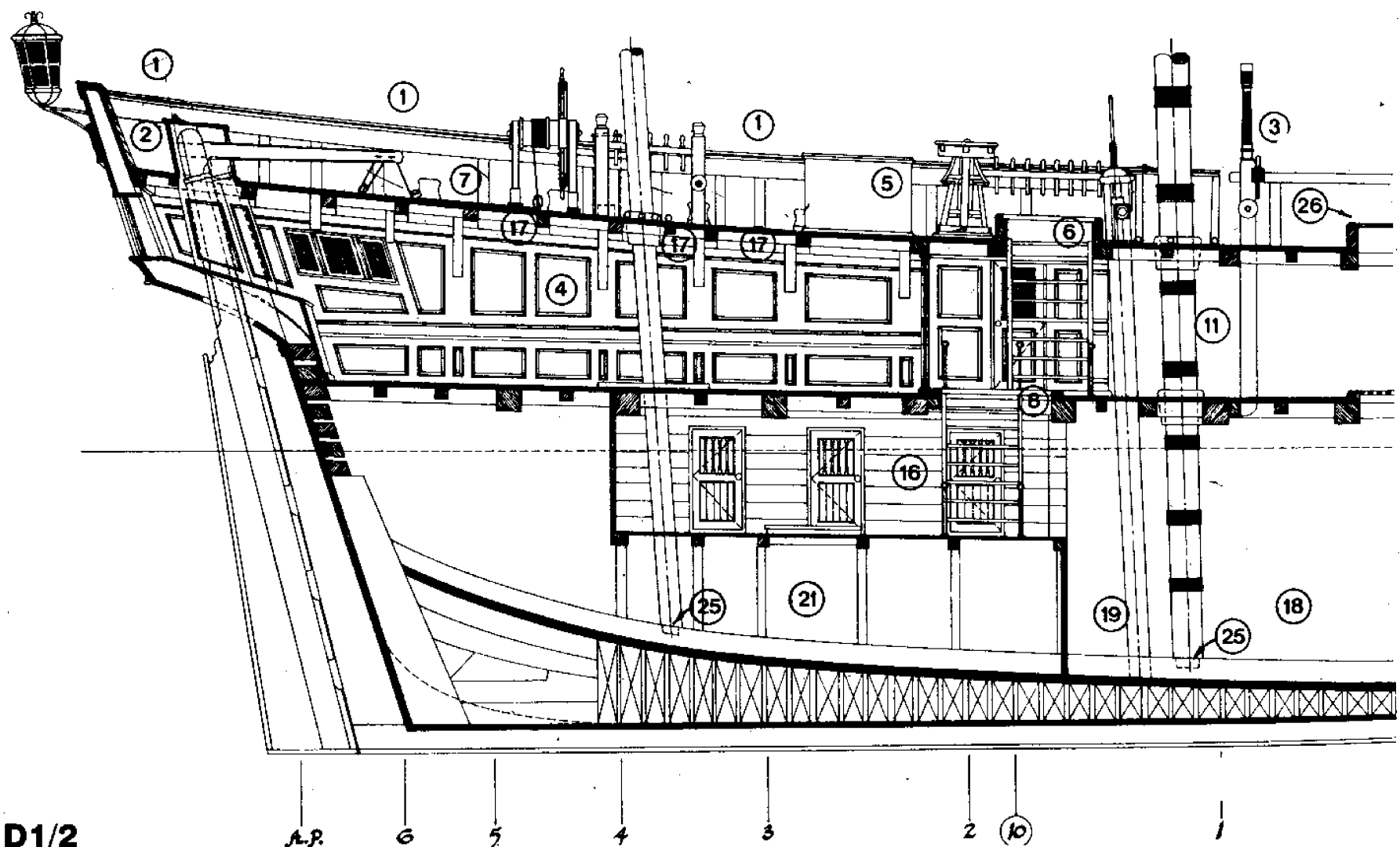


D1/1

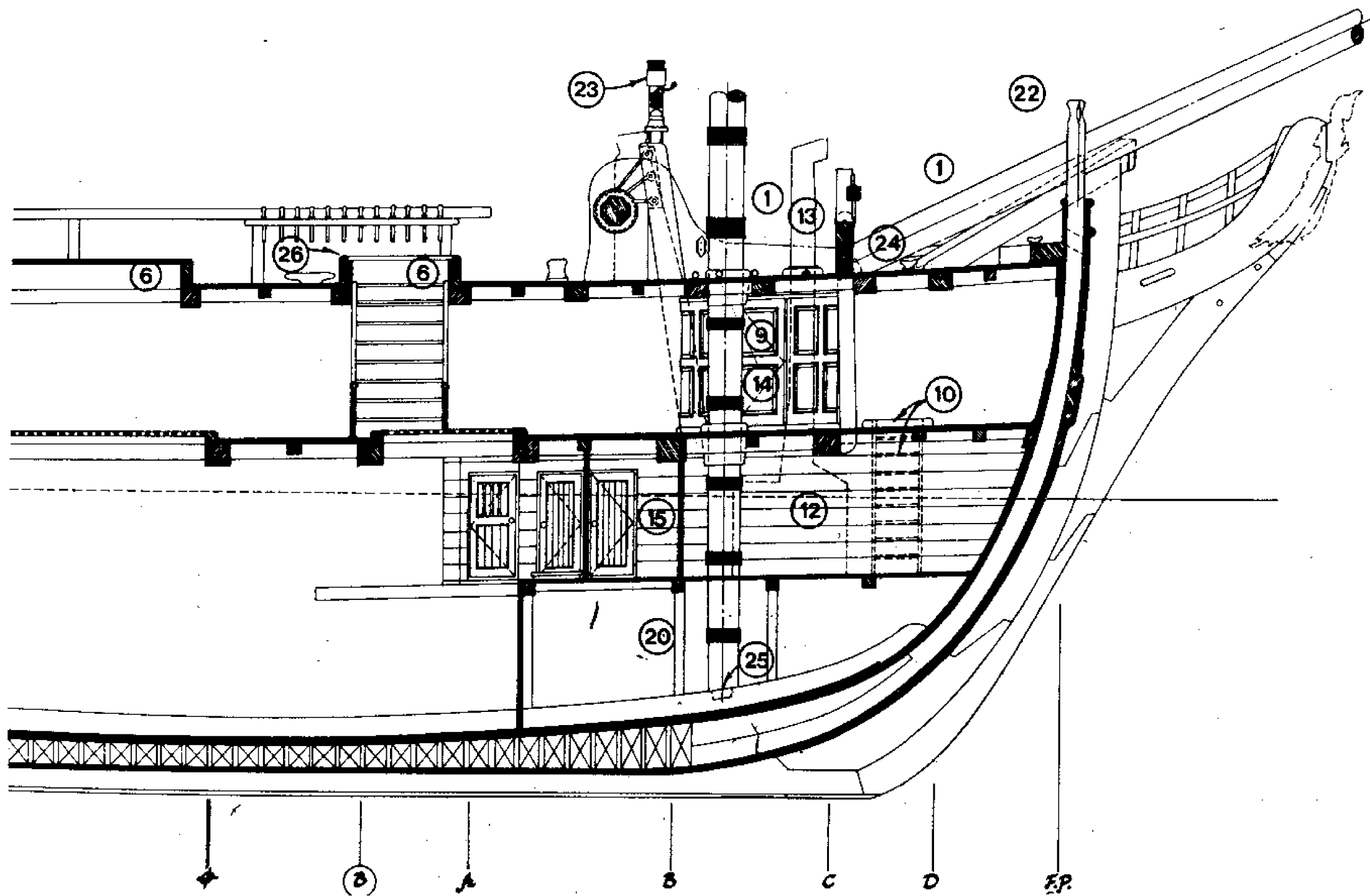


D1/2 Inboard profile of *Bethia* showing alterations (1/96 scale)

1. Swivel guns and stanchions added
2. Flag locker added
3. Fore brace bitts altered
4. Great cabin renovated to form greenhouse
5. Deck locker removed; gratings installed
6. Ports added to hatch and companionway coamings
7. Gratings added aft of wheel
8. Companionway reduced
9. Carpenter's and Boatswain's cabins removed port and starboard
10. Scuttle and ladder removed
11. Pantry and Captain's dining cabin added
12. Stove and galley removed from hold
13. Galley stove chimney removed
14. New galley stove installed
15. Cabins rearranged at fore platform
16. Cabins rearranged at aft platform
17. Air scuttles added (three locations port and three locations starboard)
18. Shot locker added
19. Hold well (pump well) added
20. Changes to hold under fore platform
21. Changes to hold under aft platform
22. Timberhead at cathead modified
23. Belfry modified at windlass pawl bitt post
24. Bowsprit steeve changed
25. Masts resteped on mast steps
26. Boat chocks and boats added



D1/2

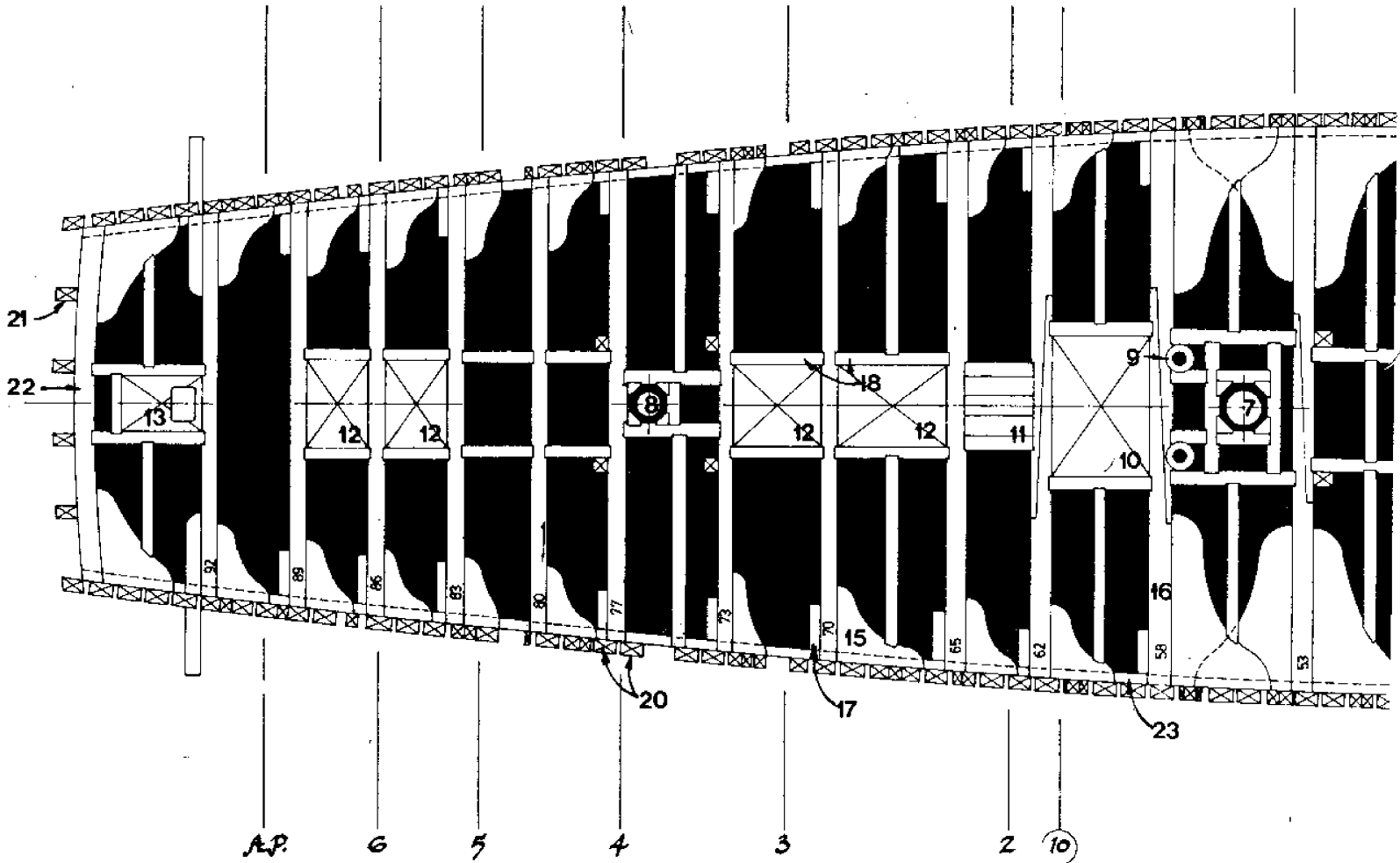


D Internal hull

D2 UPPER DECK

**D2/1 Upper deck framing plan
(1/96 scale)**

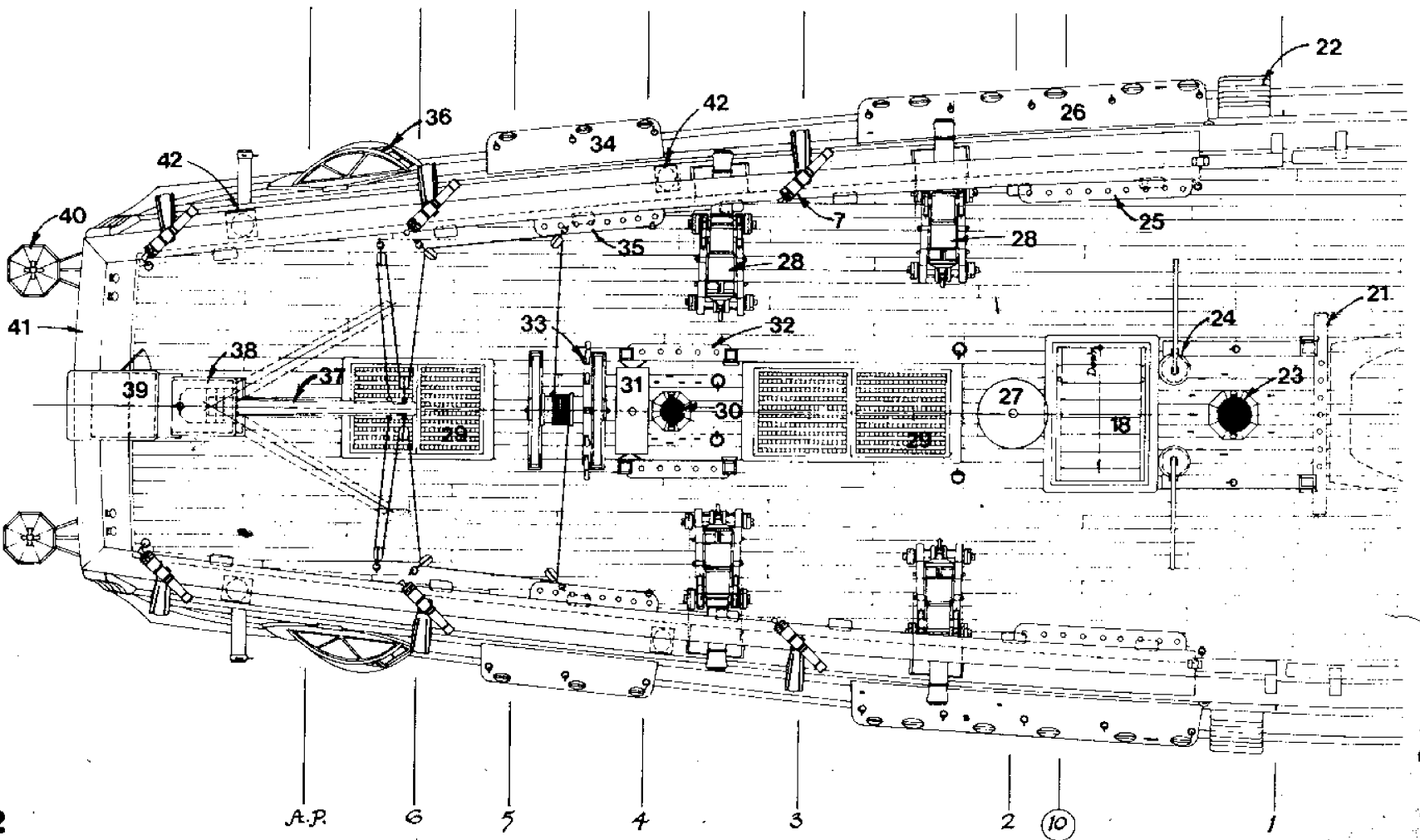
- 1. Cutwater
- 2. Open for scuttle
- 3. Open for galley chimney
- 4. Foremast
- 5. Open for companionway
- 6. Main hatch
- 7. Mainmast
- 8. Mizzen mast
- 9. Elm tree pump
- 10. Open for companionway
- 11. Carlings (support for capstan)
- 12. Open for gratings
- 13. Open for rudder
- 14. Deck clamp
- 15. Lodging knee
- 16. Deck beams – numbers correspond to adjacent frames
- 17. Hanging knees
- 18. Fore-and-aft carlings
- 19. Athwartship carlings (ledges)
- 20. Frames
- 21. Stern timber
- 22. Deck transom
- 23. Deck clamp



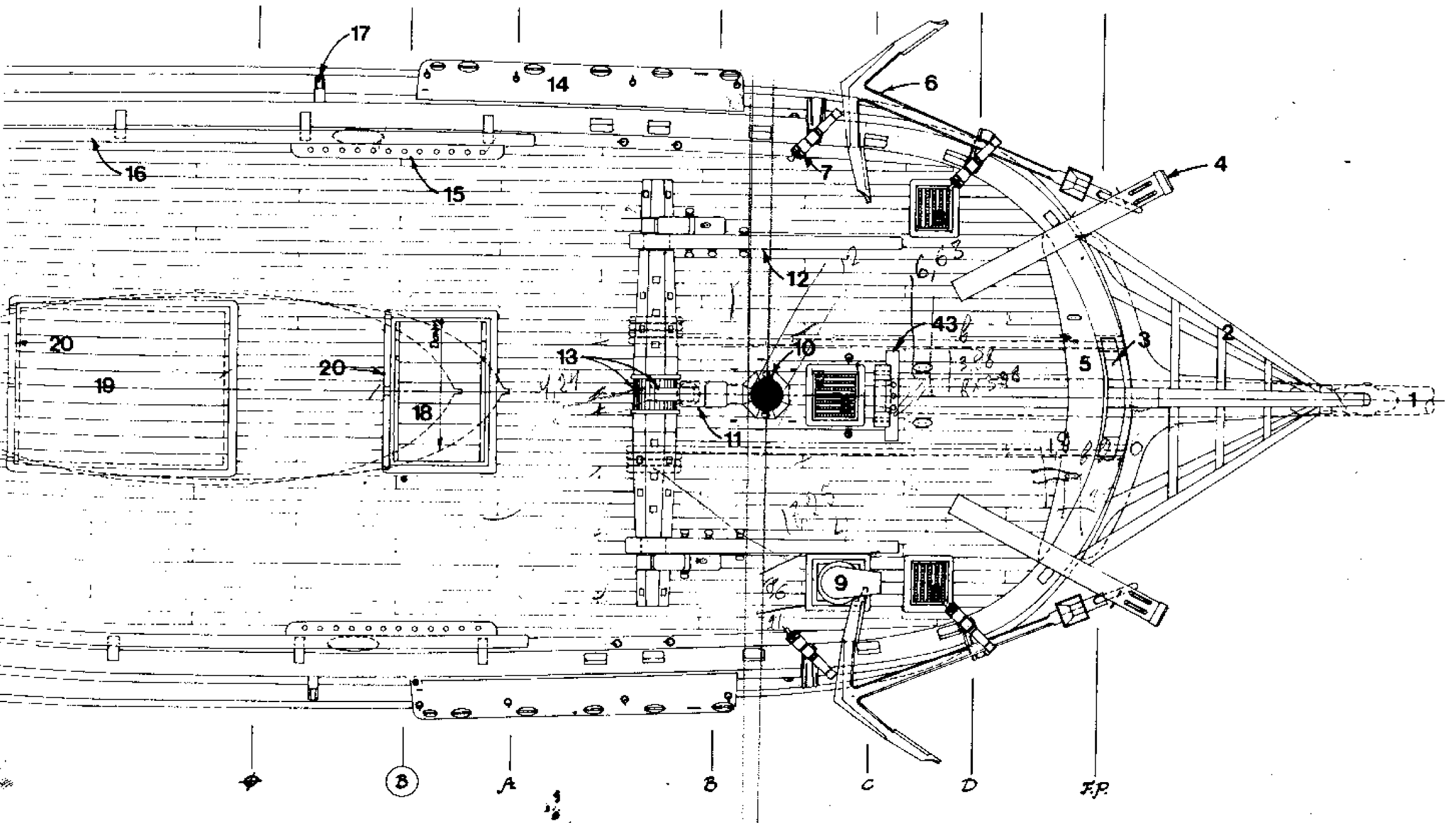
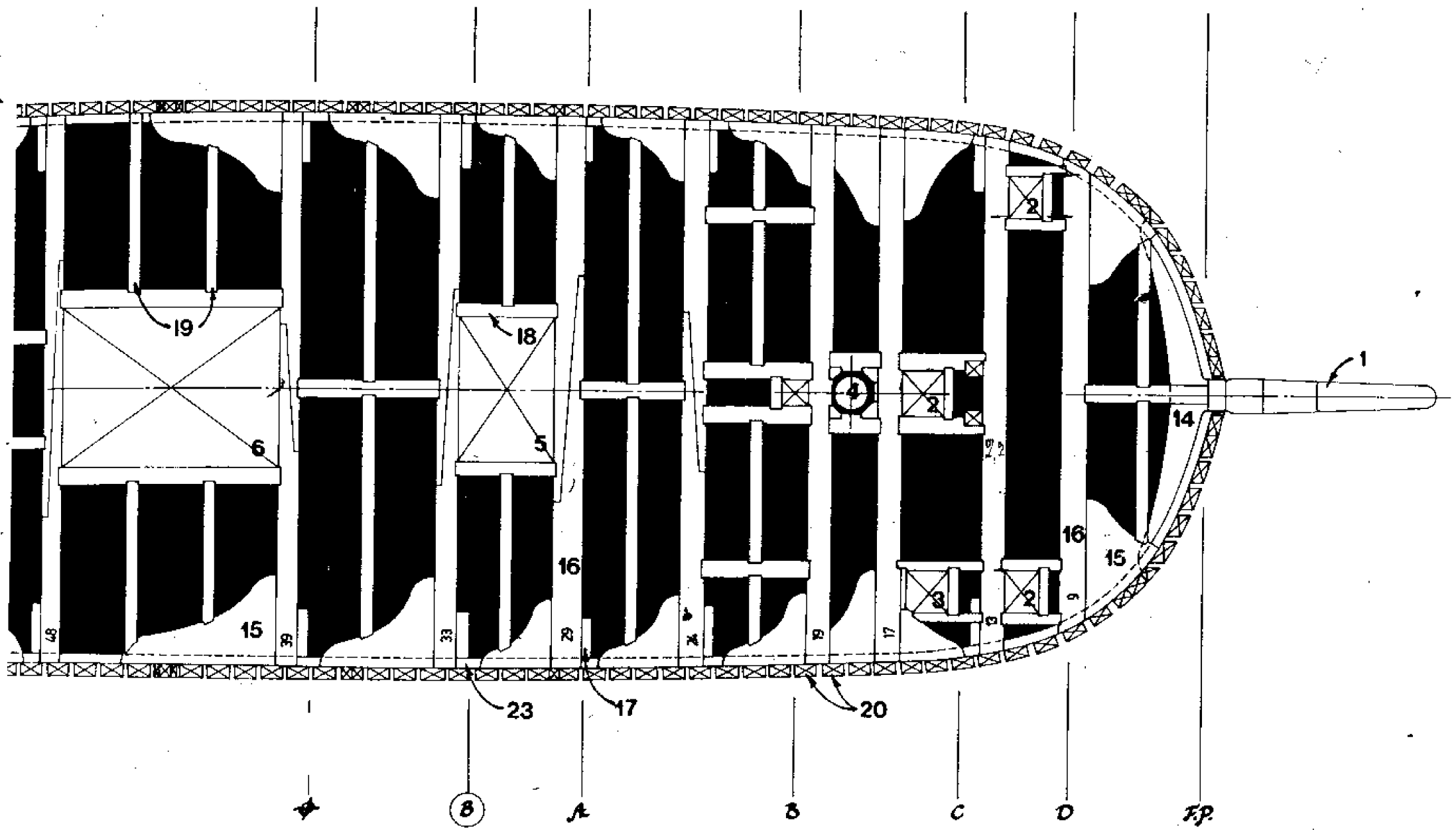
D2/1

D2/2 Upper deck (1/96 scale)

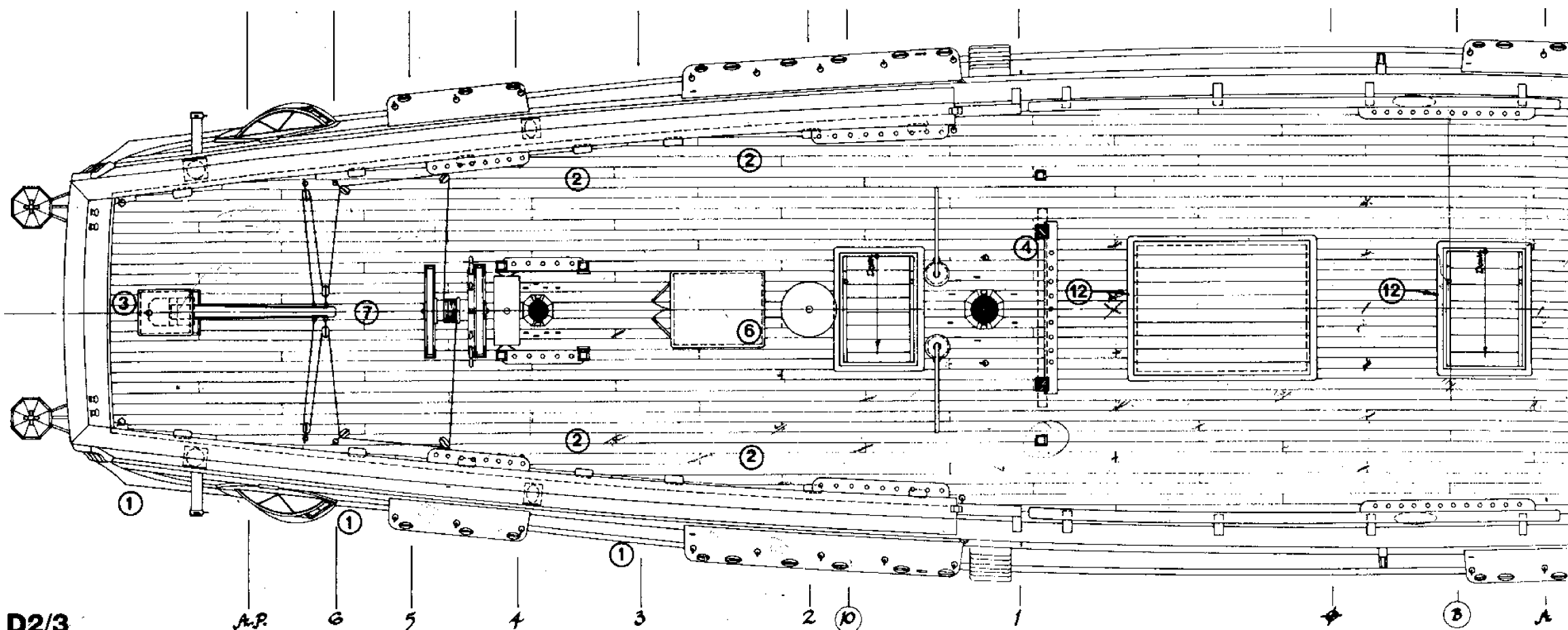
- 1. Bowsprit
- 2. Head rails
- 3. Knighthead
- 4. Cathead
- 5. Breast hook
- 6. Bower anchor
- 7. Half-pounder swivel
- 8. Scuttle (with grating)
- 9. Galley stove chimney
- 10. Foremast
- 11. Pawl bitt post
- 12. Carrick bitts
- 13. Pawls and pawl rim
- 14. Fore channel
- 15. Fore pin rail
- 16. Rail
- 17. Chesstree
- 18. Companionway
- 19. Main hatch
- 20. Boat chock
- 21. Fore brace bitts
- 22. Side ladder
- 23. Mainmast
- 24. Elm tree pump
- 25. Main pin rail
- 26. Main channel
- 27. Capstan
- 28. 4-pounder gun (short)
- 29. Grating
- 30. Mizzen mast
- 31. Binnacle
- 32. Mizzen topsail sheet bitts
- 33. Steering wheel
- 34. Mizzen channel
- 35. Poop pin rail
- 36. Quarter gallery or badge light
- 37. Tiller
- 38. Rudder head housing
- 39. Flag locker
- 40. Stern lantern
- 41. Taffrail
- 42. Sheave (in bulwark)
- 43. Fore topsail sheet bitts



D2/2



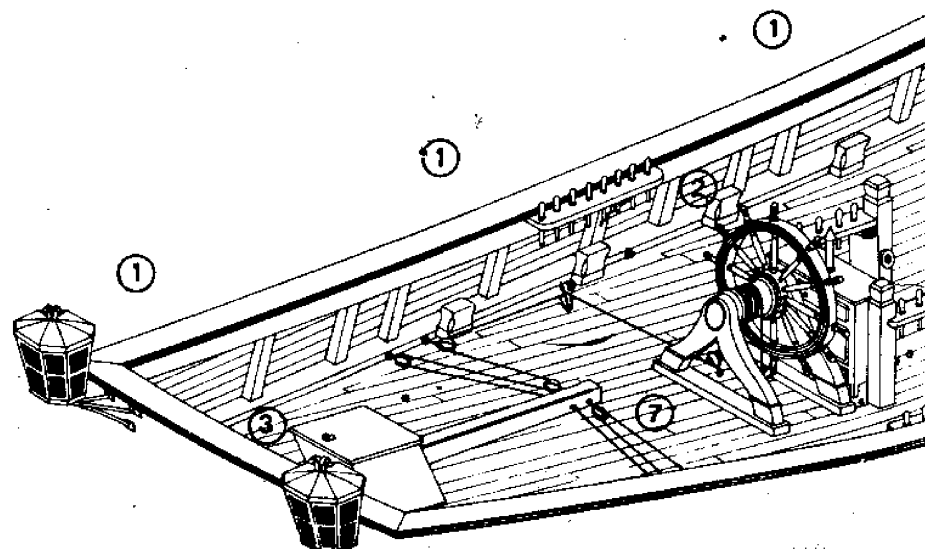
D Internal hull

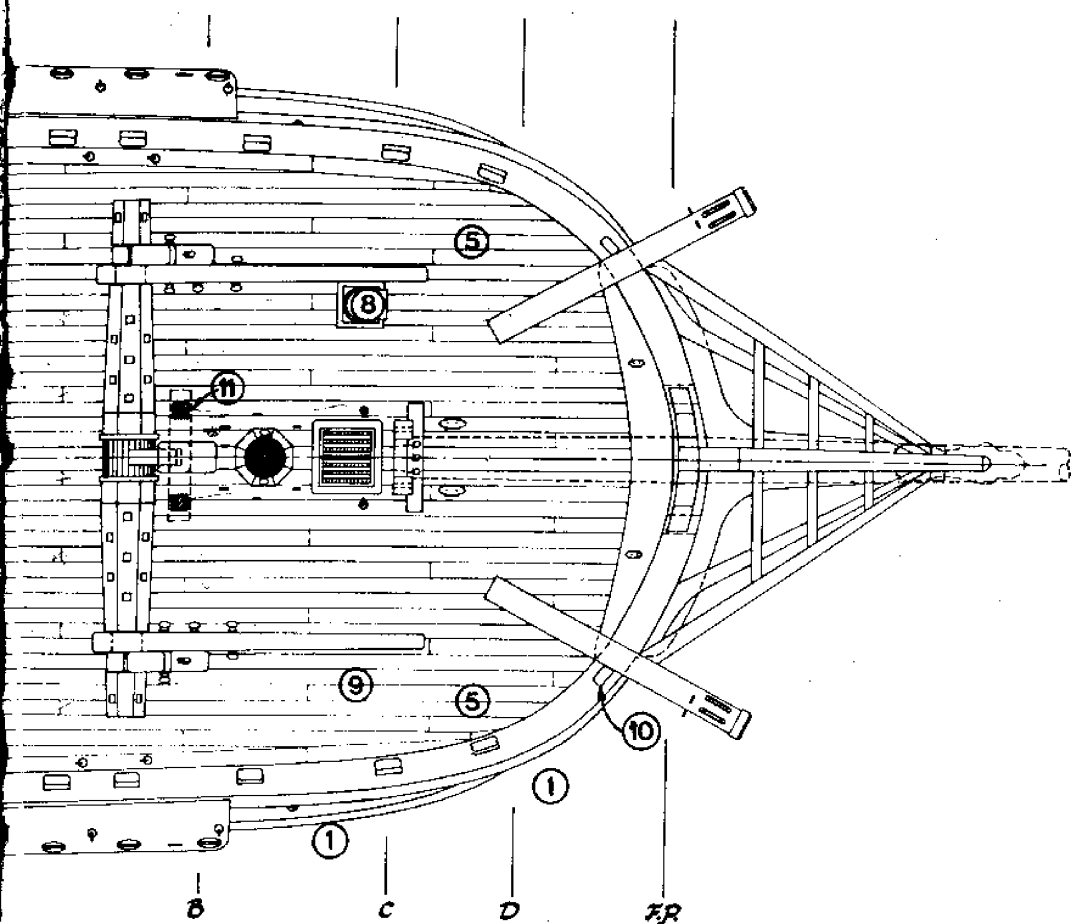


D2/3

D2/3 Upper deck plan of *Bethia* showing alterations (1/96 scale)

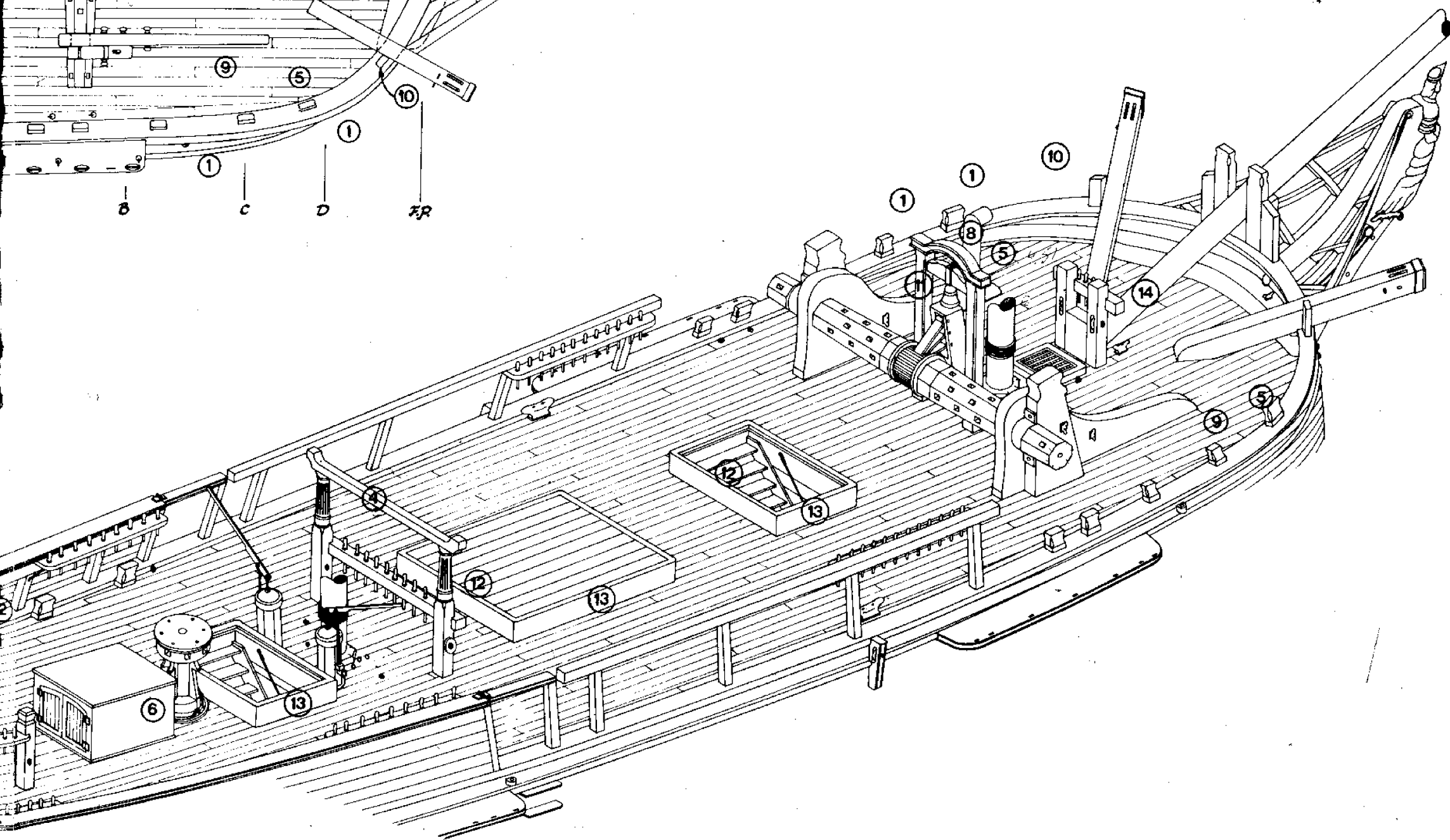
1. Swivel guns and stanchions added (five locations port and five locations starboard)
2. 4-pounder guns added and ports cut into bulwarks (two locations port and two locations starboard)
3. Flag locker added
4. Fore brace bitts altered
5. Air scuttles added to forecastle port and starboard
6. Deck locker removed; gratings installed
7. Gratings installed aft of wheel
8. Galley stove chimney removed
9. Galley stove chimney installed
10. Timberhead at cathead modified
11. Modifications to belfry at windlass pawl bitt
12. Boat chocks and boats added





D2/4 Upper deck isometric of *Bethia* showing alterations (no scale)

1. Swivel guns and stanchions added
2. 4-pounder guns added and ports cut into bulwarks
3. Flag locker added
4. Fore brace bitts altered
5. Air scuttles added to forecastle port and starboard
6. Deck locker removed; gratings added
7. Gratings installed aft of wheel
8. Galley stove chimney removed
9. Galley stove chimney added
10. Timberhead at cathead modified
11. Belfry modified
12. Boat chocks and boats added
13. Ports added to hatch and companionway coamings
14. Bowsprit steeve changed



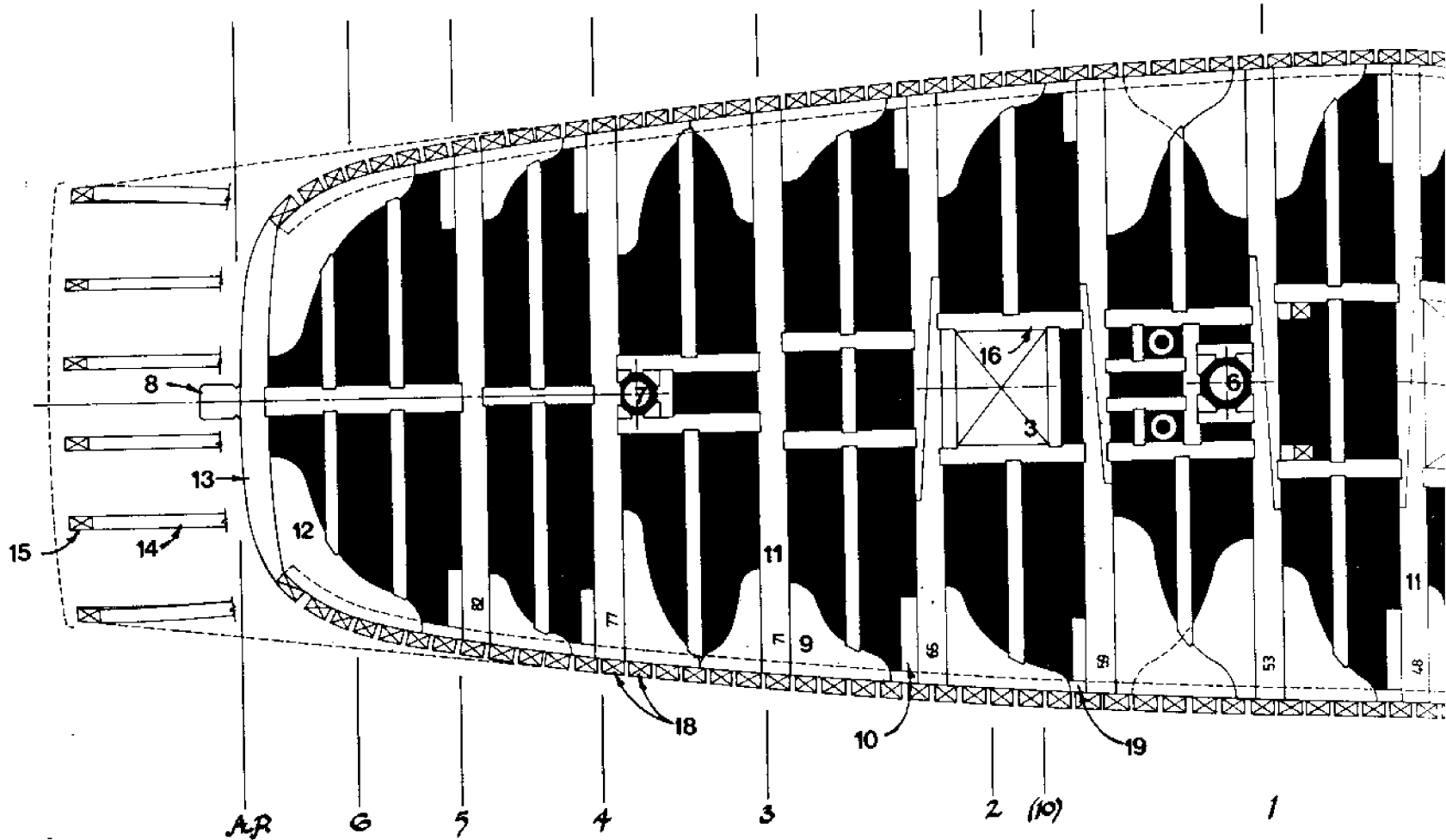
D Internal hull

D3 LOWER DECK

D3/1 Lower deck framing plan (1/96 scale)

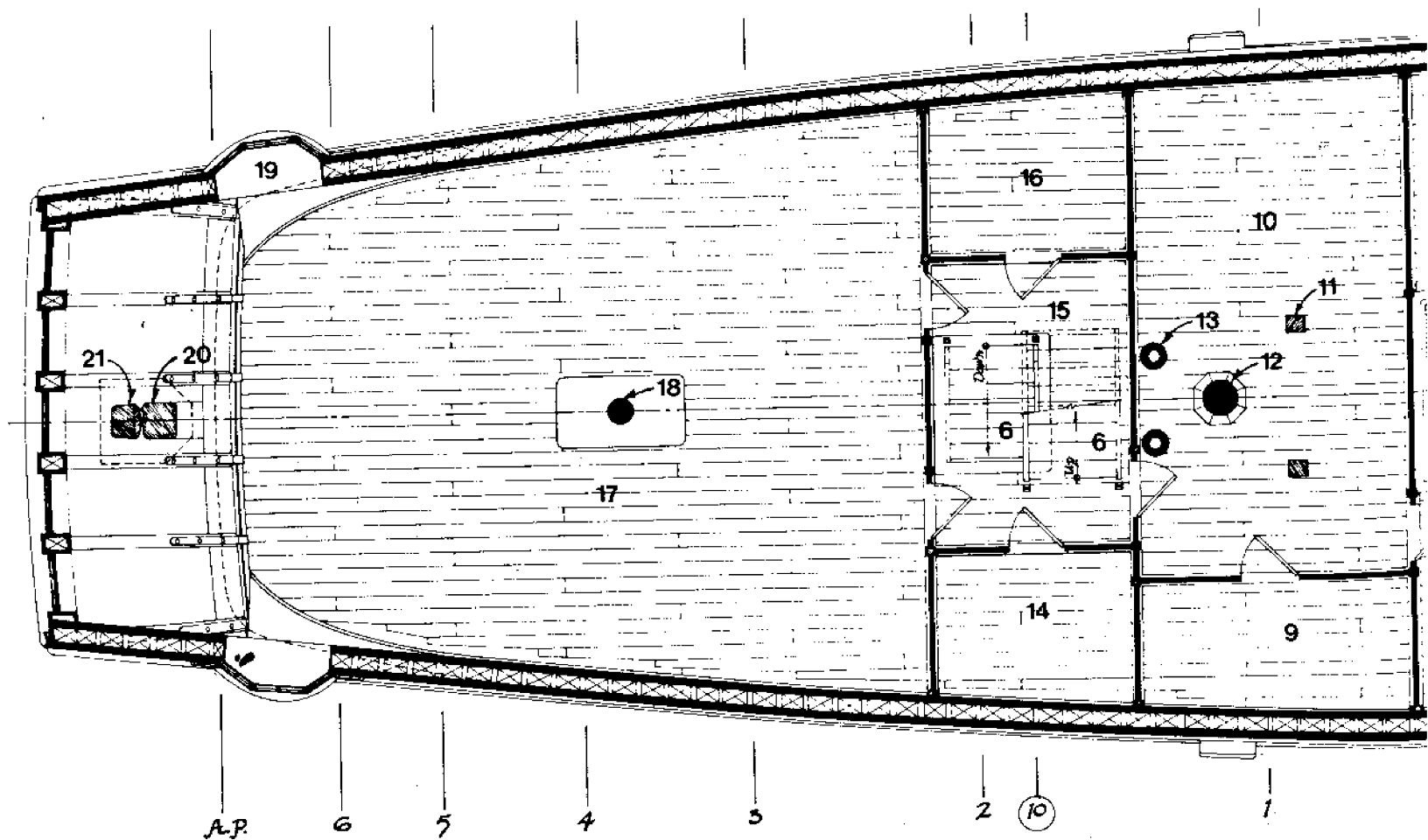
- 1. Cutwater
- 2. Foremast
- 3. Open for companionway
- 4. Fore hatch
- 5. Main hatch
- 6. Mainmast
- 7. Mizzen mast
- 8. Stern post
- 9. Lodging knee
- 10. Hanging knee
- 11. Deck beams – numbers correspond to adjacent frames
- 12. Transom knee
- 13. Transom
- 14. Counter timber
- 15. Stern timber
- 16. Fore-and-aft carlings
- 17. Athwartship carlings (ledges)
- 18. Frames
- 19. Deck clamp

D3/1

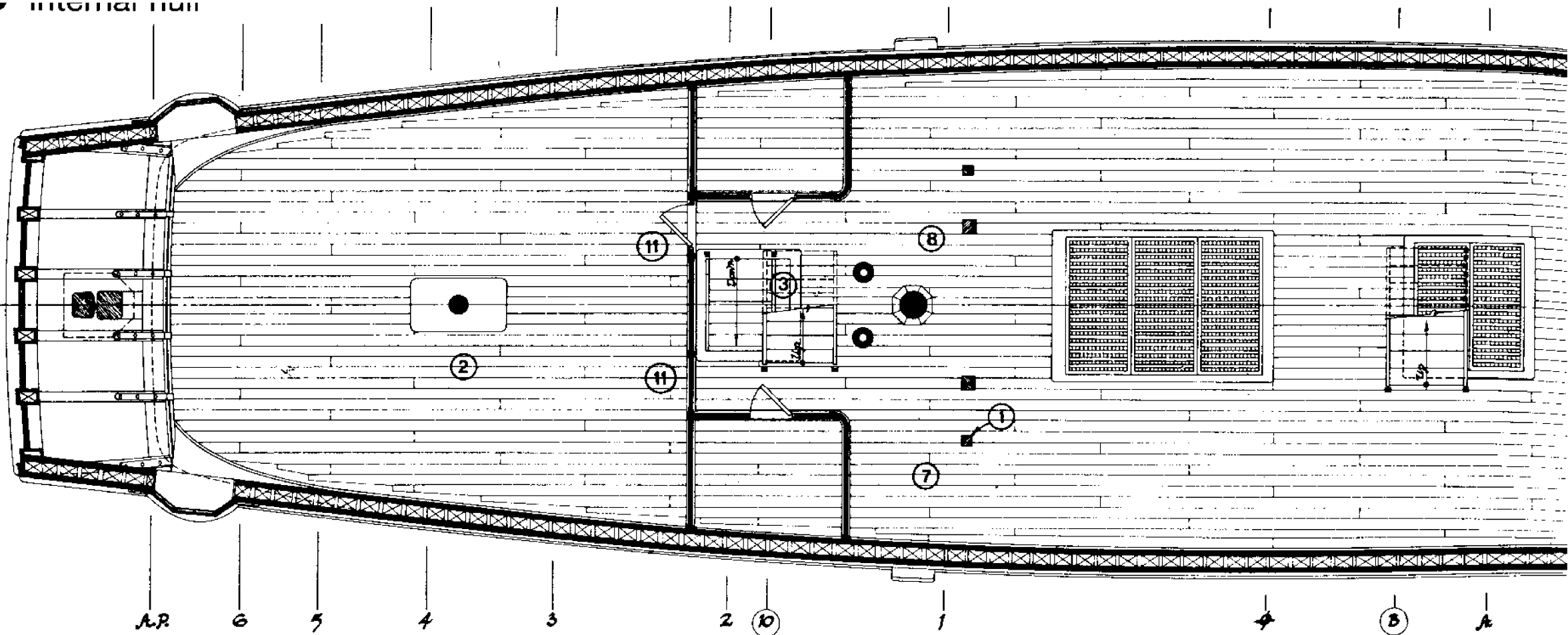


D3/2 Lower deck (1/96 scale)

- 1. Cutwater
- 2. Pin of fore topsail sheet bitts
- 3. Galley stove
- 4. Foremast
- 5. Pawl bitt post
- 6. Companionway
- 7. Fore hatch
- 8. Main hatch
- 9. Pantry
- 10. Captain's dining cabin
- 11. Pin of fore brace bitts
- 12. Mainmast
- 13. Elm tree pump
- 14. Captain's cabin
- 15. Lobby
- 16. Master's cabin
- 17. Garden (great cabin)
- 18. Mizzen mast
- 19. Quarter gallery
- 20. Stern post
- 21. Rudder



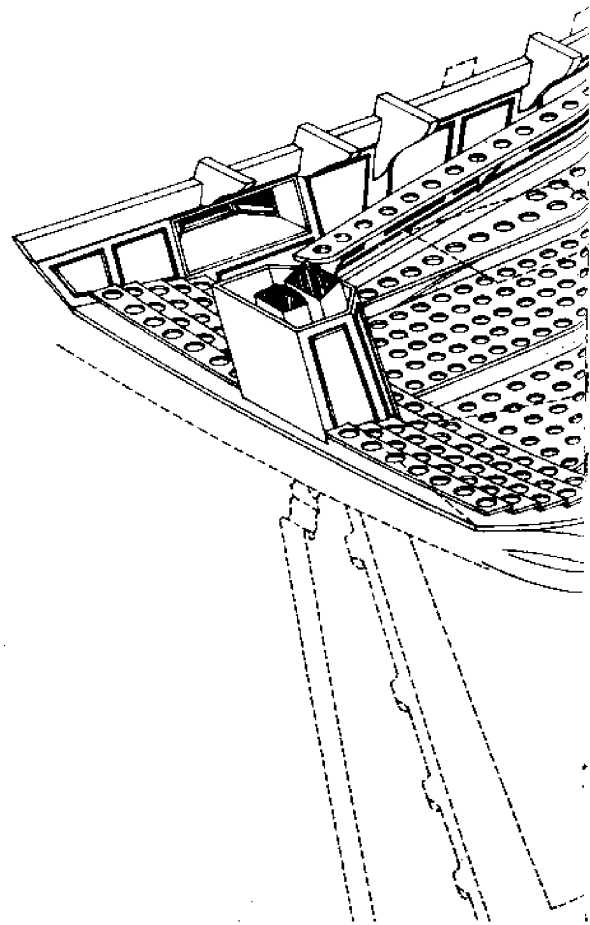
Internal Hull

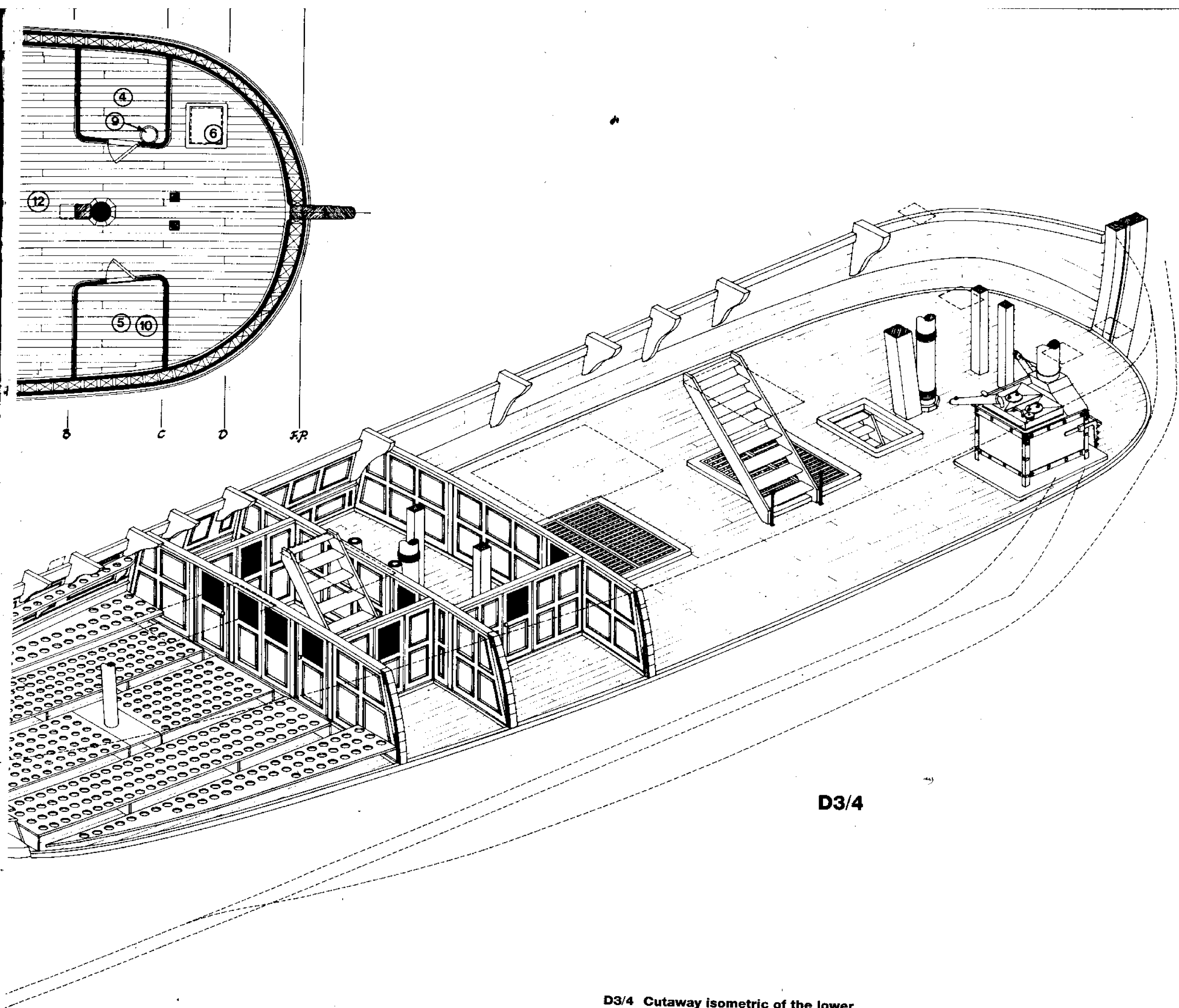


D3/3

D3/3 Lower deck plan of *Bethia* showing alterations (1/96 scale)

1. Fore brace bitts altered
2. Great cabin altered to form greenhouse
3. Aft companionway reduced
4. Boatswain's cabin removed
5. Carpenter's cabin removed
6. Scuttle (and ladder) to galley removed
7. Pantry added
8. Captain's dining room added
9. Galley stove chimney removed
10. Galley stove chimney installed
11. Doors changed to great cabin (garden)
12. Companionway to fore platform added





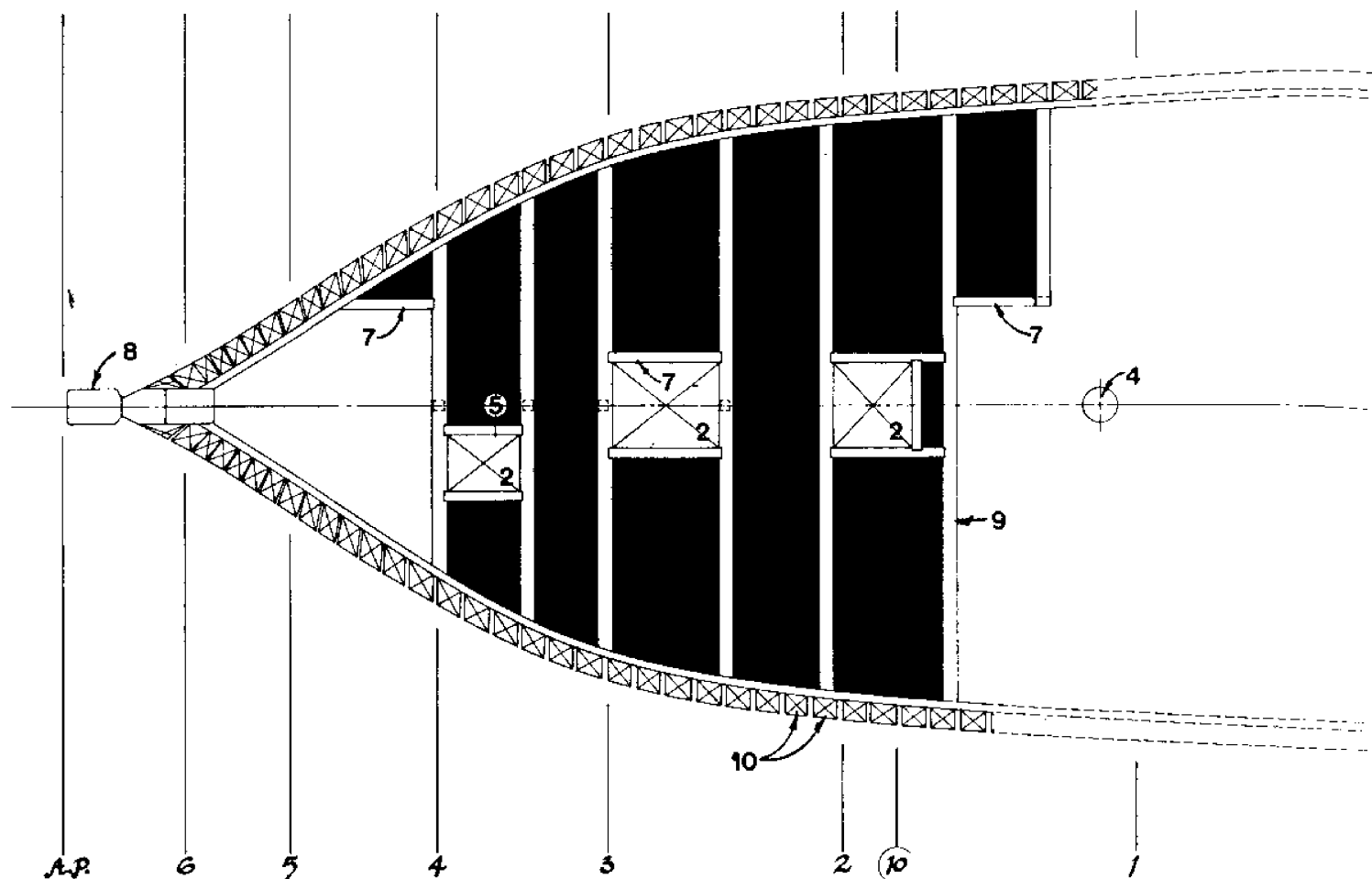
INTERNAL PLAN

D4 HOLD

D4/1

D4/1 Platform framing (1/96 scale)

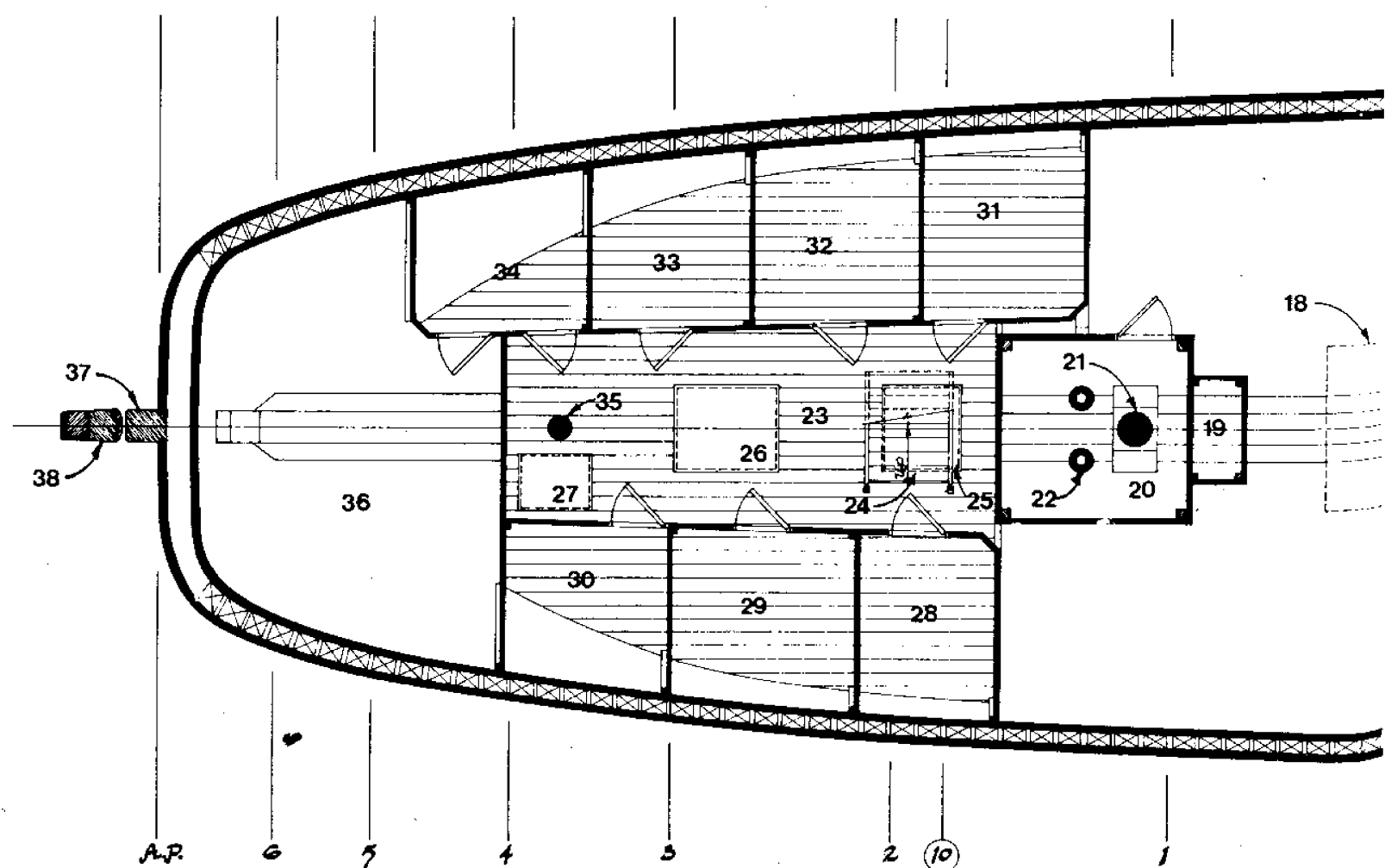
1. Cutwater
2. Open for scuttles
3. Foremast
4. Mainmast
5. Mizzen mast
6. Beam (to support cabin over)
7. Carlings
8. Stern post
9. Beams (note pillars under)
10. Frames

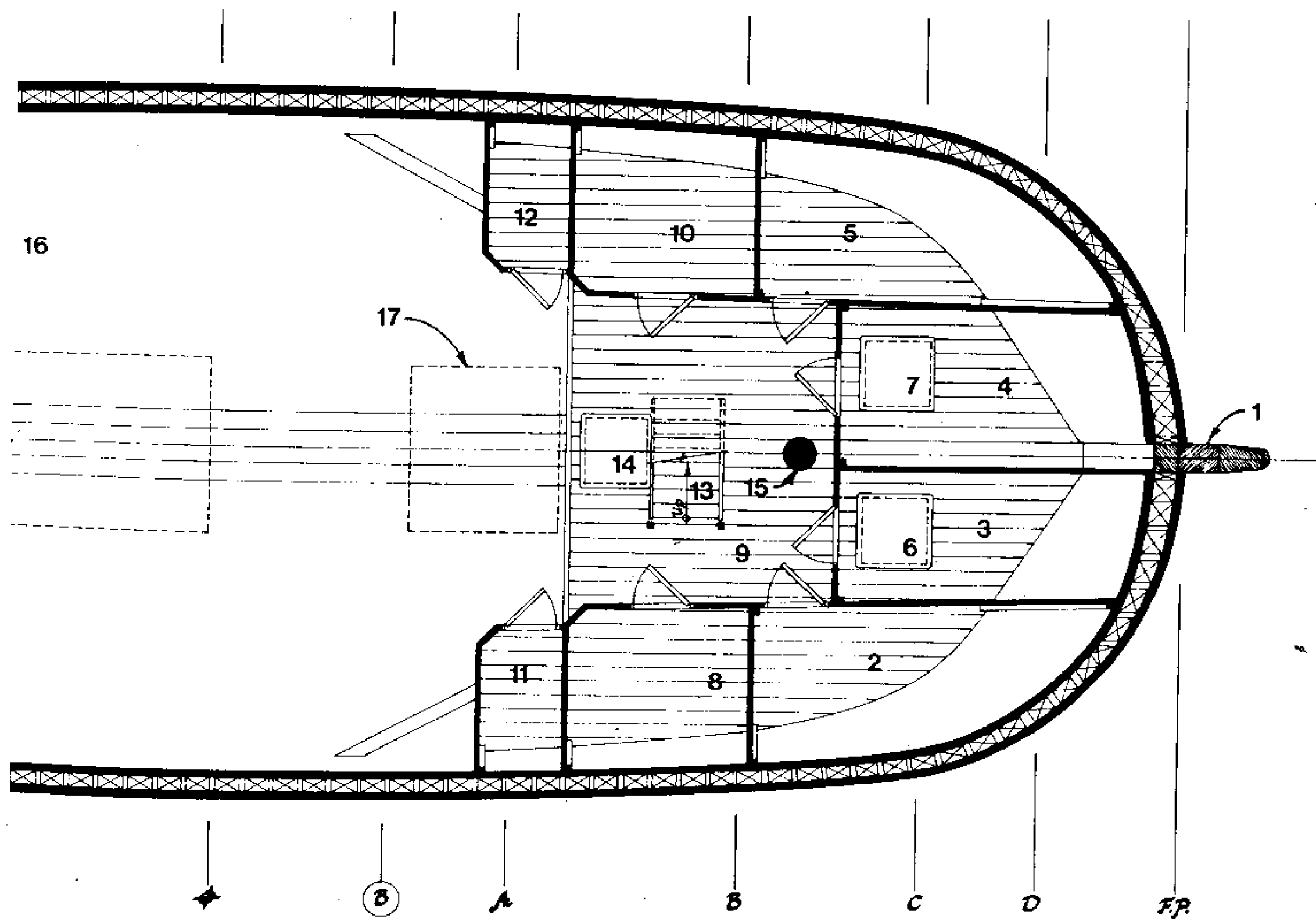
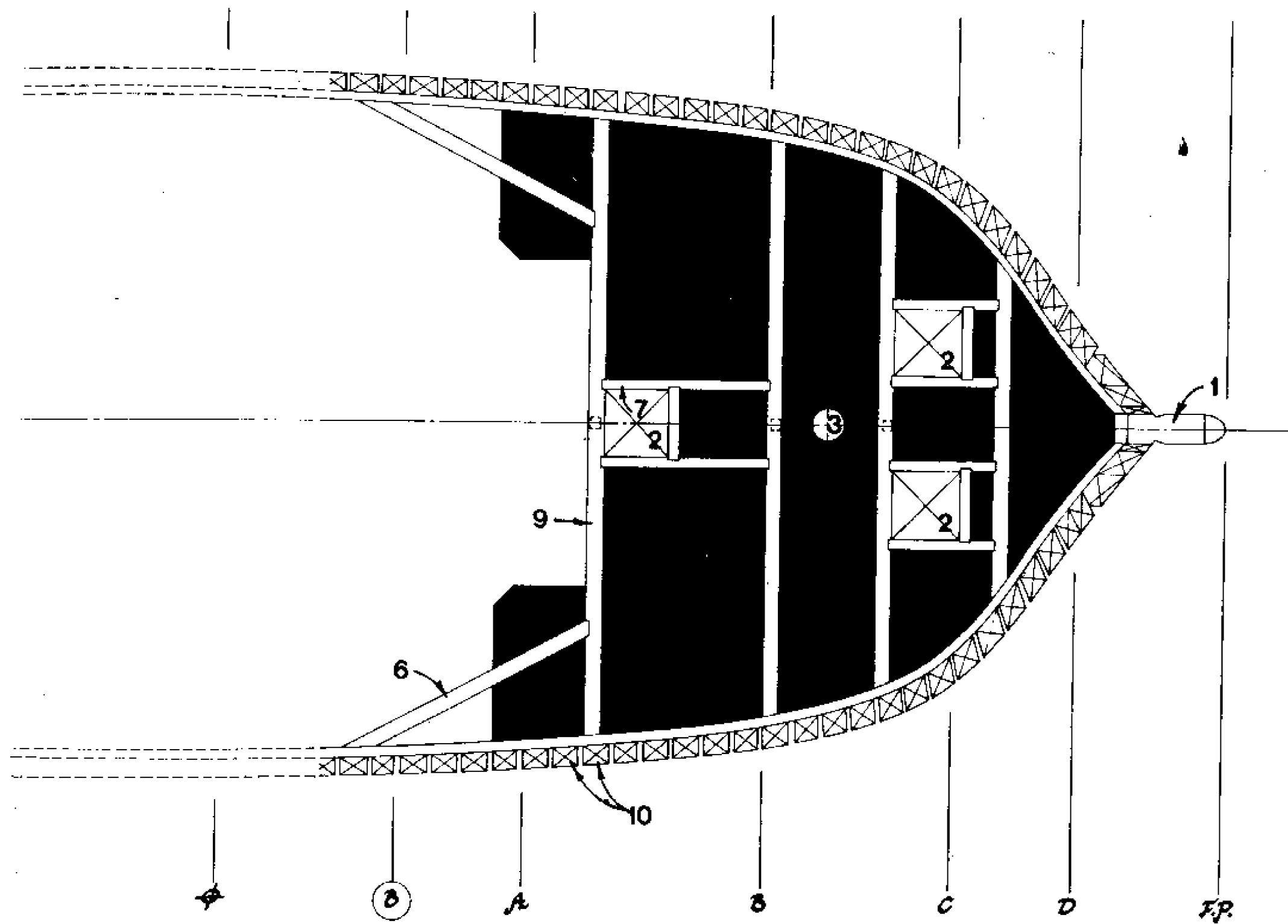


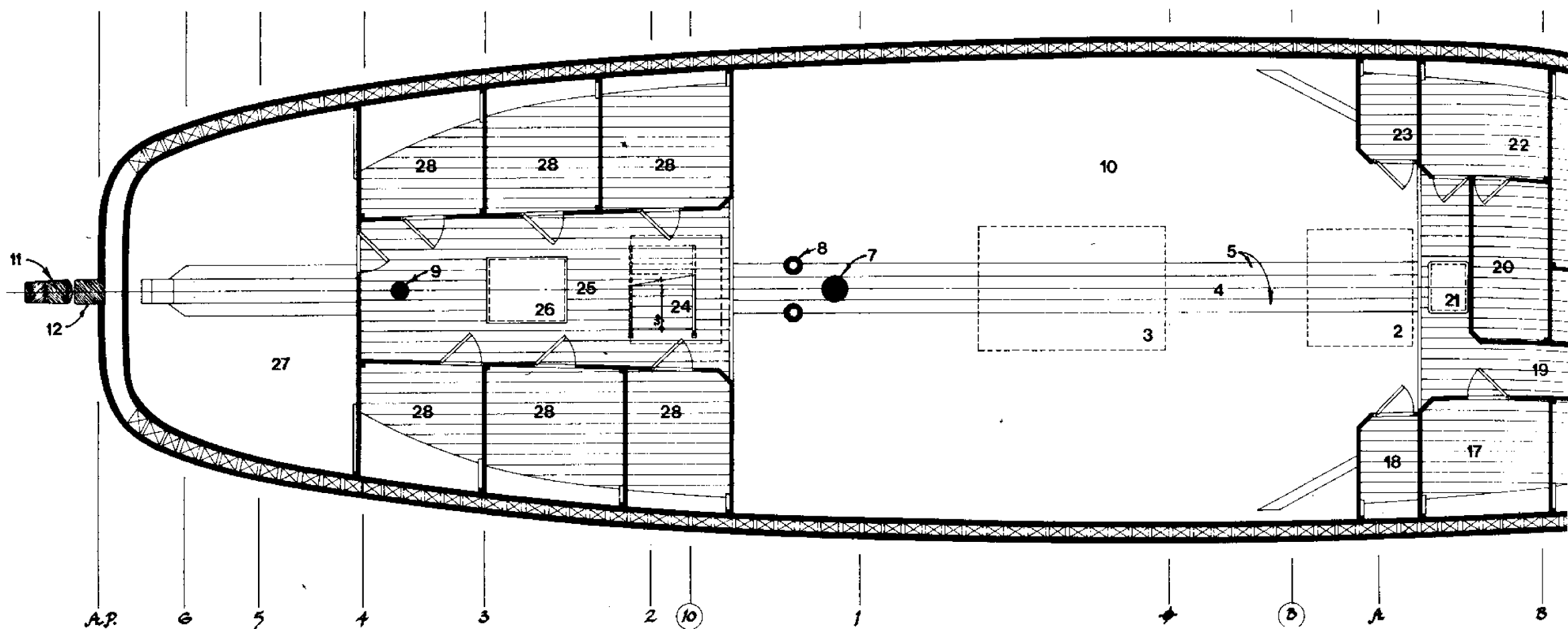
D4/2 Hold (1/96 scale)

1. Cutwater
2. Carpenter's store room
3. Gunner's store room
4. Boatswain's store room
5. Sail room
6. Scuttle to magazine
7. Scuttle to Boatswain's stores
8. Carpenter's cabin
9. Fore platform
10. Boatswain's cabin
11. Pitch room
12. Block room
13. Companionway
14. Scuttle to sail room
15. Foremast
16. Hold
17. Fore hatch over
18. Main hatch over
19. Shot locker
20. Hold well or pump well
21. Mainmast
22. Elm tree pumps
23. Aft platform
24. Companionway
25. Scuttle to spirit room
26. Scuttle to fish room
27. Scuttle to magazine
28. Slop room
29. Captain's store room
30. Gunner's cabin
31. Botanist's cabin
32. Captain's clerk's cabin
33. Surgeon's cabin
34. Steward's room
35. Mizzen mast
36. Bread room
37. Stern post
38. Rudder

D4/2



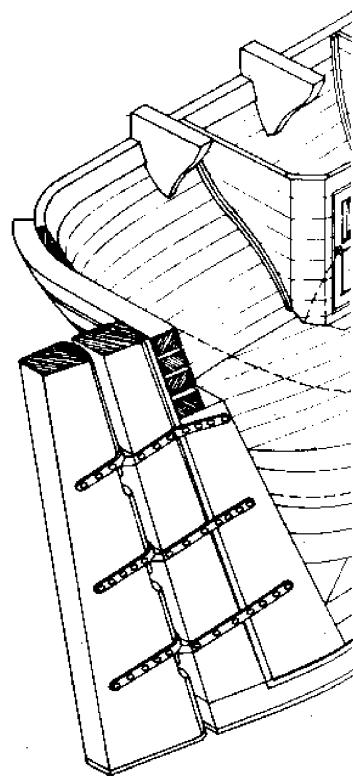


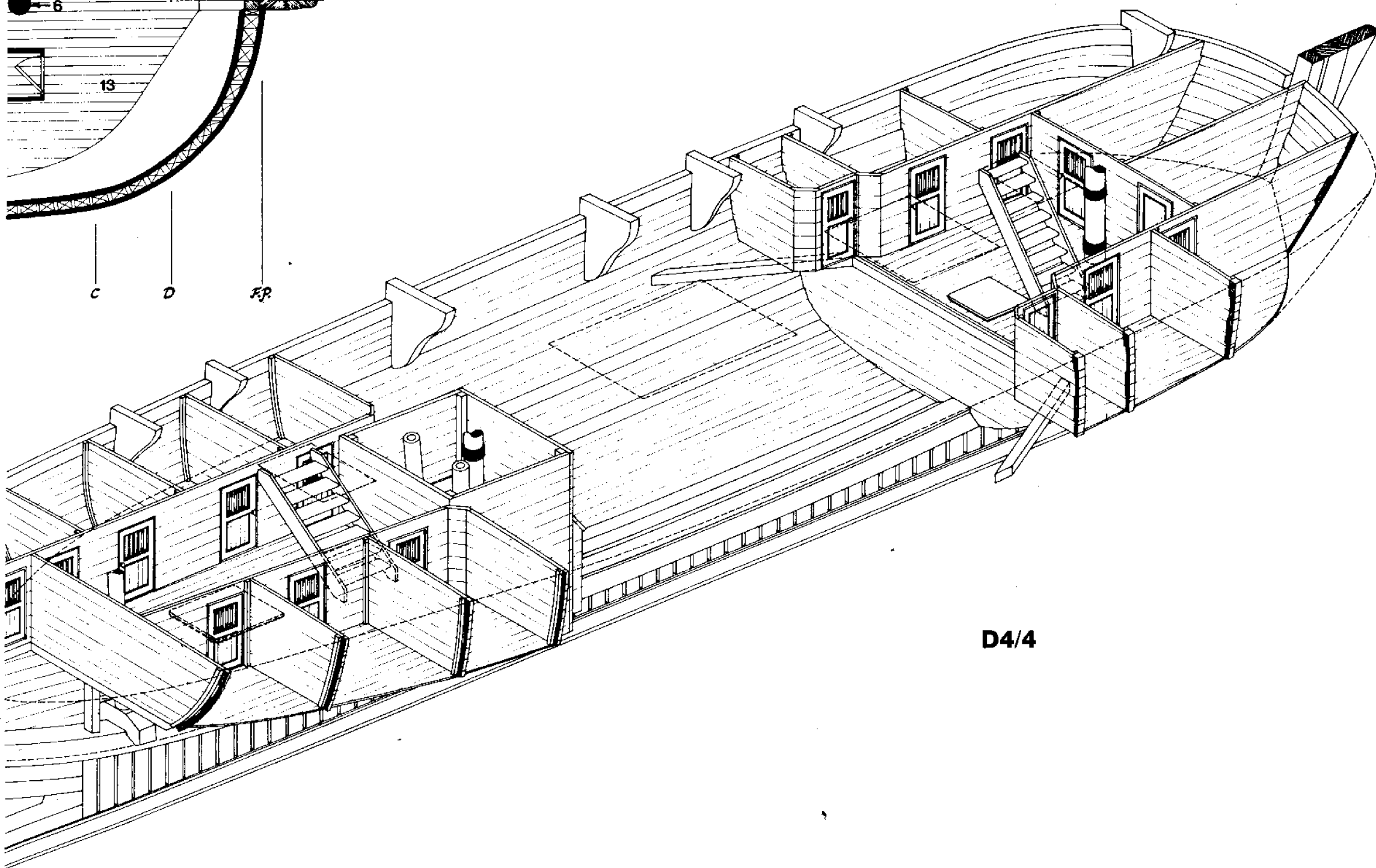
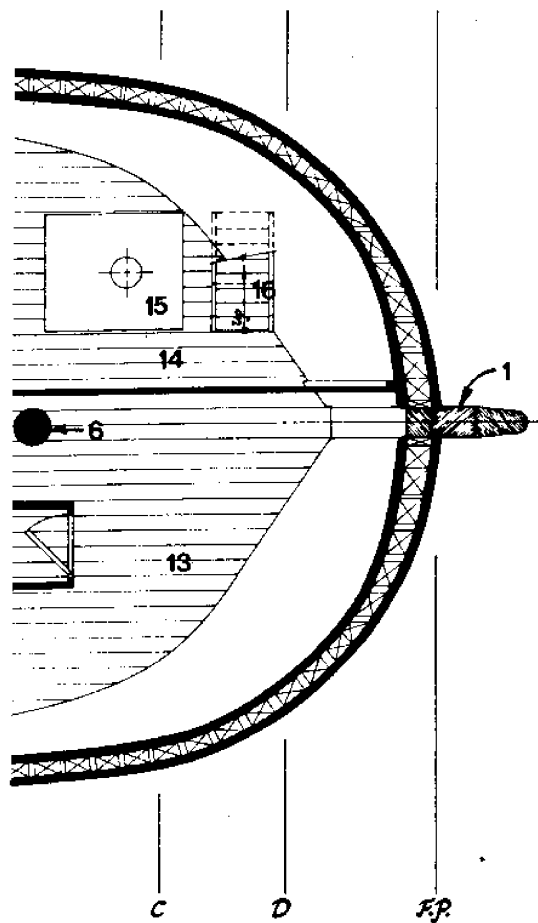


D4/3

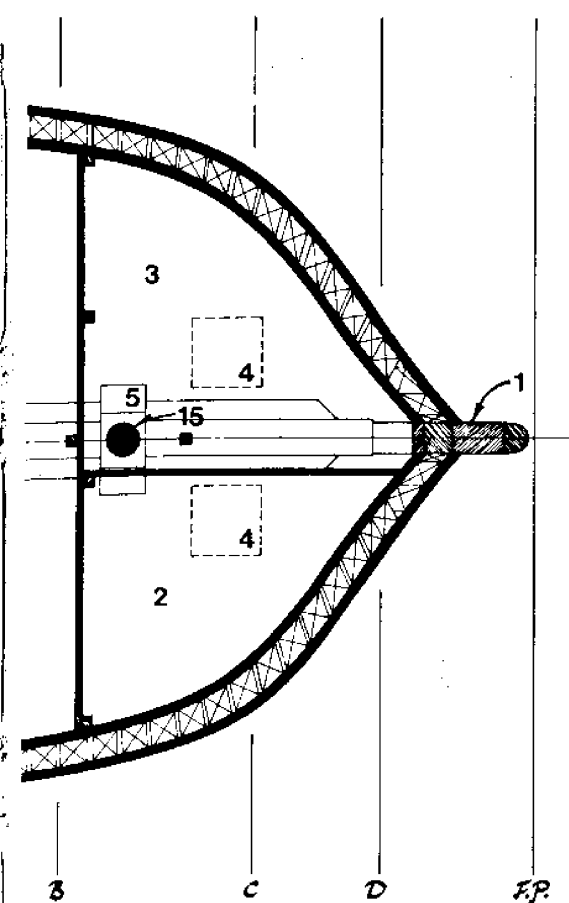
D4/3 Hold plan of *Bethia* (1/96 scale)

1. Cutwater
2. Fore hatch over
3. Main hatch over
4. Keelson
5. Limber board
6. Foremast
7. Mainmast
8. Elm tree pumps
9. Mizzen mast
10. Hold
11. Rudder
12. Stern post
13. Sail room
14. Galley
15. Galley stove
16. Ladder (scuttle over)
17. Carpenter's store room
18. Pitch room
19. Passage
20. Sail room
21. Scuttle
22. Boatswain's store room
23. Block room
24. Companionway
25. Aft platform
26. Scuttle
27. Bread room
28. Cabins and store rooms





D4/4



D5 STERN GARDEN

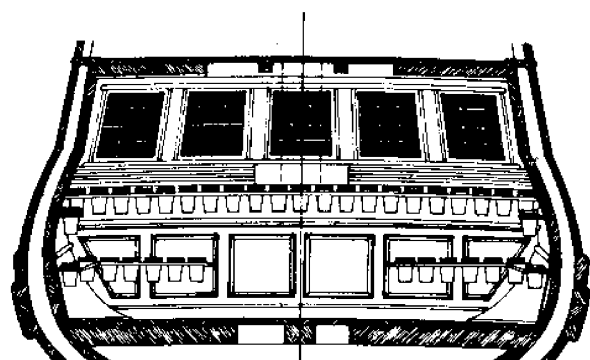
D5/1 Plan (1/96 scale)

1. Captain's cabin
2. Lobby
3. Master's cabin
4. Garden
5. Mizzen mast
6. Pot racks
7. Pot racks at ship's side
8. Quarter gallery

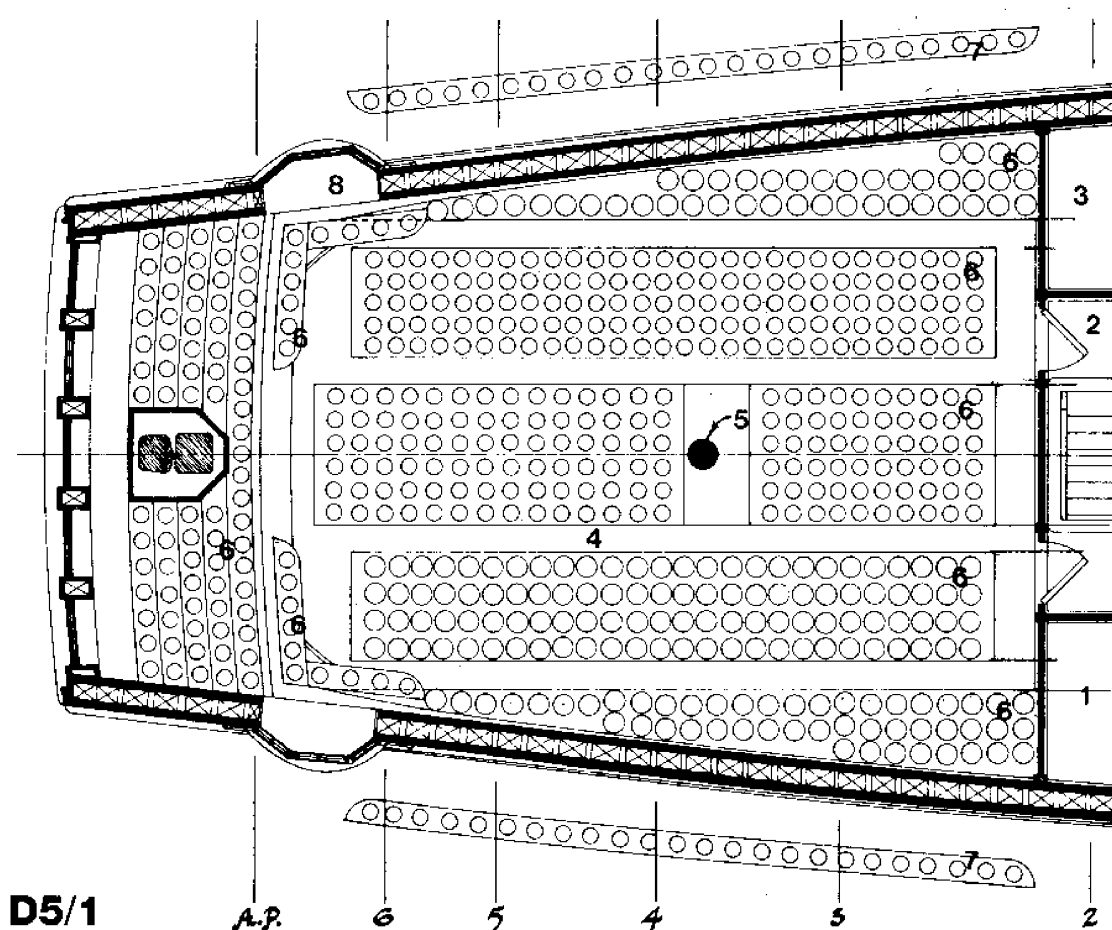
D5/2 Side elevation (1/96 scale)

1. Garden
2. Gratings
3. Line of mizzen mast
4. Pot racks

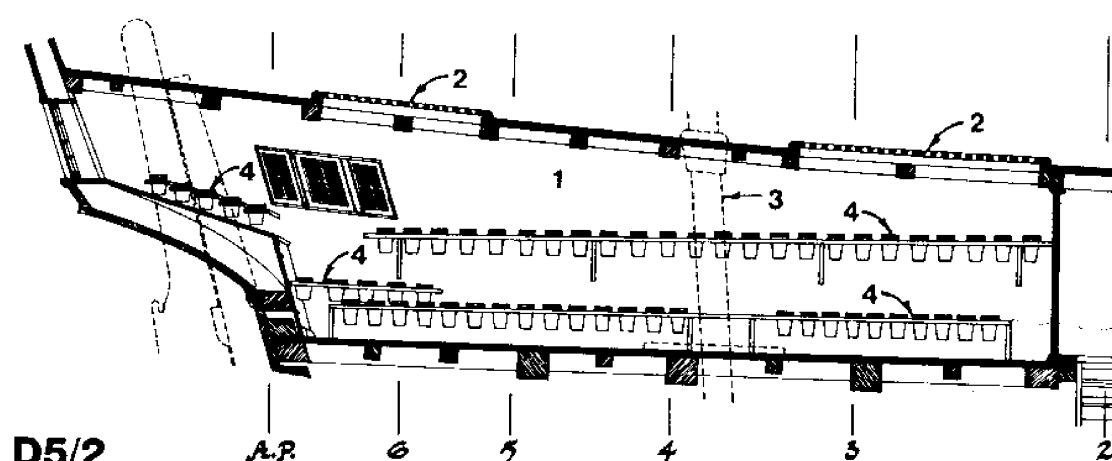
D5/3 Aft elevation (1/96 scale)



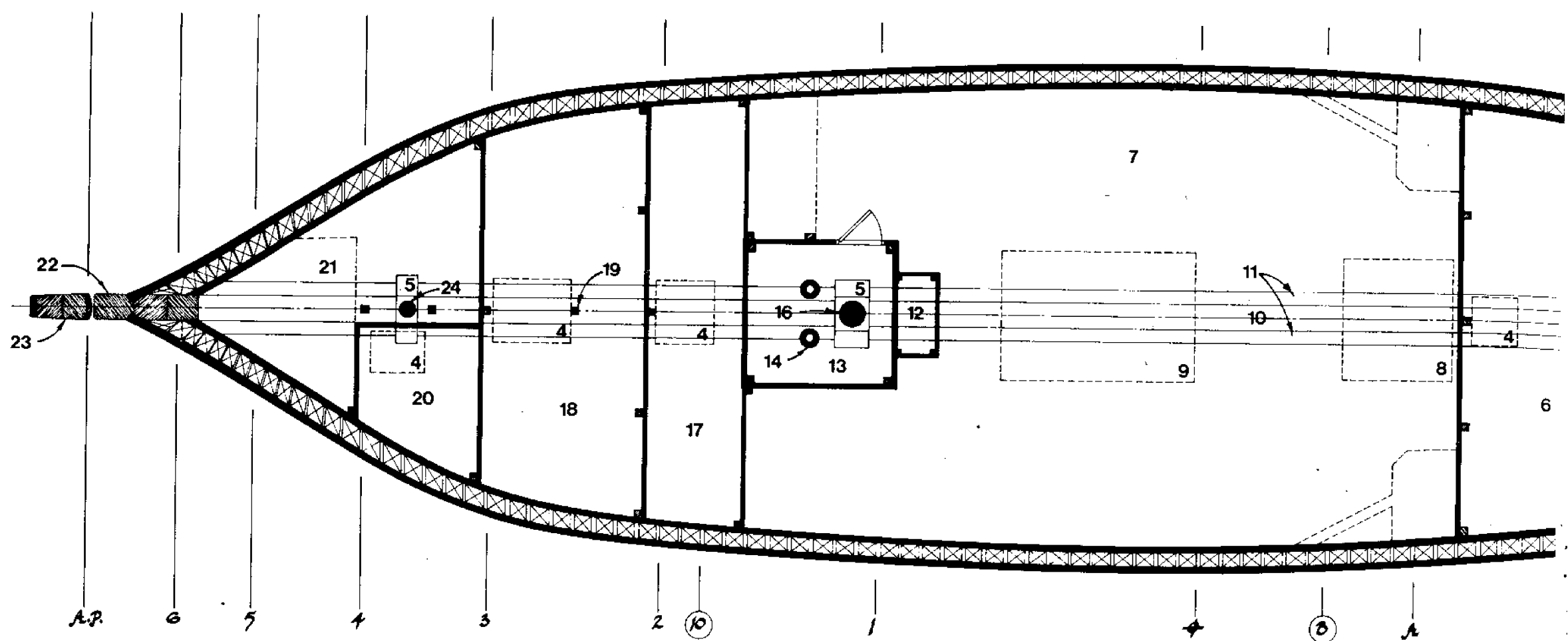
D5/3



D5/1



D5/2

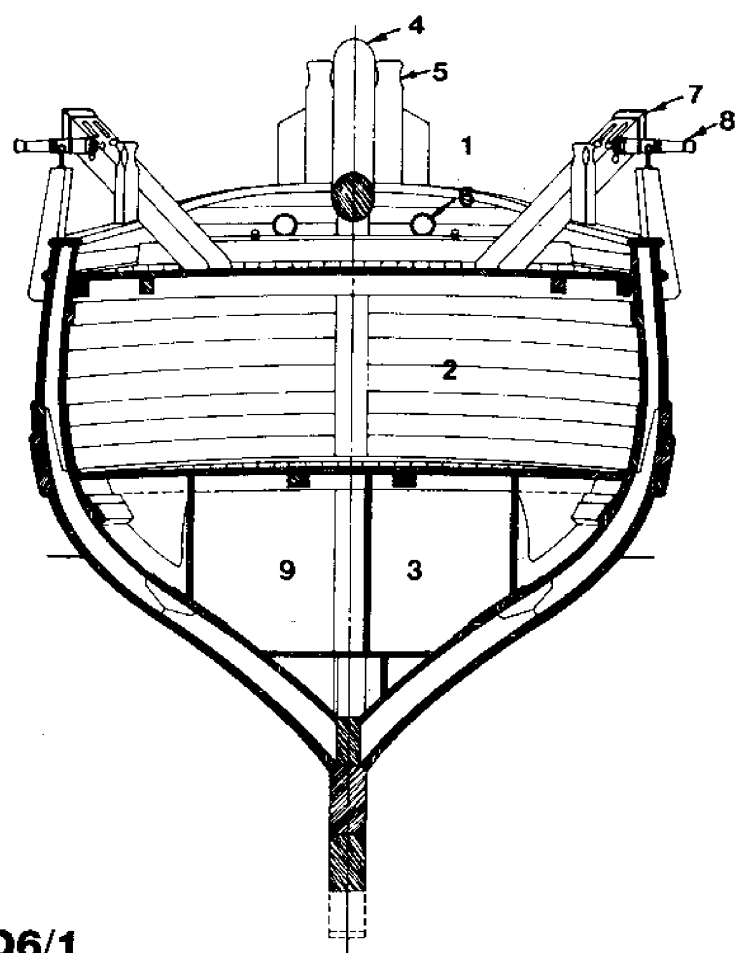


D4/5

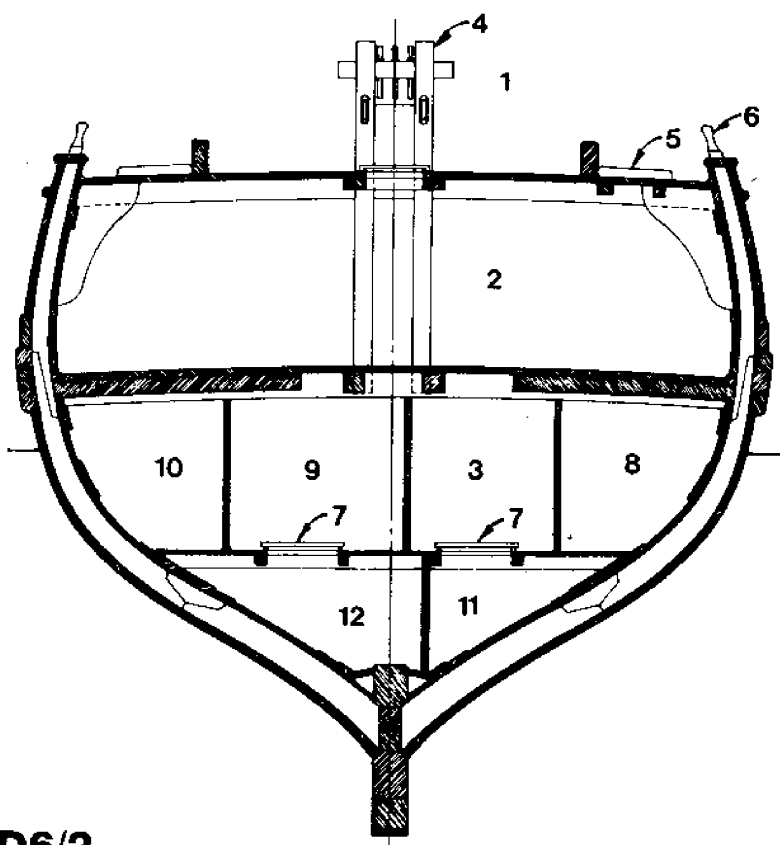
D4/5 Hold (below palleling) (1/96 scale)

1. Cutwater
2. Forward magazine
3. Boatswain's store room
4. Scuttle over
5. Mast step
6. Sail room
7. Hold
8. Fore hatch over
9. Main hatch over
10. Keelson
11. Limber board
12. Shot locker
13. Hold well
14. Elm tree pumps
15. Foremast
16. Mainmast
17. Spirit room
18. Fish room
19. Pillar
20. Aft magazine
21. Bread room
22. Stern post
23. Rudder
24. Mizzen mast

D Internal hull



D6/1



D6/2

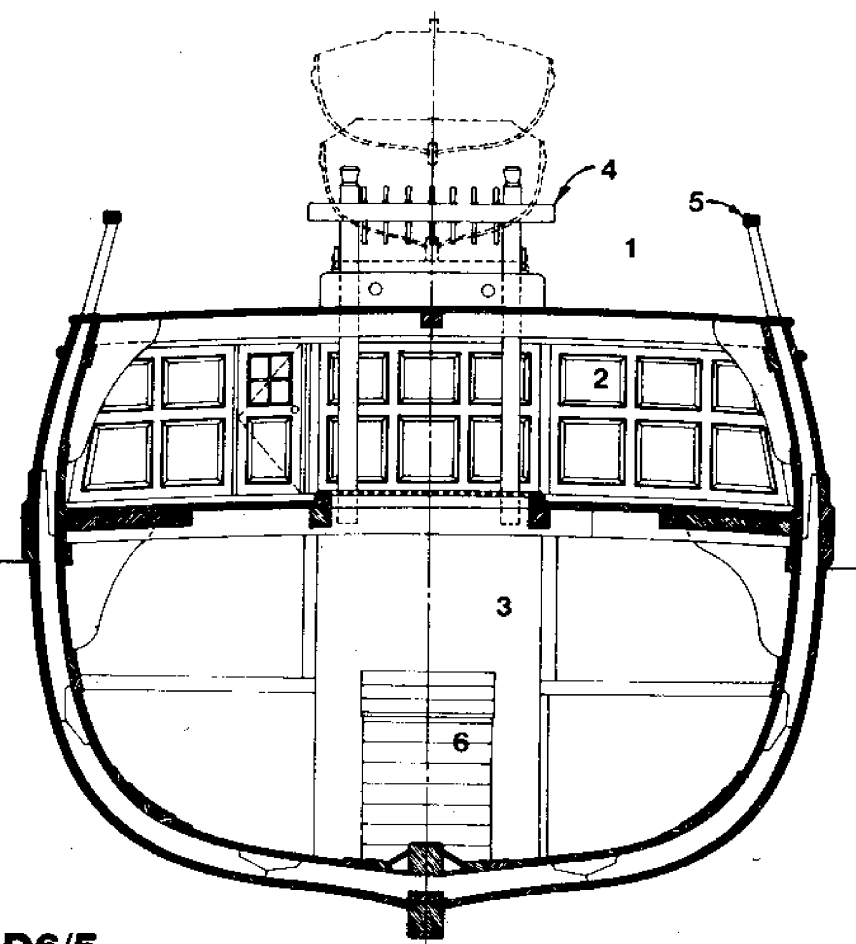
D6 CROSS SECTION

D6/1 Cross section at 'D' looking forward (1/96 scale)

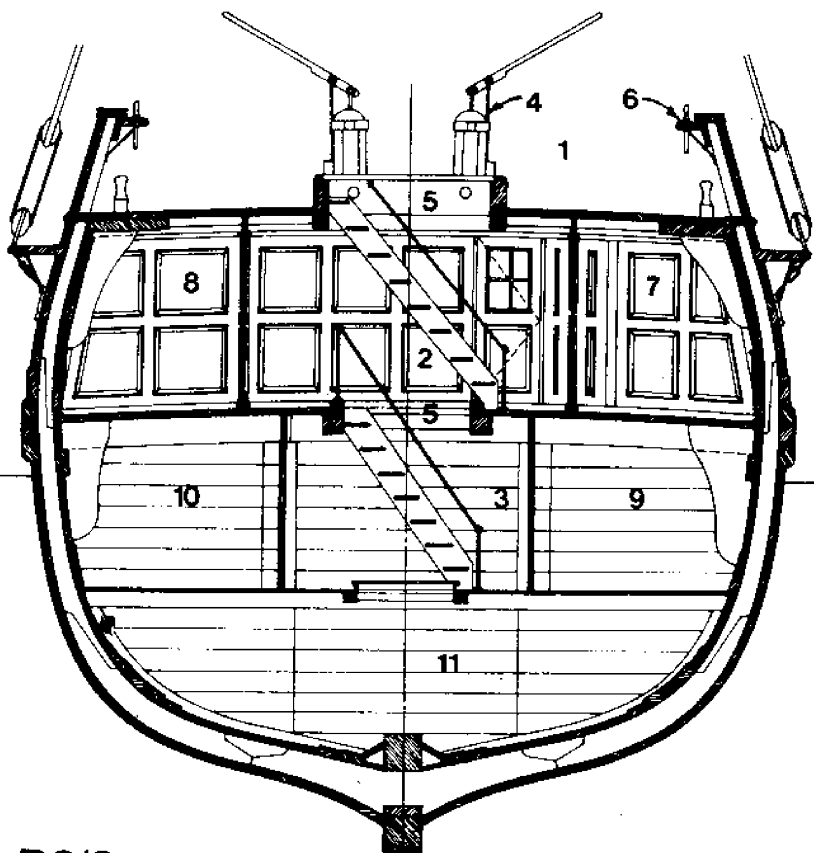
1. Forecastle
2. Lower deck
3. Hold (Gunner's store room)
4. Bowsprit
5. Knighthead
6. Hawse hole
7. Cathead
8. Half-pounder swivel
9. Boatswain's store room

D6/2 Cross section at 'C' looking forward (1/96 scale)

1. Forecastle
2. Lower deck
3. Hold (Gunner's store room)
4. Fore topsail sheet bitts
5. Scuttle
6. Timberhead
7. Scuttle
8. Carpenter's store room
9. Boatswain's store room
10. Sail room
11. Magazine
12. Boatswain's store room



D6/5



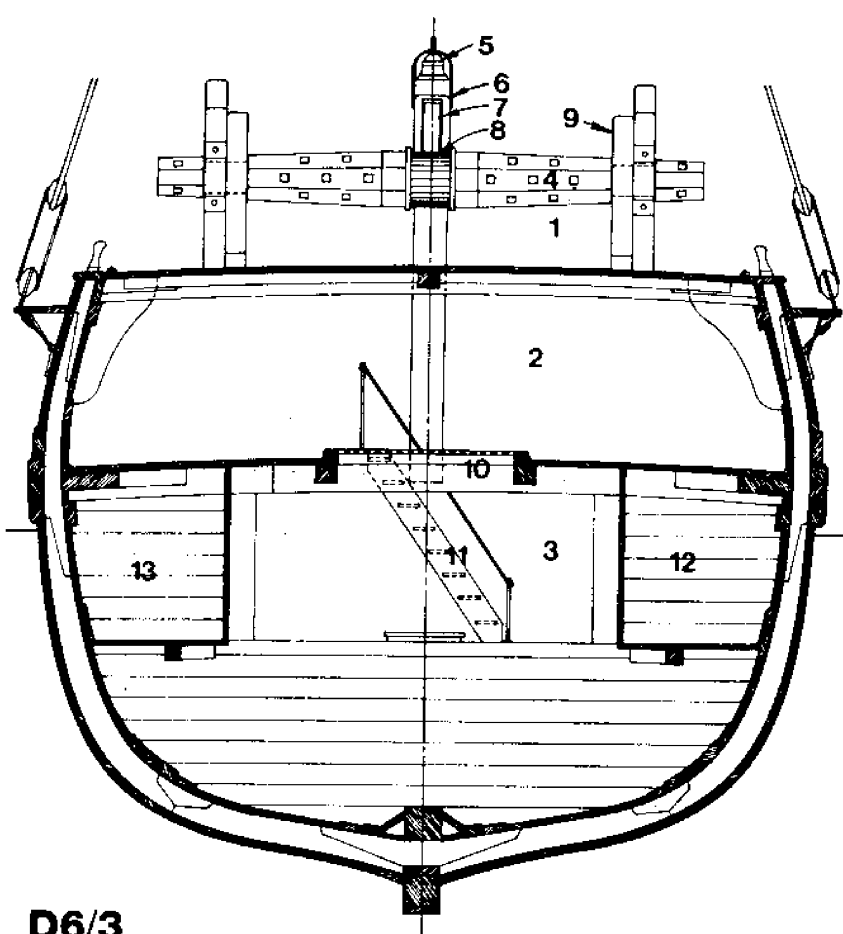
D6/6

D6/5 Cross section at 10 looking aft (1/96 scale)

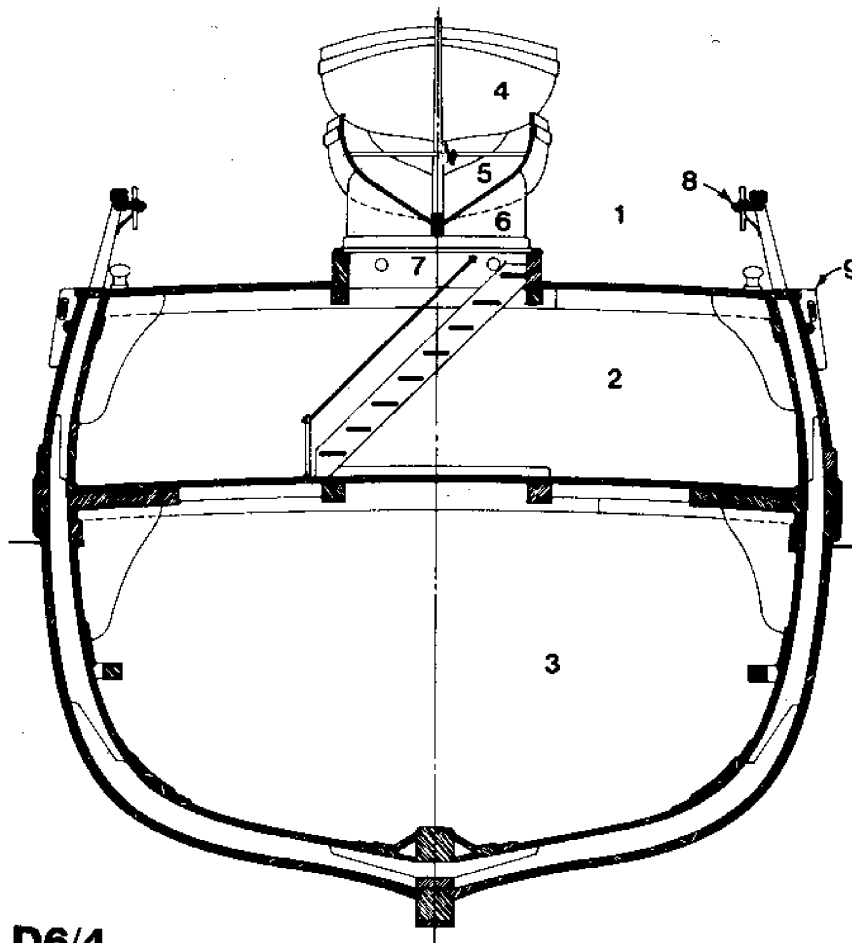
1. Upper deck
2. Lower deck
3. Hold
4. Fore brace bitts
5. Rail
6. Shot locker

D6/6 Cross section at 10 looking forward (1/96 scale)

1. Upper deck
2. Lower deck (lobby)
3. Hold
4. Elm tree pump
5. Companionway
6. Main pin rail
7. Captain's cabin
8. Master's cabin
9. Slop room
10. Botanist's cabin
11. Spirit room



D6/3



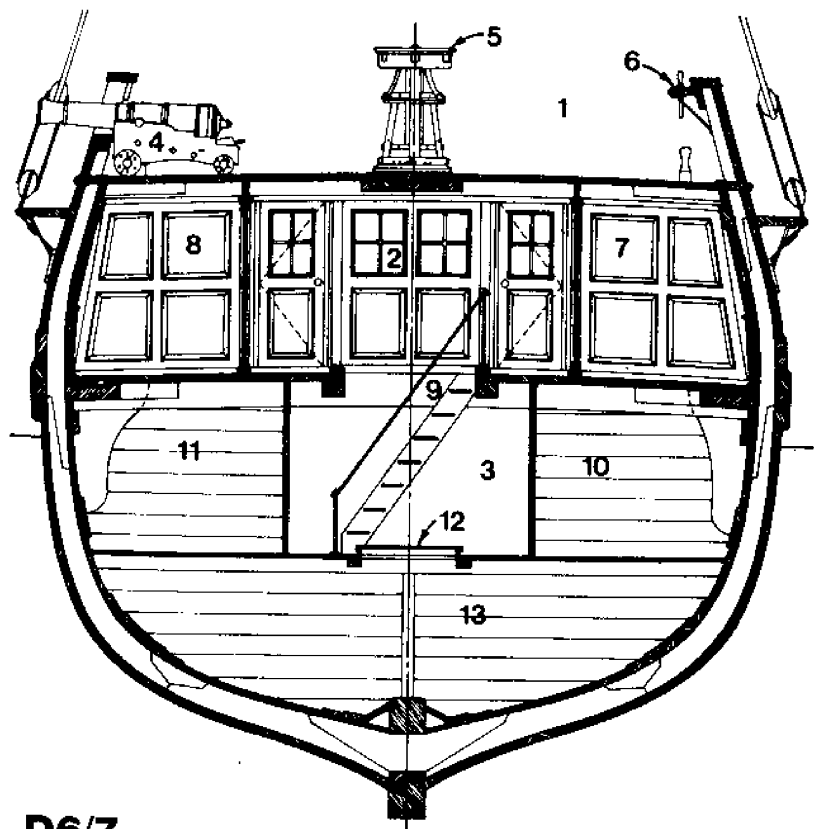
D6/4

D6/3 Cross section at 'A' looking forward (1/96 scale)

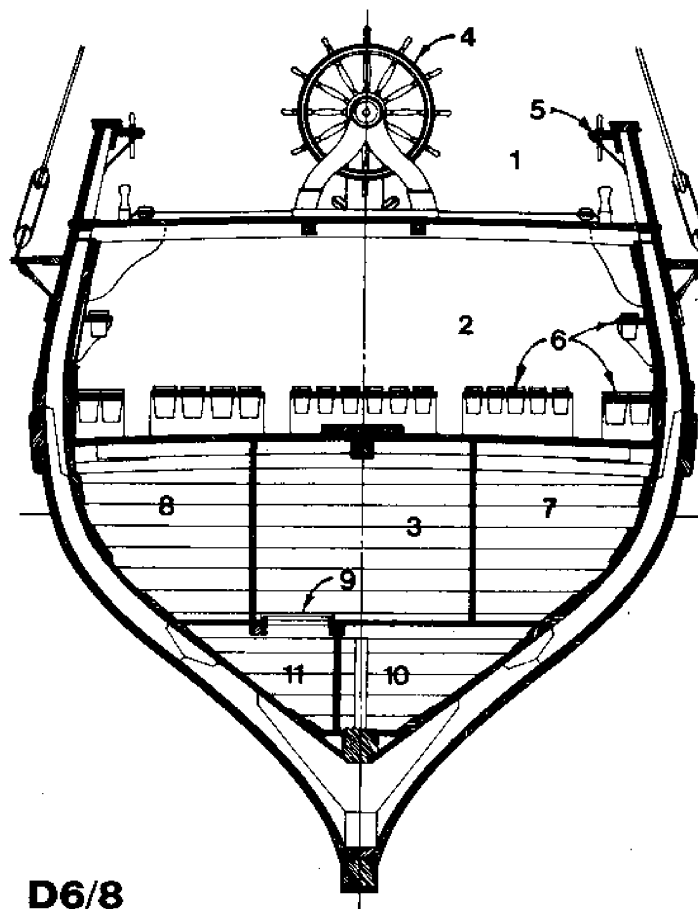
1. Forecastle
2. Lower deck
3. Hold
4. Windlass
5. Bell
6. Pawl bitt post
7. Pawls
8. Pawl rim
9. Carrick bitt
10. Fore hatch
11. Companion
12. Pitch room
13. Block room

D6/4 Cross section at 'B' looking aft (1/96 scale)

1. Upper deck
2. Lower deck
3. Hold
4. Cutter
5. Launch
6. Boat chock
7. Companionway
8. Fore pin rail
9. Chesstree



D6/7



D6/8

D6/7 Cross section at '2' looking aft (1/96 scale)

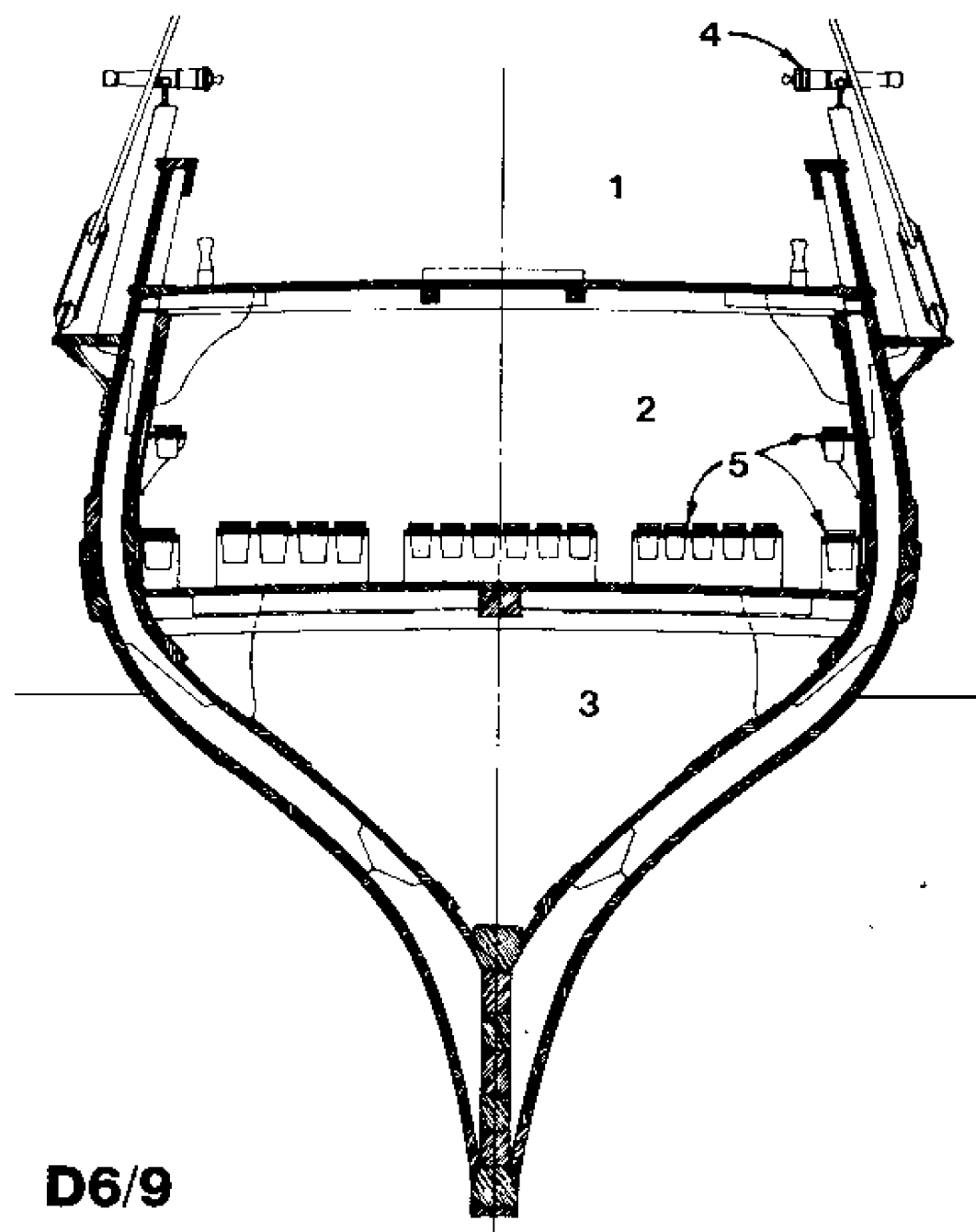
1. Upper deck
2. Lower deck (lobby)
3. Hold (aft platform)
4. 4-pounder gun (short)
5. Capstan
6. Main pin rail
7. Master's cabin
8. Captain's cabin
9. Companionway
10. Captain's clerk's cabin
11. Slop room
12. Scuttle
13. Spirit room

D6/8 Cross section at '4' looking aft (1/96 scale)

1. Quarterdeck
2. Lower deck (garden)
3. Hold (aft platform)
4. Steering wheel
5. Poop pin rail
6. Pot racks
7. Steward's room
8. Gunner's cabin
9. Scuttle
10. Bread room
11. After magazine

**D6/9 Cross section at '5' looking aft
(1/96 scale)**

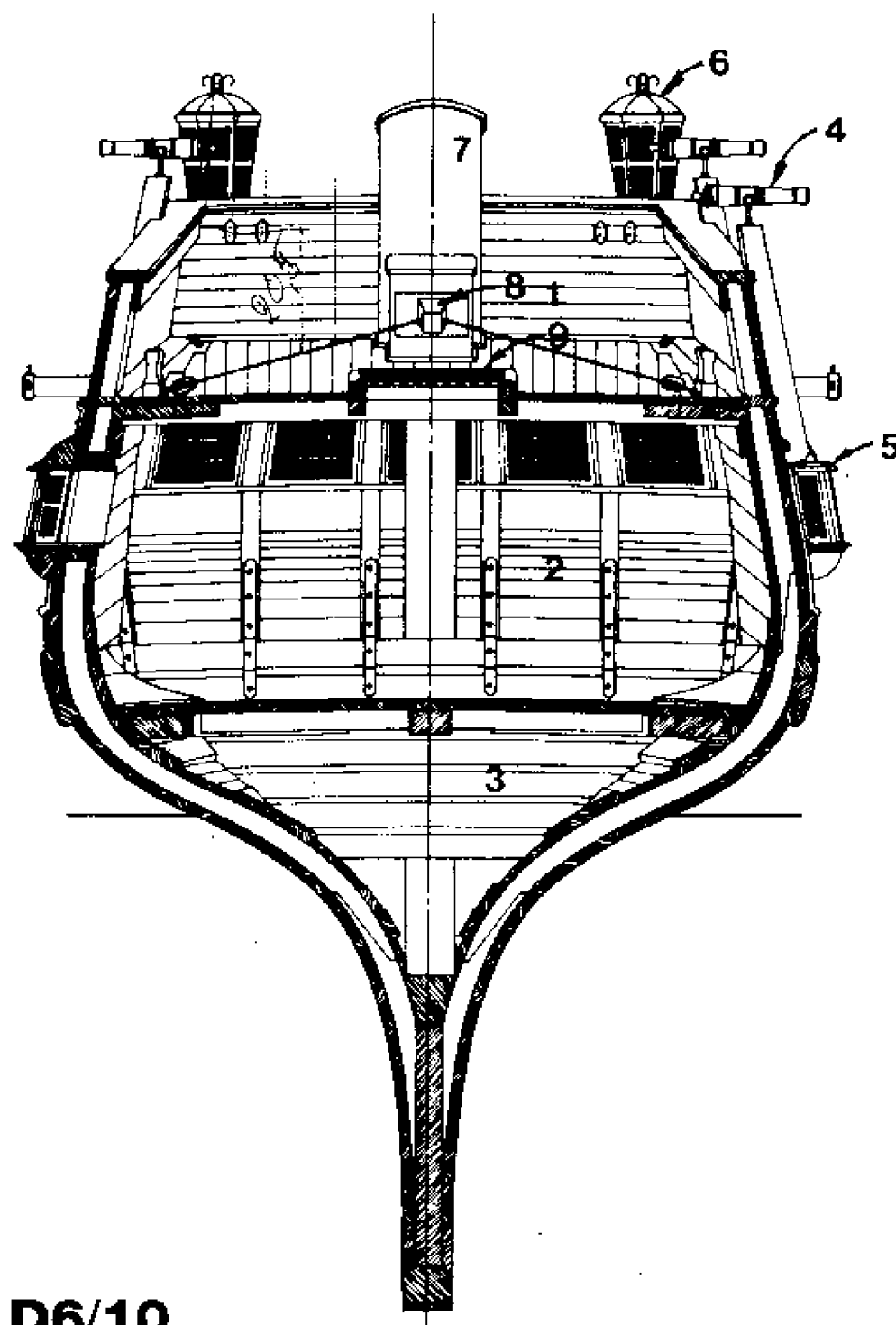
1. Quarterdeck
2. Lower deck (garden)
3. Hold (bread room)
4. Half-pounder swivel
5. Pot racks



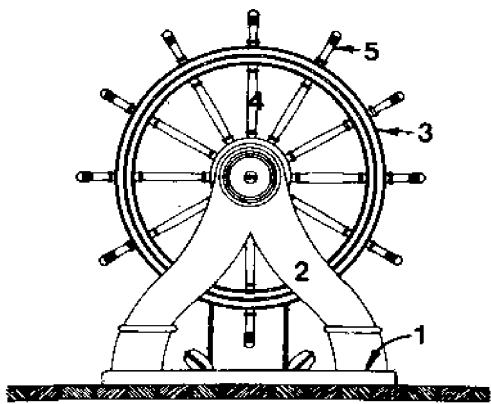
D6/9

**D6/10 Cross section at '6' looking aft
(1/96 scale)**

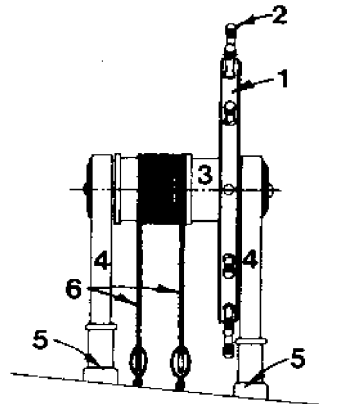
1. Quarterdeck
2. Lower deck (garden)
3. Hold (bread room)
4. Half-pounder swivel
5. Quarter gallery
6. Stern lantern
7. Flag locker
8. Tiller
9. Grating



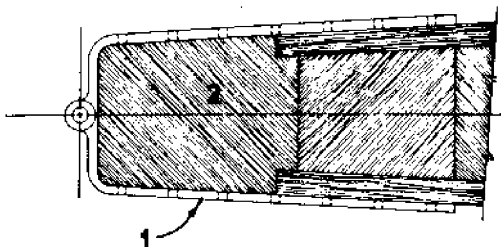
D6/10



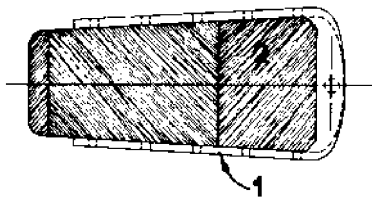
E1/1



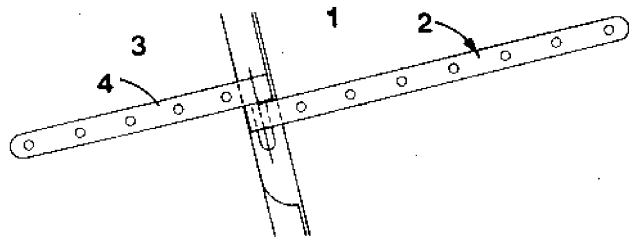
E1/2



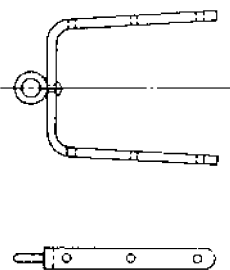
E1/3



E1/4



E1/5



E1/6

E1/7

E1 STEERING GEAR

E1/1 Front elevation (1/48 scale)

1. Platform
2. Pedestal
3. Wheel rim
4. Spoke
5. Handle

E1/2 Side elevation (1/48 scale)

1. Wheel rim
2. Handle
3. Barrel
4. Pedestal
5. Platform
6. Tiller ropes

E1/3 Plan of gudgeon (1/32 scale)

1. Gudgeon
2. Stern post

E1/4 Plan of pintle (1/32 scale)

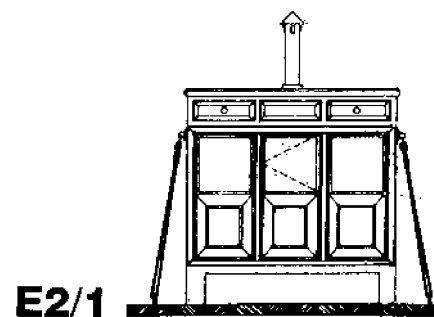
1. Pintle
2. Rudder

E1/5 Elevation of pintle and gudgeon (1/32 scale)

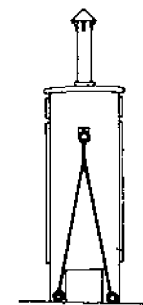
1. Stern post
2. Gudgeon
3. Rudder
4. Pintle

E1/6 Plan of spectacle plate

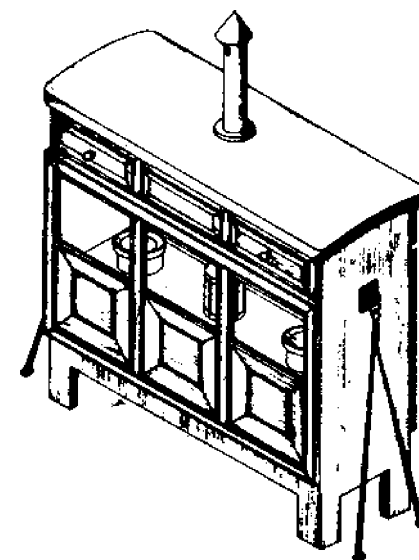
E1/7 Elevation of spectacle plate



E2/1



E2/2



E2/3

E2 BINNACLE

E2/1 Front elevation (1/48 scale)

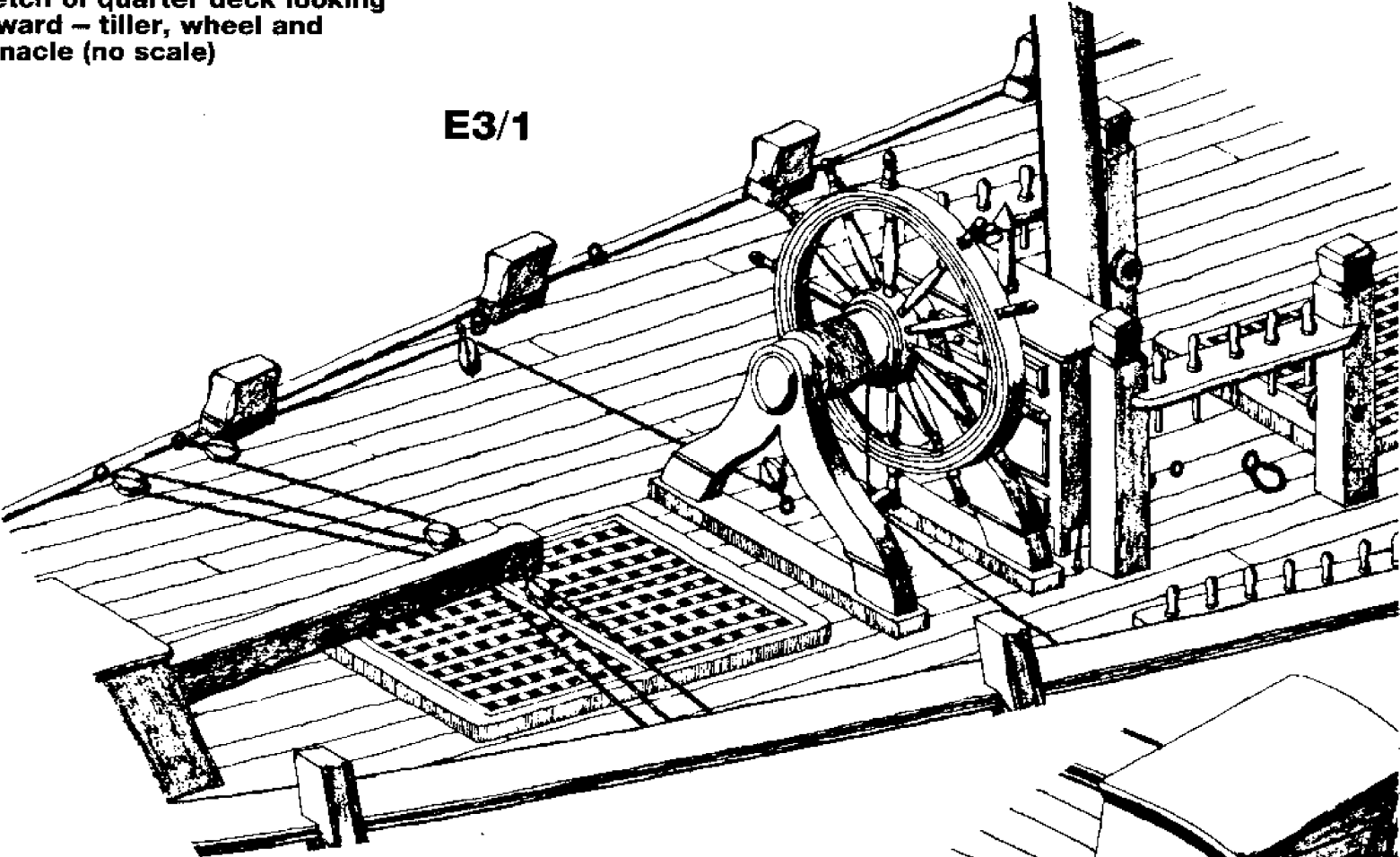
E2/2 Side elevation (1/48 scale)

E2/3 Isometric view (no scale)

E3 QUARTERDECK FITTINGS

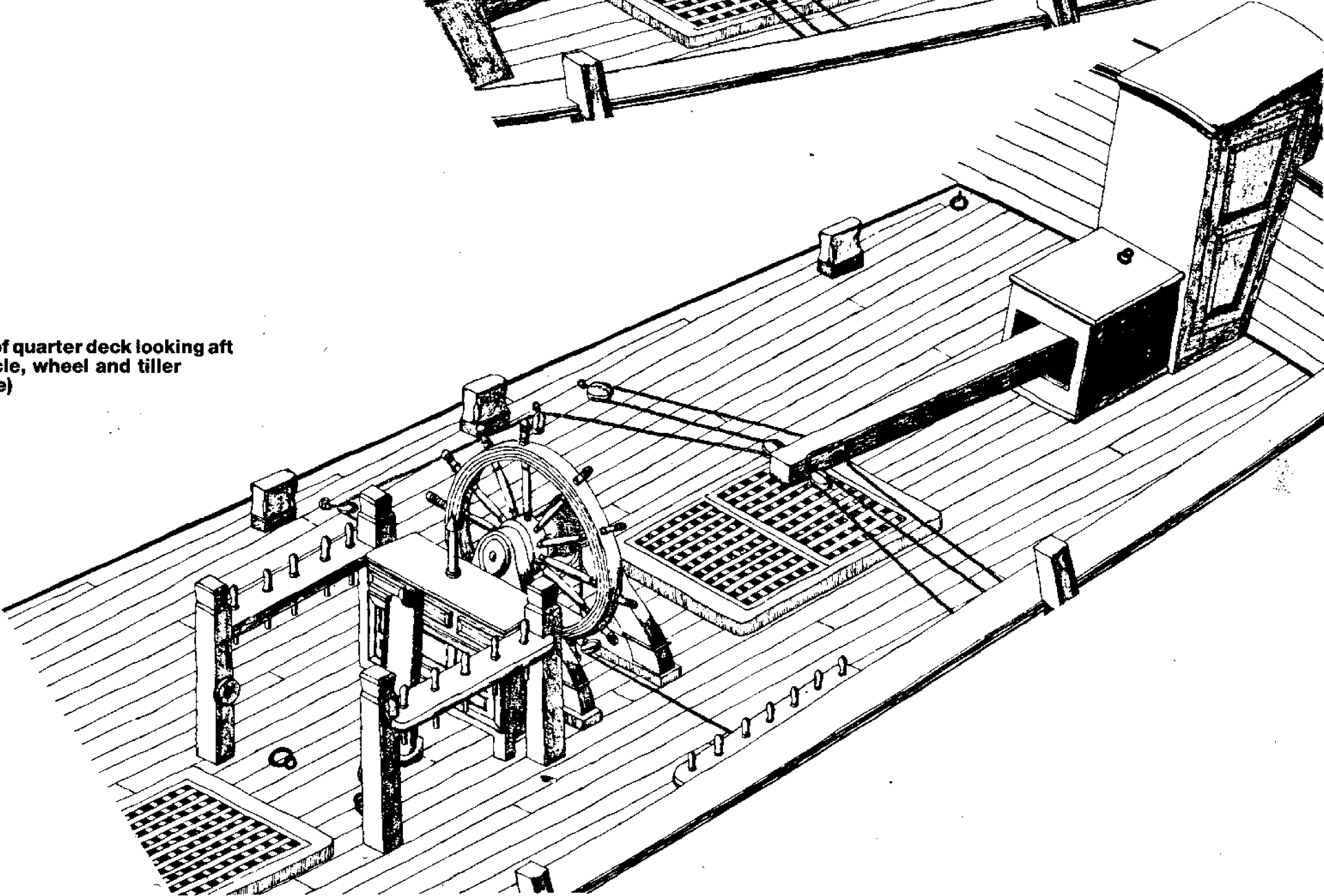
E3/1 Sketch of quarter deck looking forward – tiller, wheel and binnacle (no scale)

E3/1

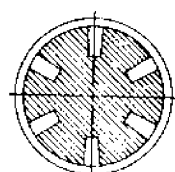
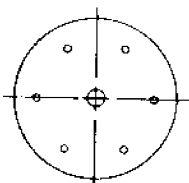


E3/2 Sketch of quarter deck looking aft – binnacle, wheel and tiller (no scale)

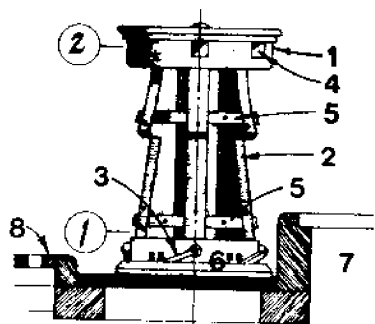
E3/2



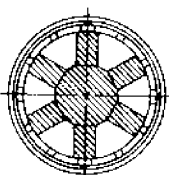
E4/1



Detail 2



E4/2



Detail 1

E4/3

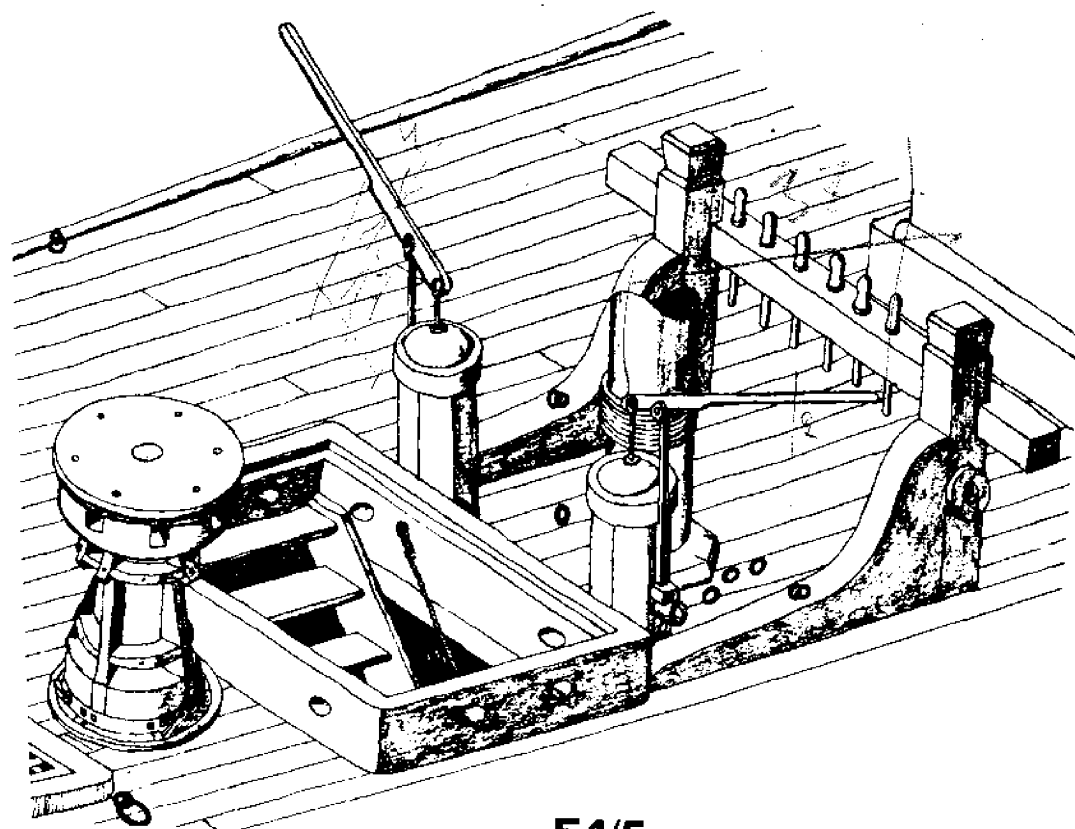
E4 CAPSTAN

E4/1 Plan (1/48 scale)

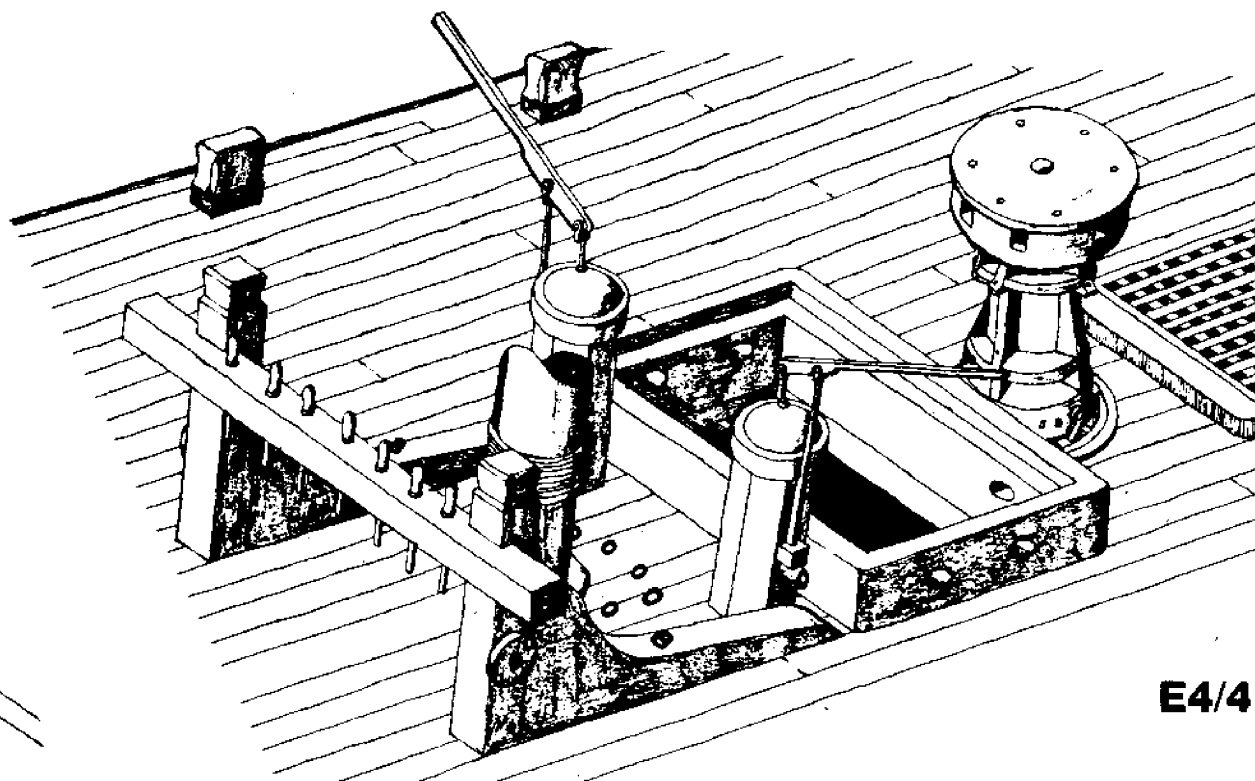
E4/2 Side elevation (1/48 scale)

1. Drumhead
2. Whelp
3. Pawl
4. Holes for bars
5. Chock
6. Plinth
7. Companionway
8. Grating

E4/3 Details (1/48 scale)



E4/5



E4/4

E4/4 Sketch of upper deck – fore brace bitts, pumps and capstan (no scale)

E4/5 Sketch of upper deck looking forward – capstan, pumps and fore brace bitts (no scale)

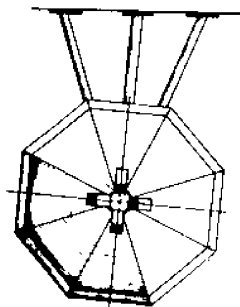
E5 LANTERN

E5/1 Plan (1/32 scale)

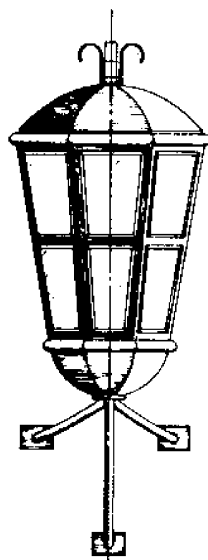
E5/2 Rear elevation (1/32 scale)

E5/3 Side elevation (1/32 scale)

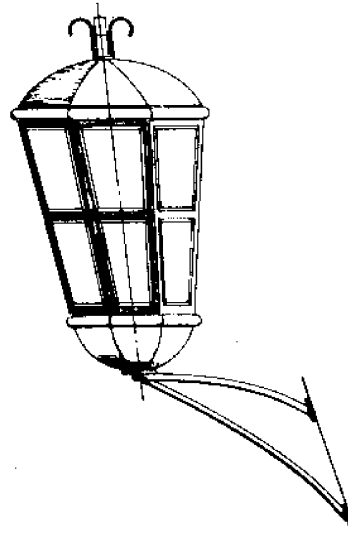
E5/4 Isometric view (no scale)



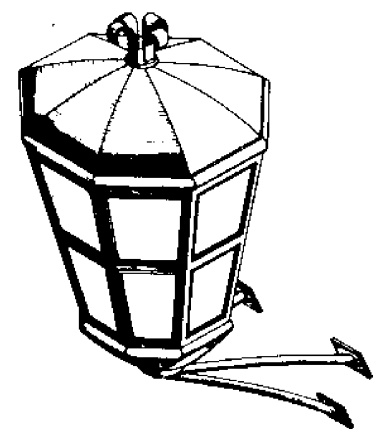
E5/1



E5/2



E5/3

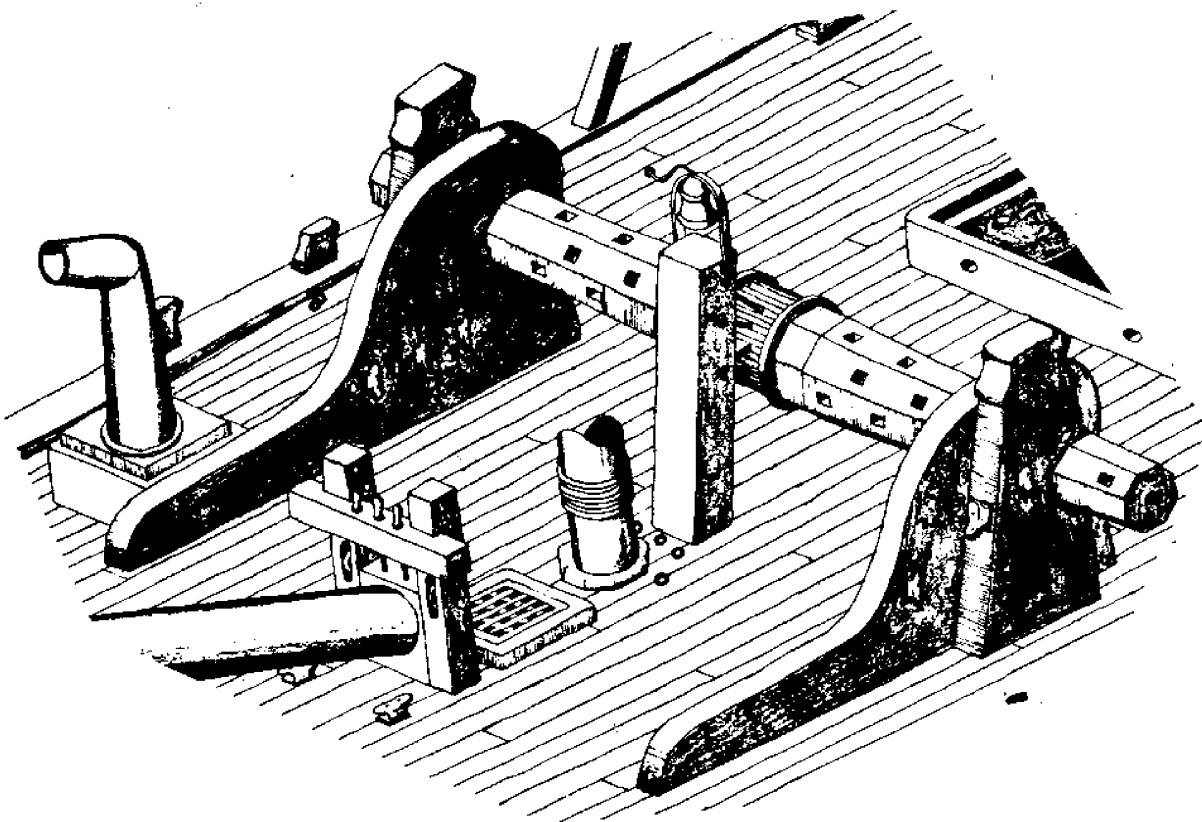


E5/4

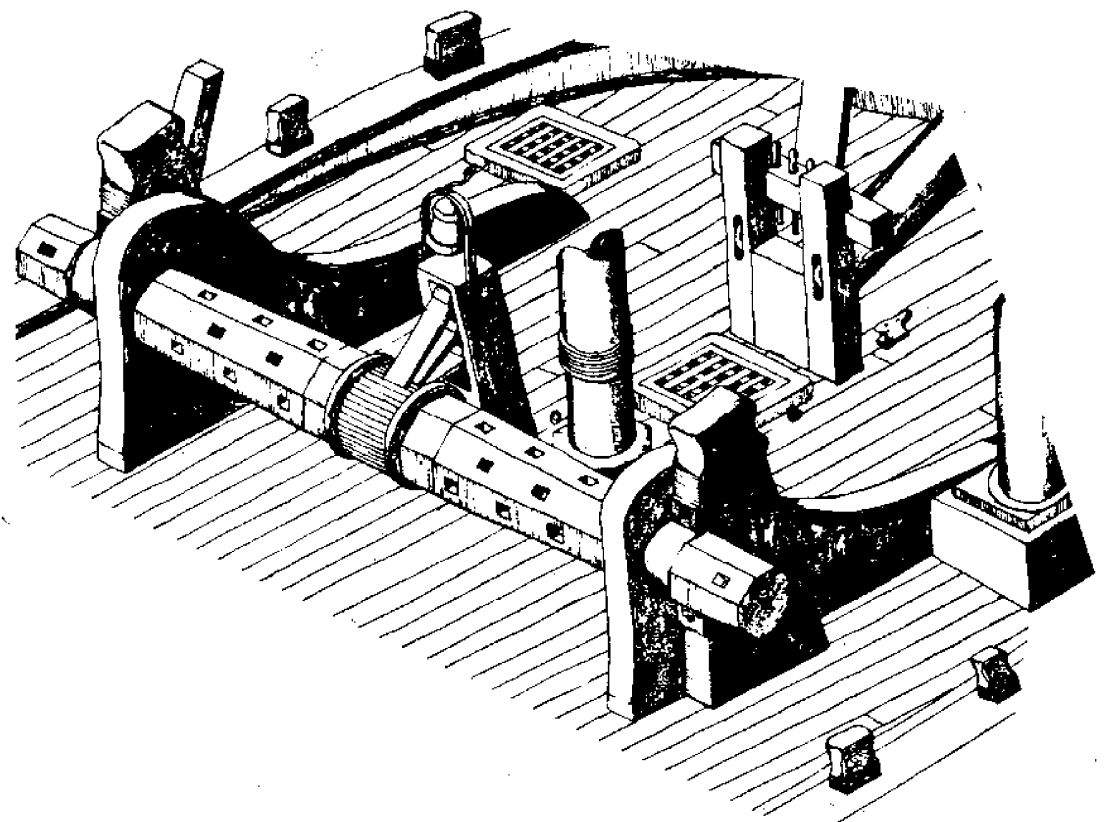
E6 WINDLASS

E6/1 Sketch of forecastle looking aft – windlass (no scale)

E6/2 Sketch of forecastle looking forward – windlass (no scale)



E6/1



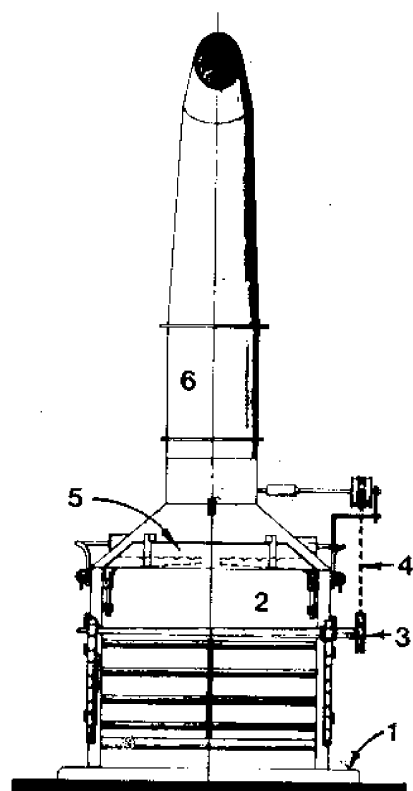
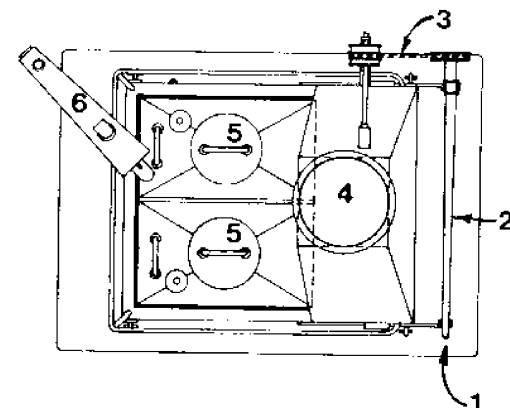
E6/2

E7 GALLEY STOVE

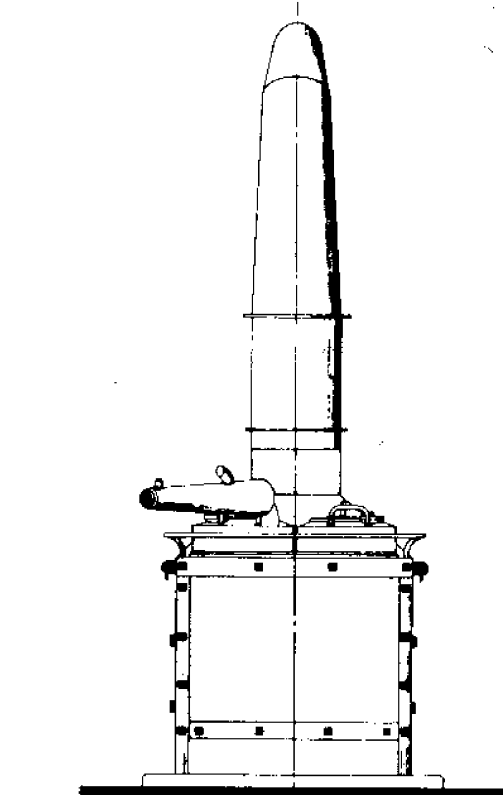
E7/1 Plan (1/48 scale)

1. Bottom flat
2. Spit
3. Drive chain
4. Chimney
5. Boiler
6. Condenser

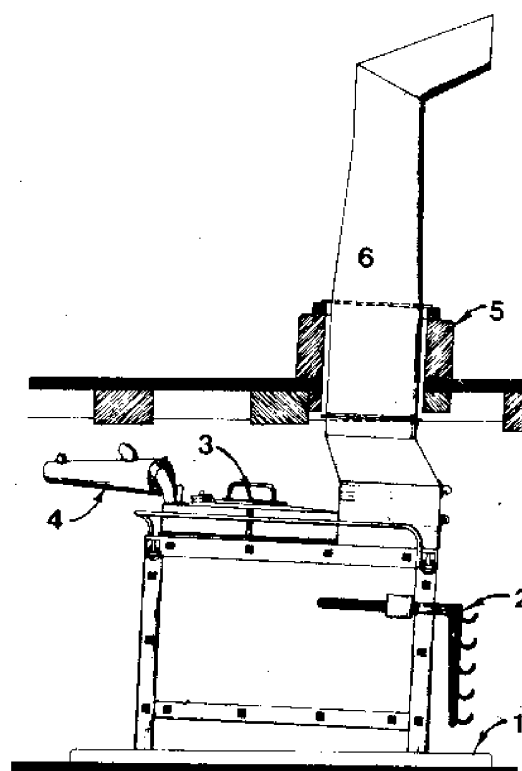
E7/1



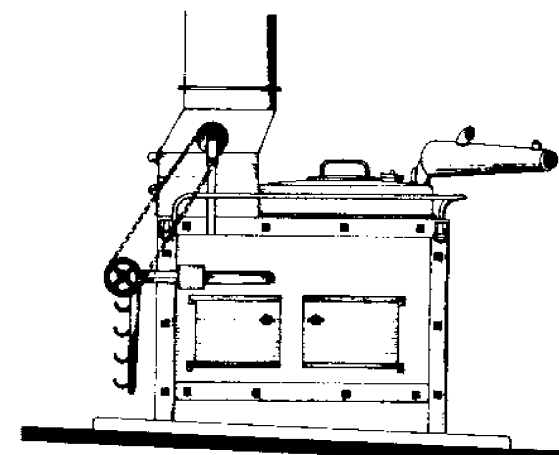
E7/2



E7/3



E7/4



E7/5

E7/2 Fore elevation (1/48 scale)

1. Bottom flat
2. Fireplace
3. Spit
4. Drive chain
5. Hinged flap
6. Chimney

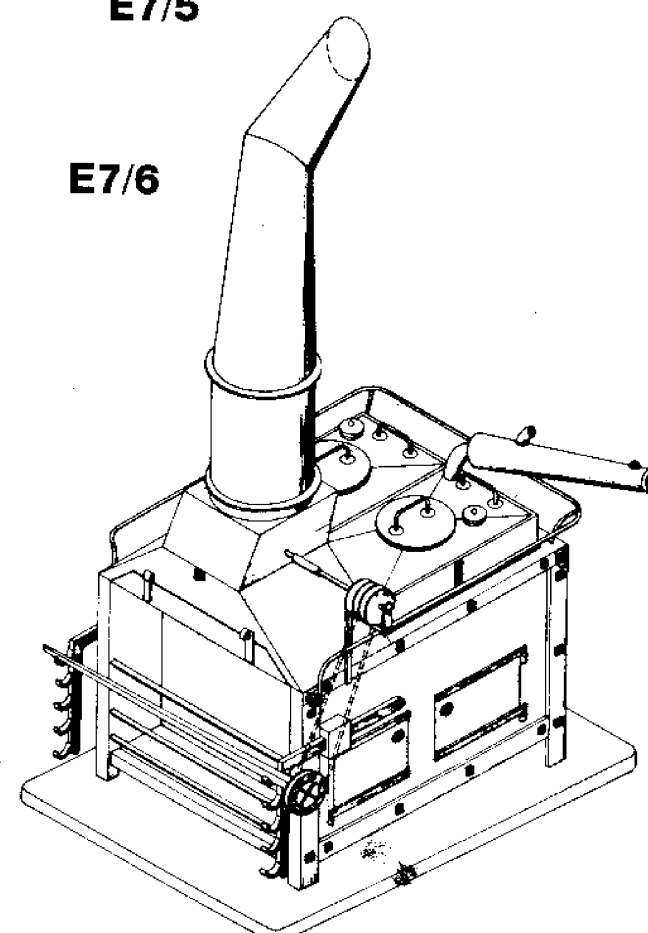
E7/3 Aft elevation (1/48 scale)

E7/4 Starboard elevation (1/48 scale)

1. Bottom flat
2. Rack for spit
3. Boiler
4. Condenser
5. Coaming
6. Chimney

E7/5 Port elevation (1/48 scale)

E7/6 Isometric view (no scale)



E7/6

E8 ANCHORS

E8/1 Bower anchor: plan (1/96 scale)

1. Ring
2. Square
3. Nut (within)
4. Stock
5. Hoop

E8/2 Bower anchor: side elevation (1/96 scale)

1. Ring
2. Square
3. Stock
4. Shank
5. Palm
6. Bill shape
7. Blade
8. Arm
9. Crown
10. Small

E8/3 Bower anchor: front elevation (1/96 scale)

1. Ring
2. Square
3. Stock
4. Shank
5. Palm
6. Arm
7. Nut (within)
8. Hoop
9. Small

E8/4 Stream anchor: side elevation (1/96 scale)

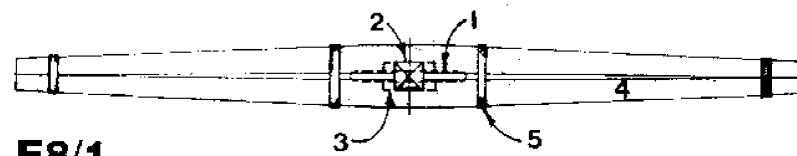
1. Ring
2. Square
3. Eye
4. Small
5. Shank
6. Palm
7. Bill shape
8. Blade
9. Arm
10. Crown

E8/5 Stream anchor: front elevation (1/96 scale)

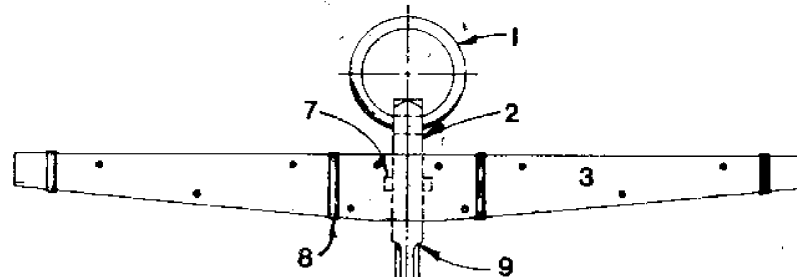
1. Ring
2. Square
3. Ironstock
4. Ring forelock
5. Small
6. Shank
7. Palm
8. Arm

E8/6 Kedge anchor: side elevation (1/96 scale)

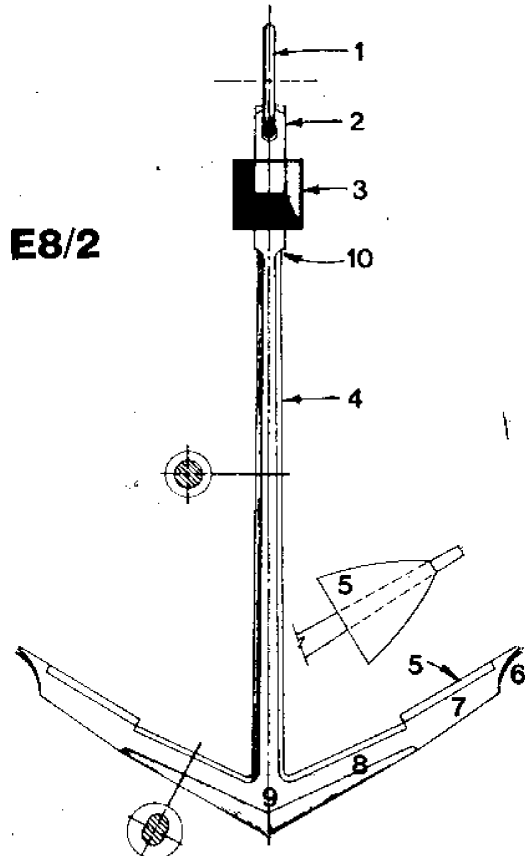
E8/7 Kedge anchor: front elevation (1/96 scale)



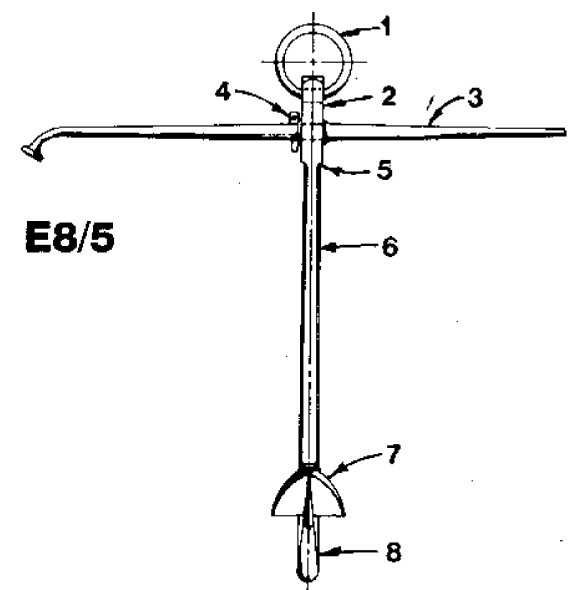
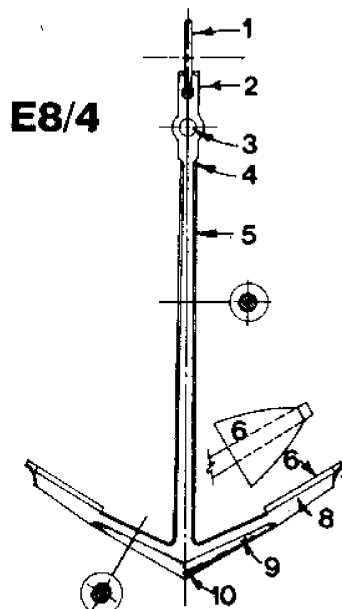
E8/1



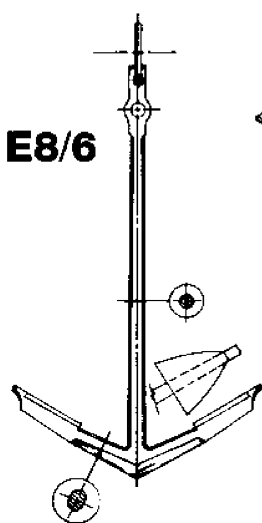
E8/3



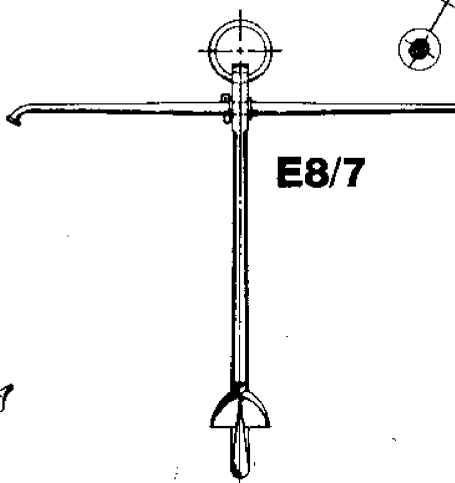
E8/4



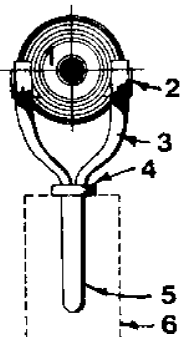
E8/5



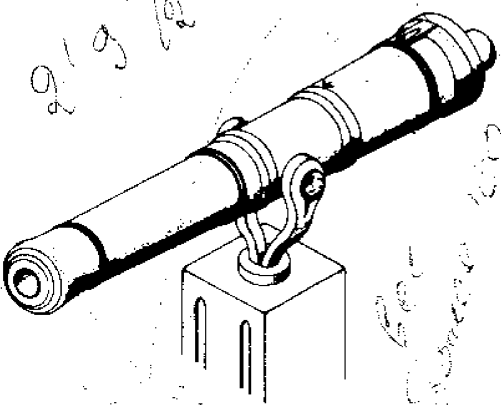
E8/6



E8/7

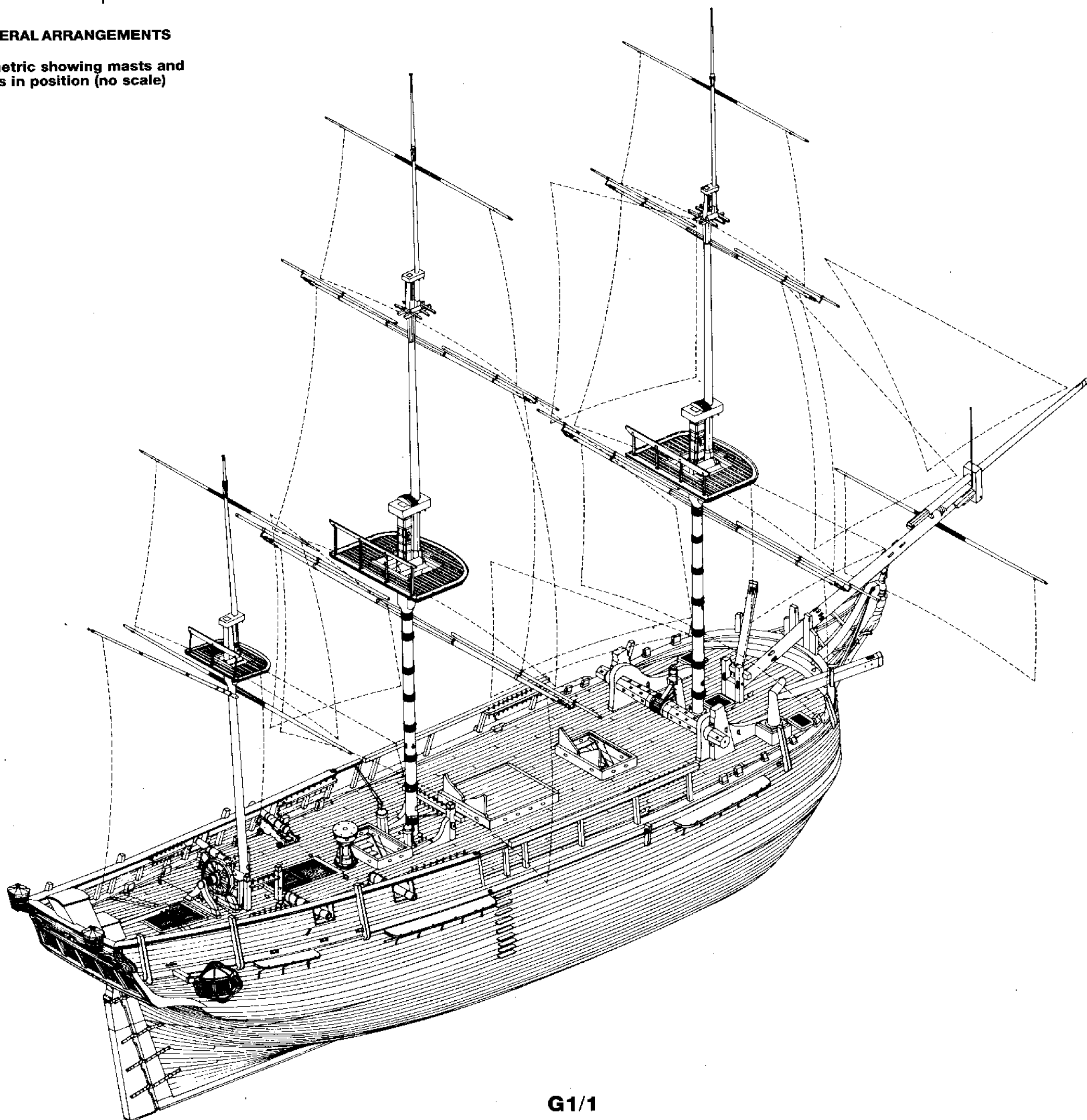
F2/1

F2/4 Isometric of half-pounder swivel (no scale)



G1 GENERAL ARRANGEMENTS

G1/1 Isometric showing masts and yards in position (no scale)



G1/1

G2 BOWSPRIT.

G2/1 Plan (1/96 scale)

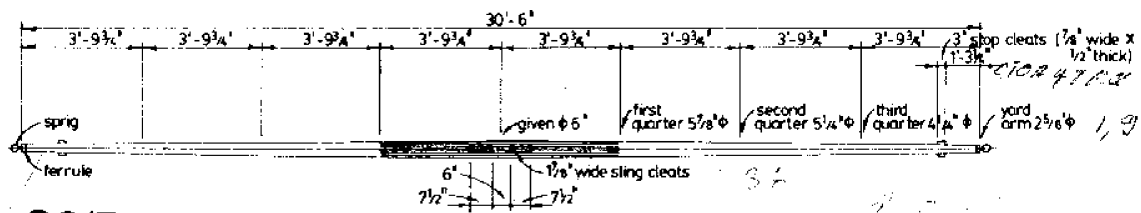
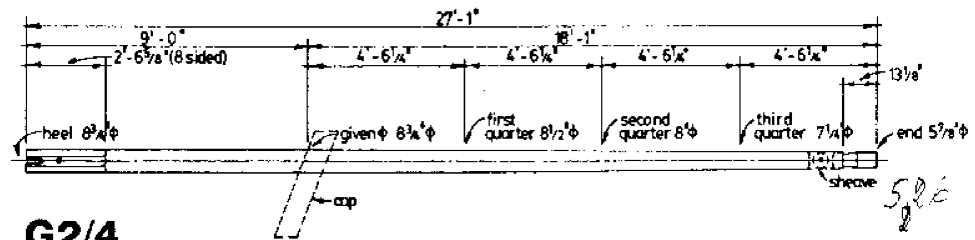
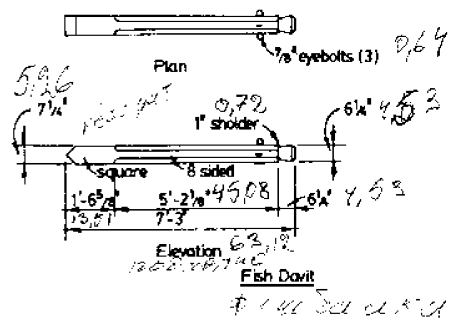
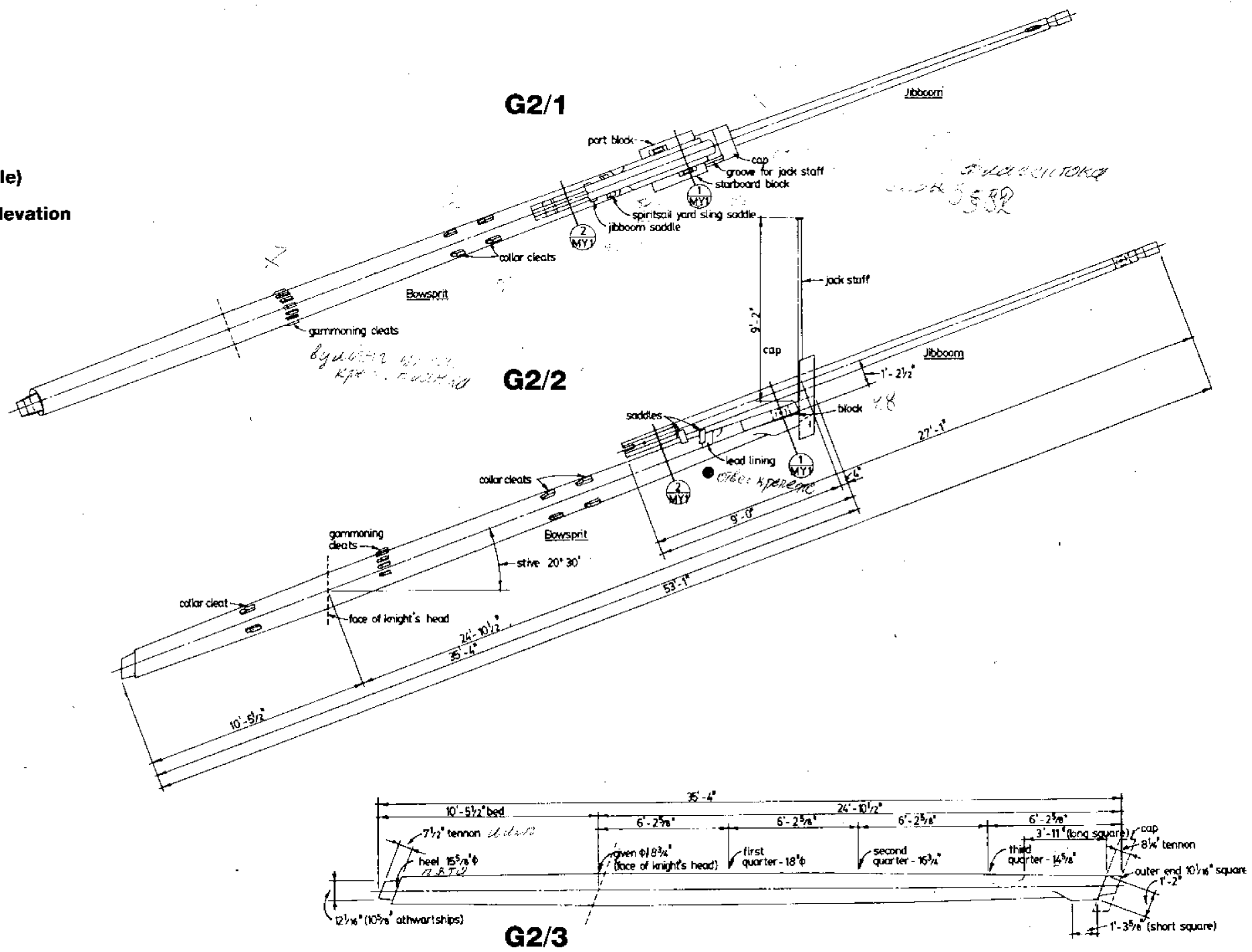
G2/2 Elevation (1/96 scale)

G2/3 Bowsprit (1/96 scale)

G2/4 Jibboom (1/96 scale)

G2/5 Spritsail yard (1/96 scale)

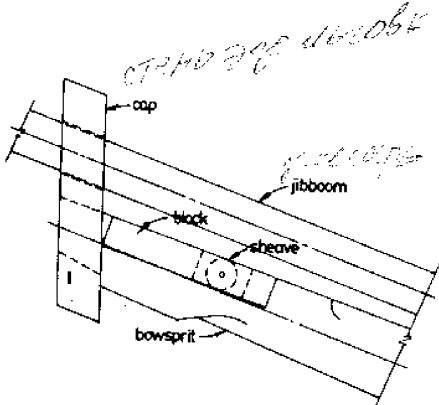
**G2/6 Fish davit – plan and elevation
(1/96 scale)**



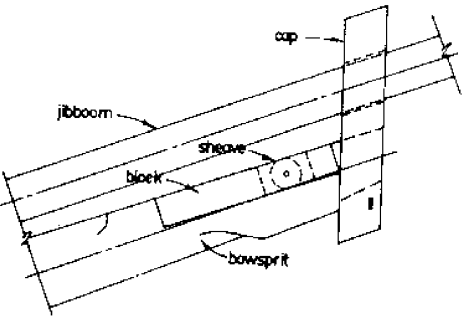
G2/6

G2/5

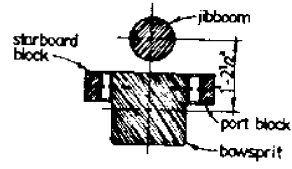
G2/7



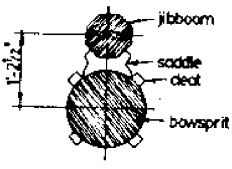
G2/8



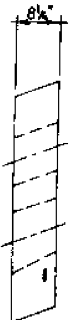
G2/9



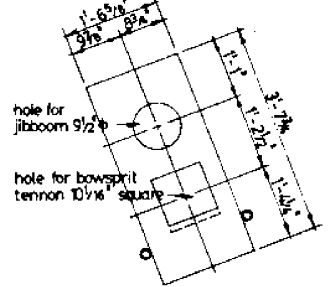
G2/10



G2/11



G2/12



G2/7 Port block detail (1/48 scale)

G2/8 Starboard block detail (1/48 scale)

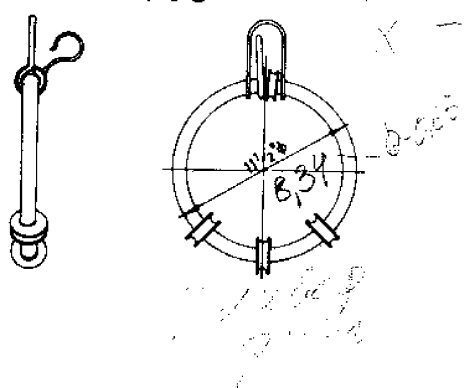
G2/9 Detail of bowsprit blocks (1/48 scale)

G2/10 Bowsprit and jibboom detail (1/48 scale)

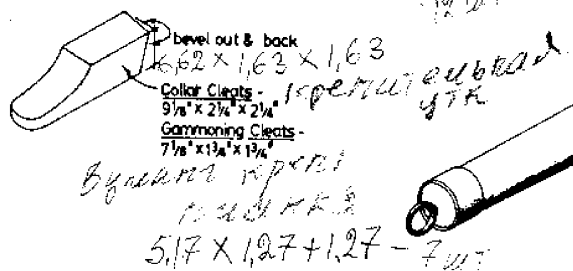
G2/11 Bowsprit cap - side elevation (1/48 scale)

G2/12 Bowsprit cap - front elevation (1/48 scale)

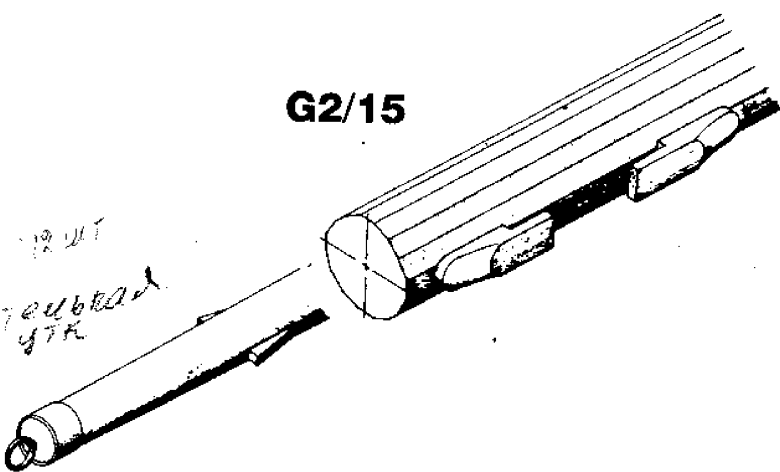
G2/13



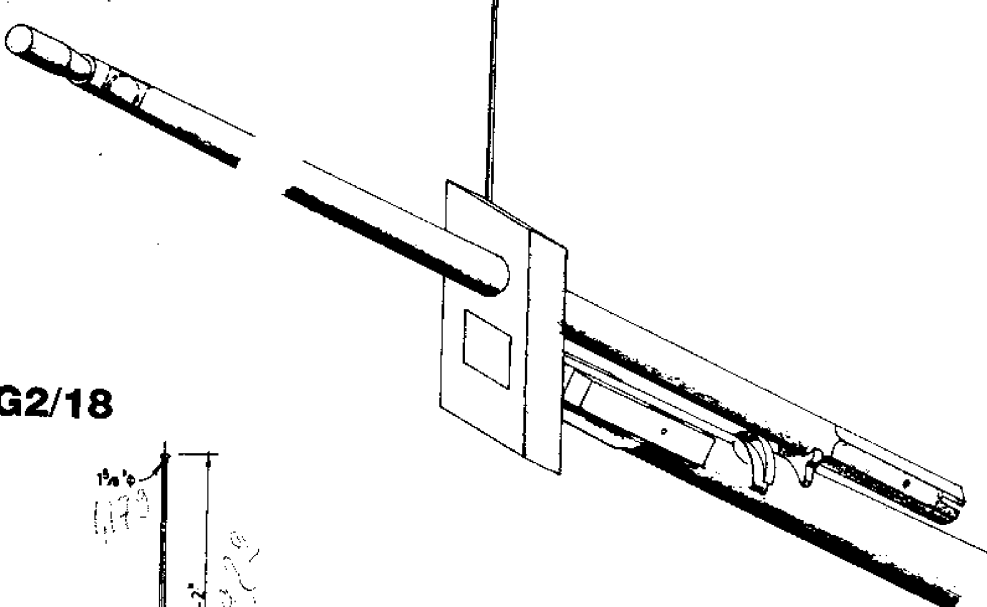
G2/14



G2/15

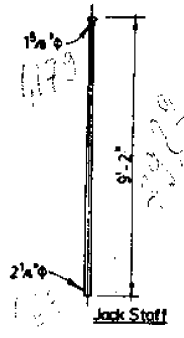


G2/17

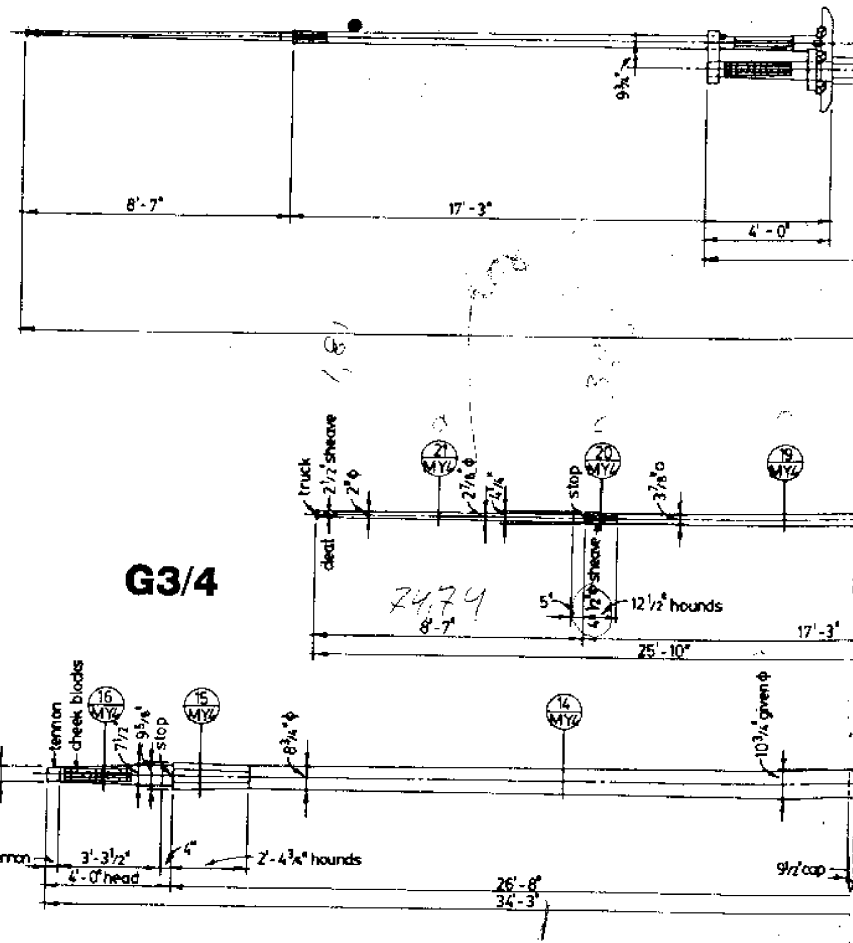


G2/16

G2/18



G3/4



G3/3

G3 FOREMAST

G4 FORE YARDS

G4/2 Fore topmast yard (1/96 scale)

[illegible][illegible]

G3/1

G3/2





G5/2 Plan of fore top (1/96 scale)

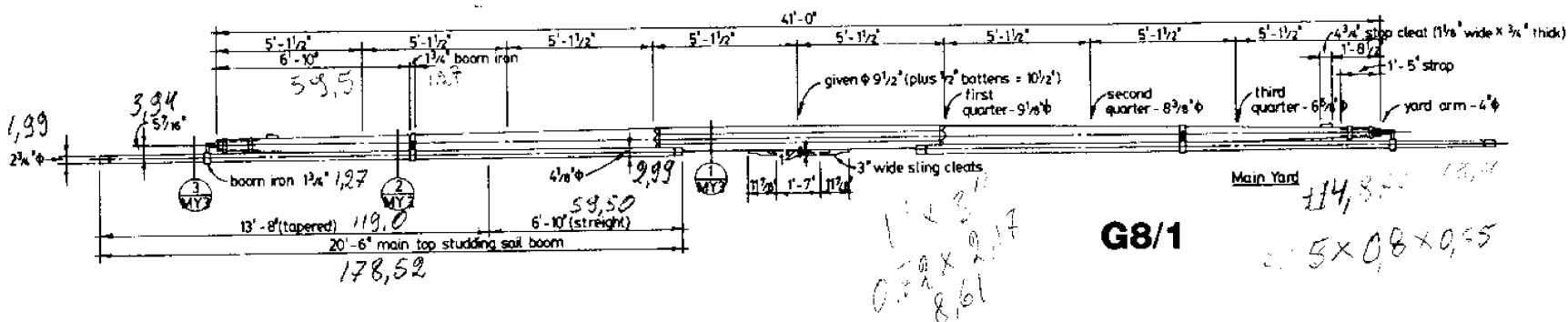


132 x 3 32 x 15

□ 337

98-11
05224.

G Masts and spars



G7/1 Mainmast assembly (1/96 scale)

G7/2 Main lower mast side and front elevation (1/96 scale)

G7/3 Main topmast (1/96 scale)

G7/4 Main topgallant and pole mast (1/96 scale)

G8 MAIN YARDS

G8/1 Main yard (1/96 scale)

G8/2 Main topyard (1/96 scale)

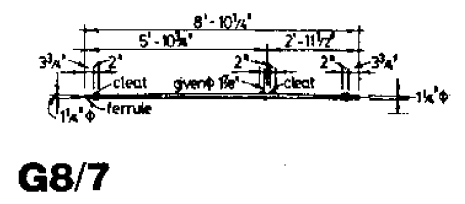
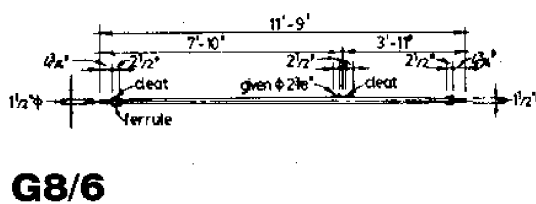
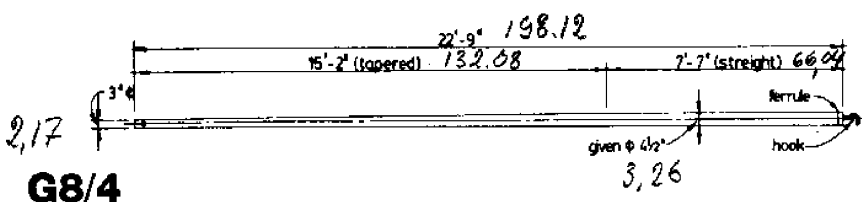
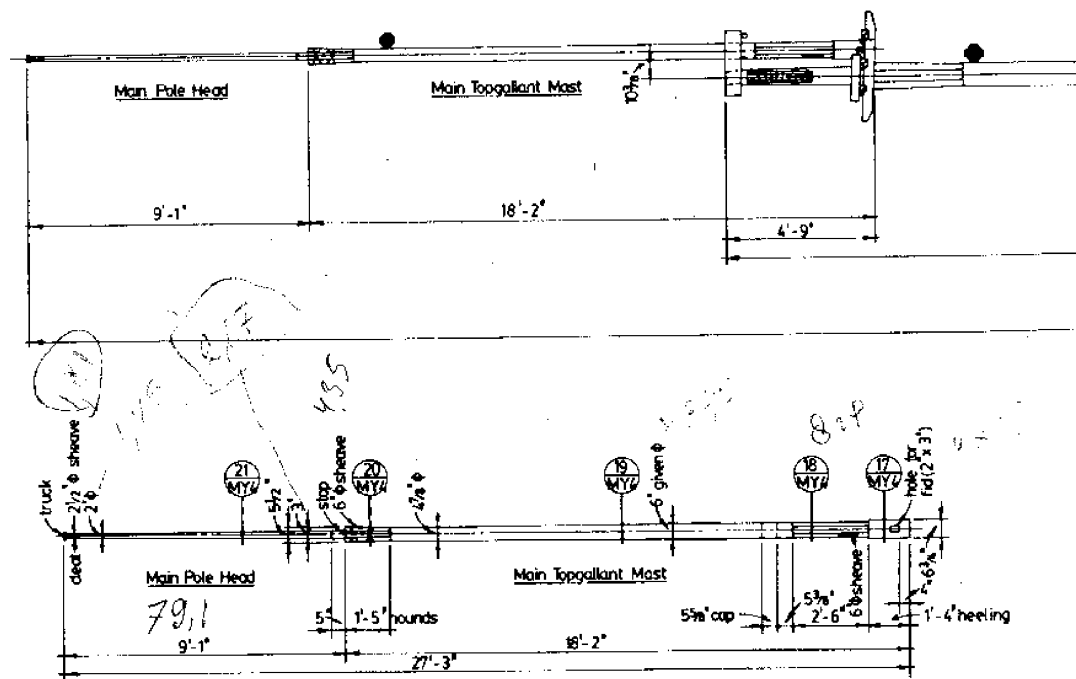
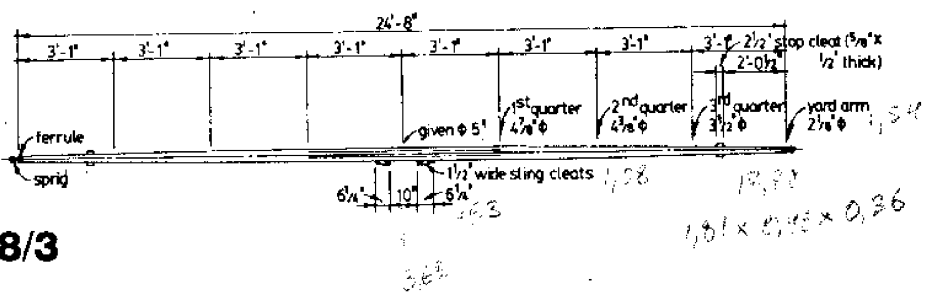
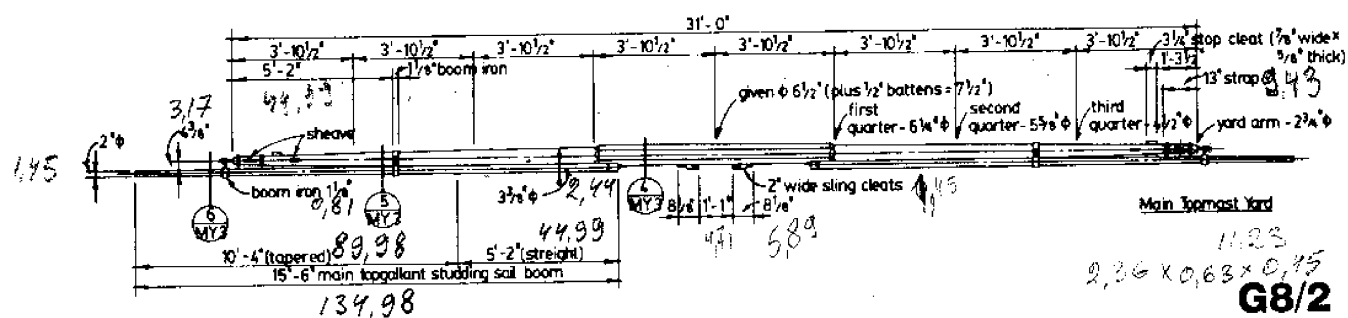
G8/3 Main topgallant yard (1/96 scale)

G8/4 Main lower studding sail boom (1/96 scale)

G8/5 Main studding sail yard (1/96 scale)

G8/6 Main top studding sail yard (1/96 scale)

G8/7 Main topgallant studding sail yard (1/96 scale)

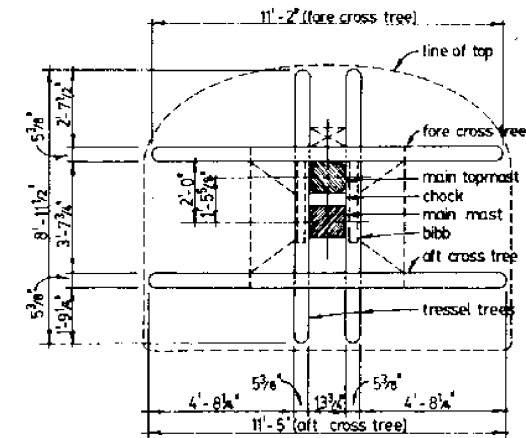


1. Main yard
2. Main yard quarter iron
3. Main yard studding sail boom iron

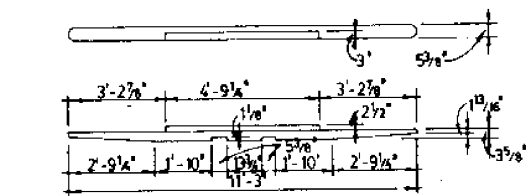
4. Main topyard
5. Main topyard quarter iron
6. Main topyard studding sail boom iron



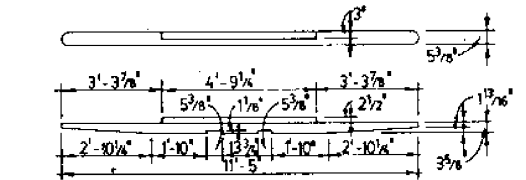
MASTS AND SPARS



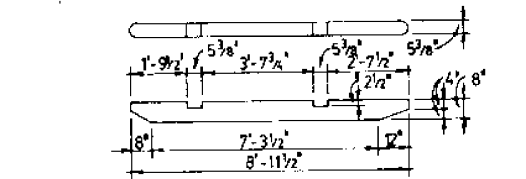
G9/1



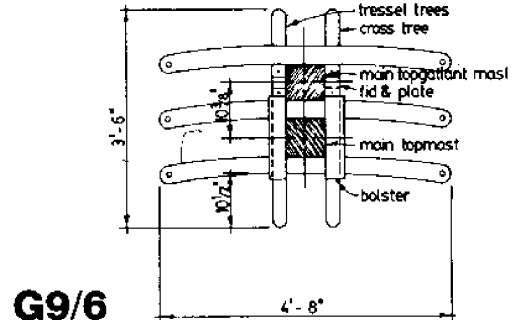
G9/3



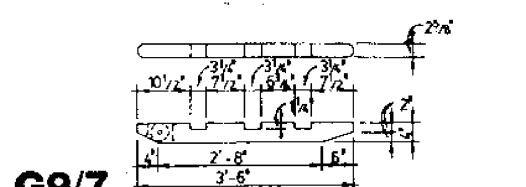
G9/4



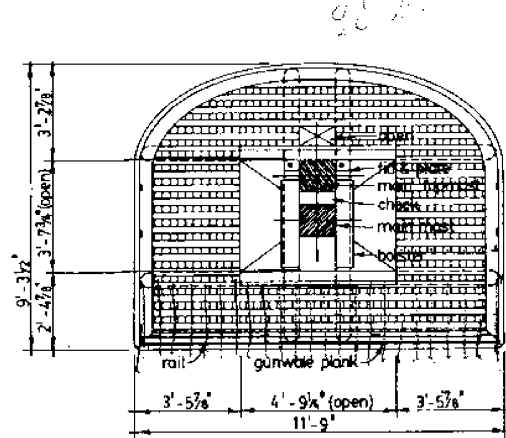
G9/5



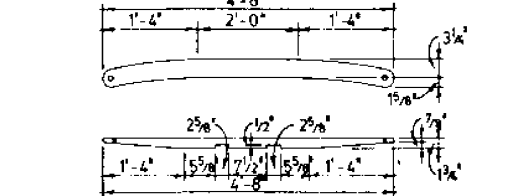
G9/6



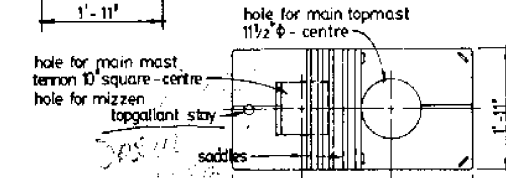
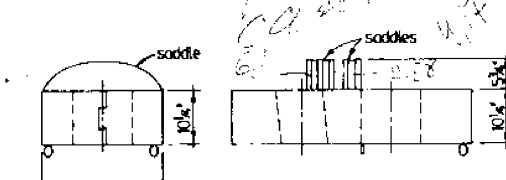
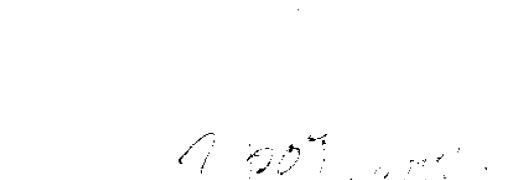
G9/7



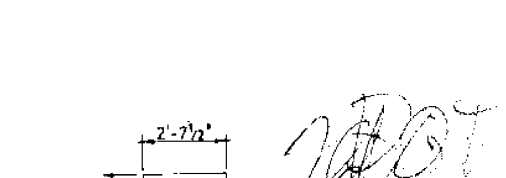
G9/2



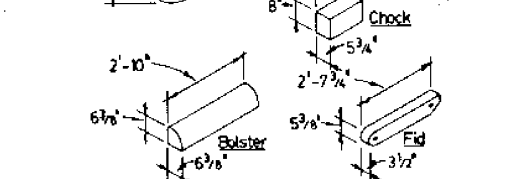
G9/8



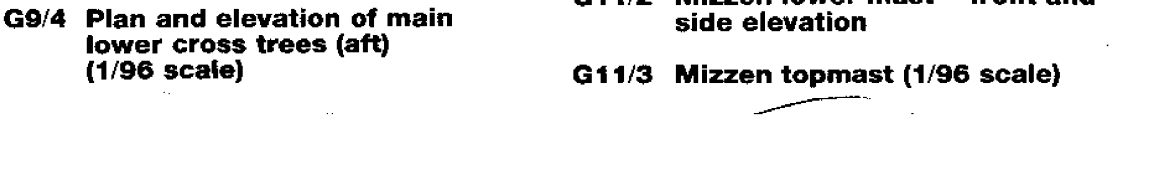
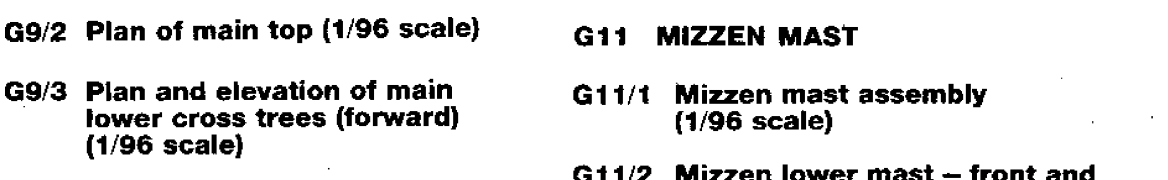
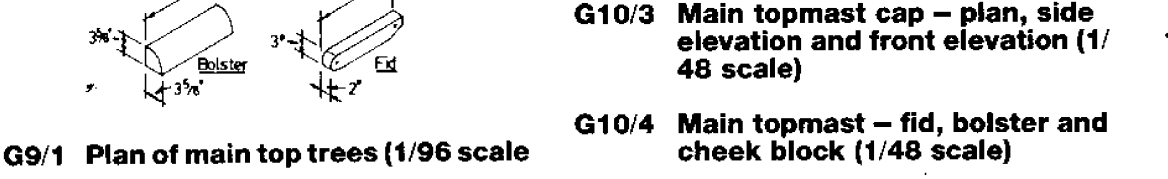
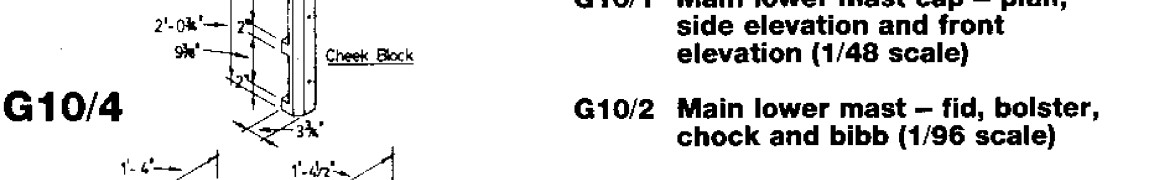
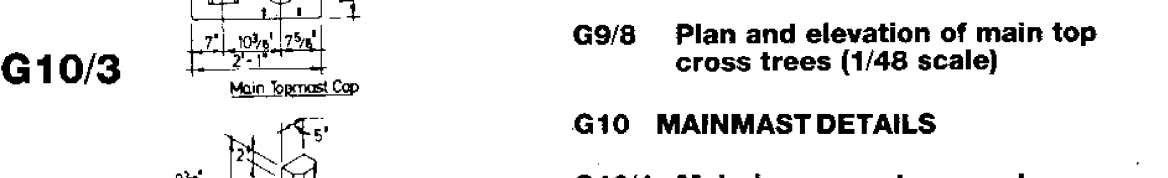
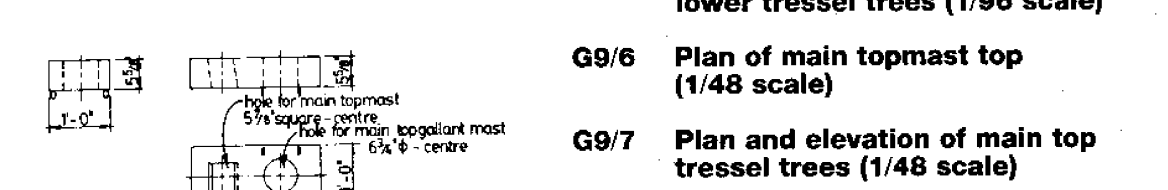
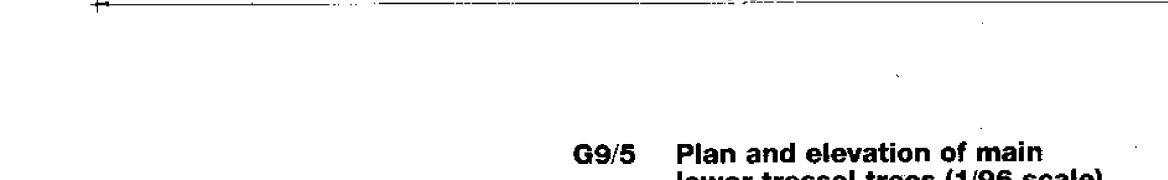
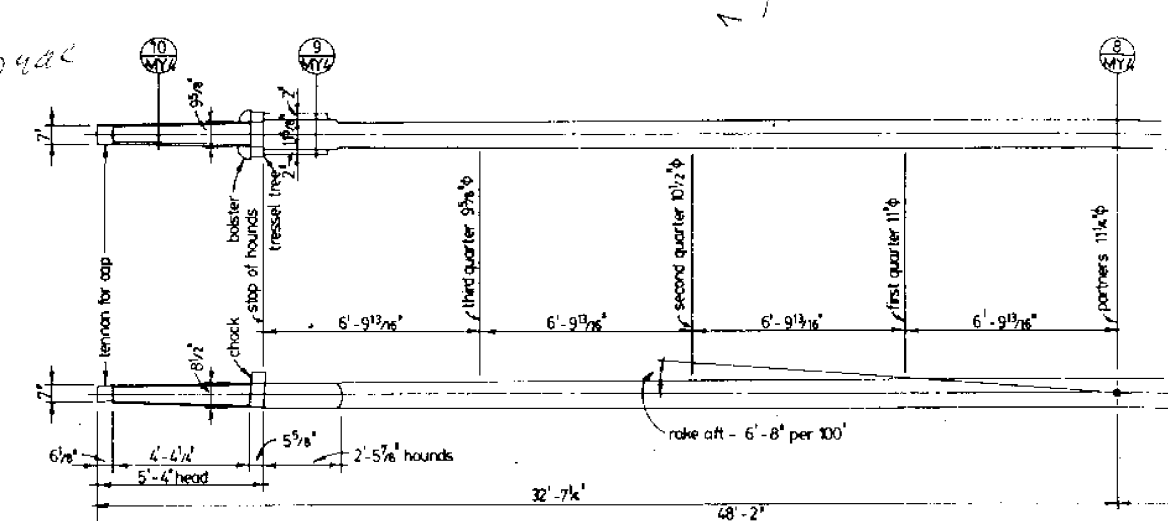
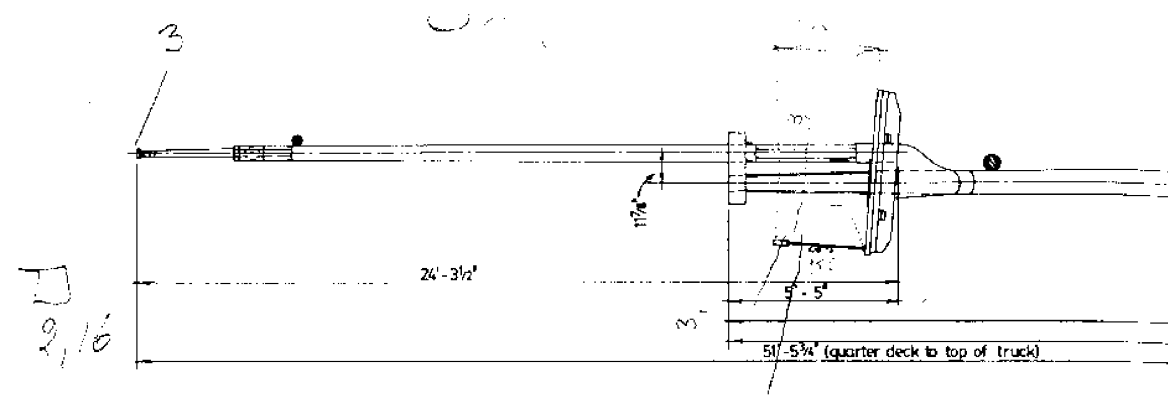
G10/1



G10/2



G10/2



G9/5 Plan and elevation of main lower tressel trees (1/96 scale)

G9/6 Plan of main topmast top (1/48 scale)

G9/7 Plan and elevation of main top tressel trees (1/48 scale)

G9/8 Plan and elevation of main top cross trees (1/48 scale)

G10 MAINMAST DETAILS

G10/1 Main lower mast cap - plan, side elevation and front elevation (1/48 scale)

G10/2 Main lower mast - fid, bolster, chock and bibb (1/96 scale)

G10/3 Main topmast cap - plan, side elevation and front elevation (1/48 scale)

G10/4 Main topmast - fid, bolster and cheek block (1/48 scale)

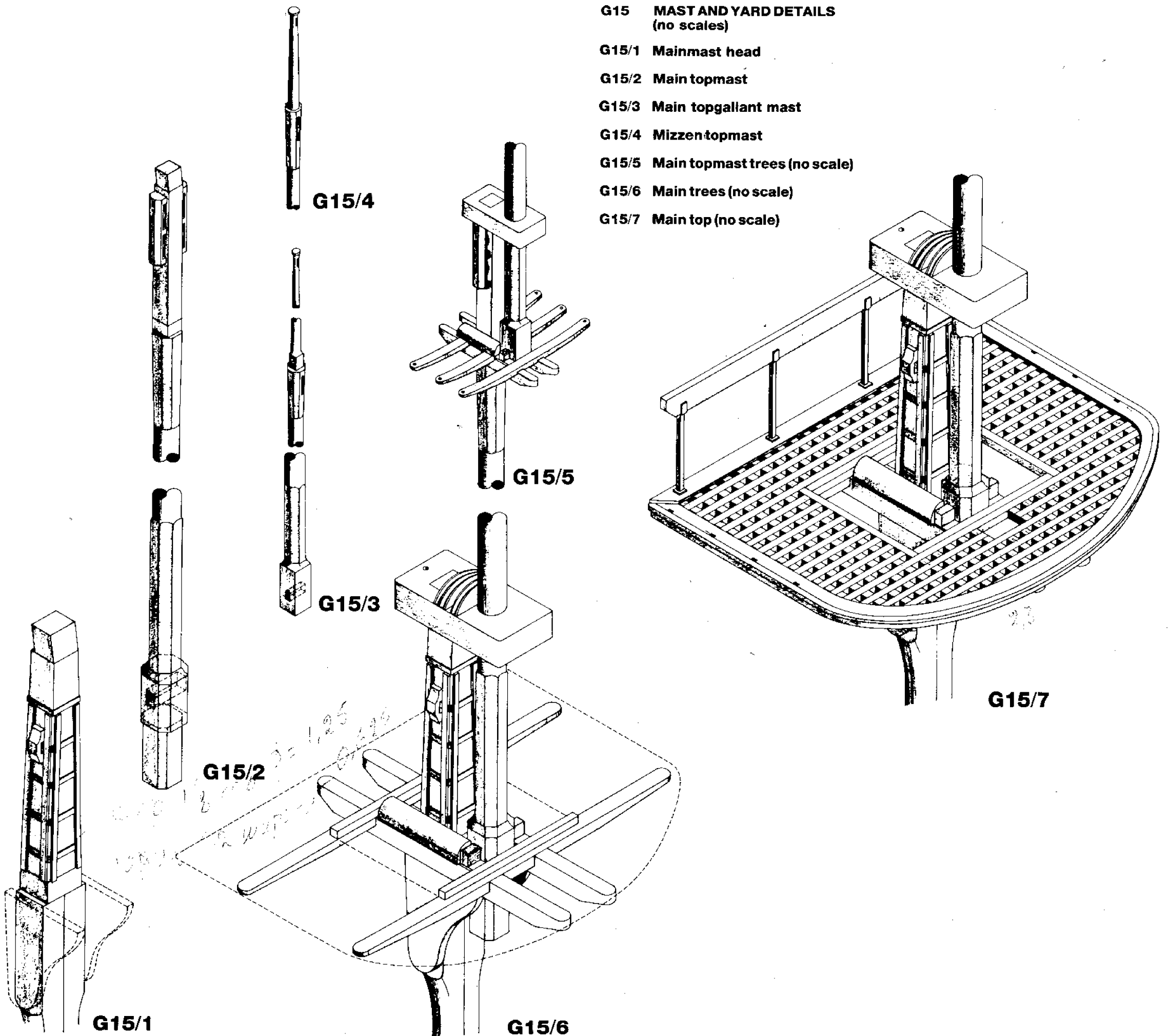
G11 MIZZEN MAST

G11/1 Mizzen mast assembly (1/96 scale)

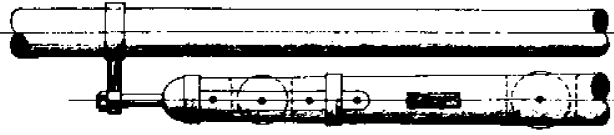
G11/2 Mizzen lower mast - front and side elevation

G11/3 Mizzen topmast (1/96 scale)

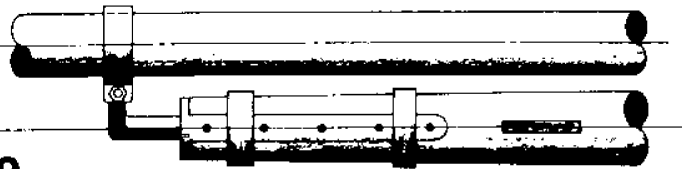
G15/7 Main top (no scale)



G15/8



G15/9



G15/8 Main yardarm

G15/9 Main topyard yardarm

G15/10 Main yard sling cleats

G15/11 Main yard

G15/12 Main yard boom iron

G15/13 Main yard yardarm

G15/14 Main topyard sling cleats

G15/15 Main topyard

G15/16 Main topyard boom iron

G15/17 Main topyard yardarm

G15/18 Main topgallant yard sling cleats

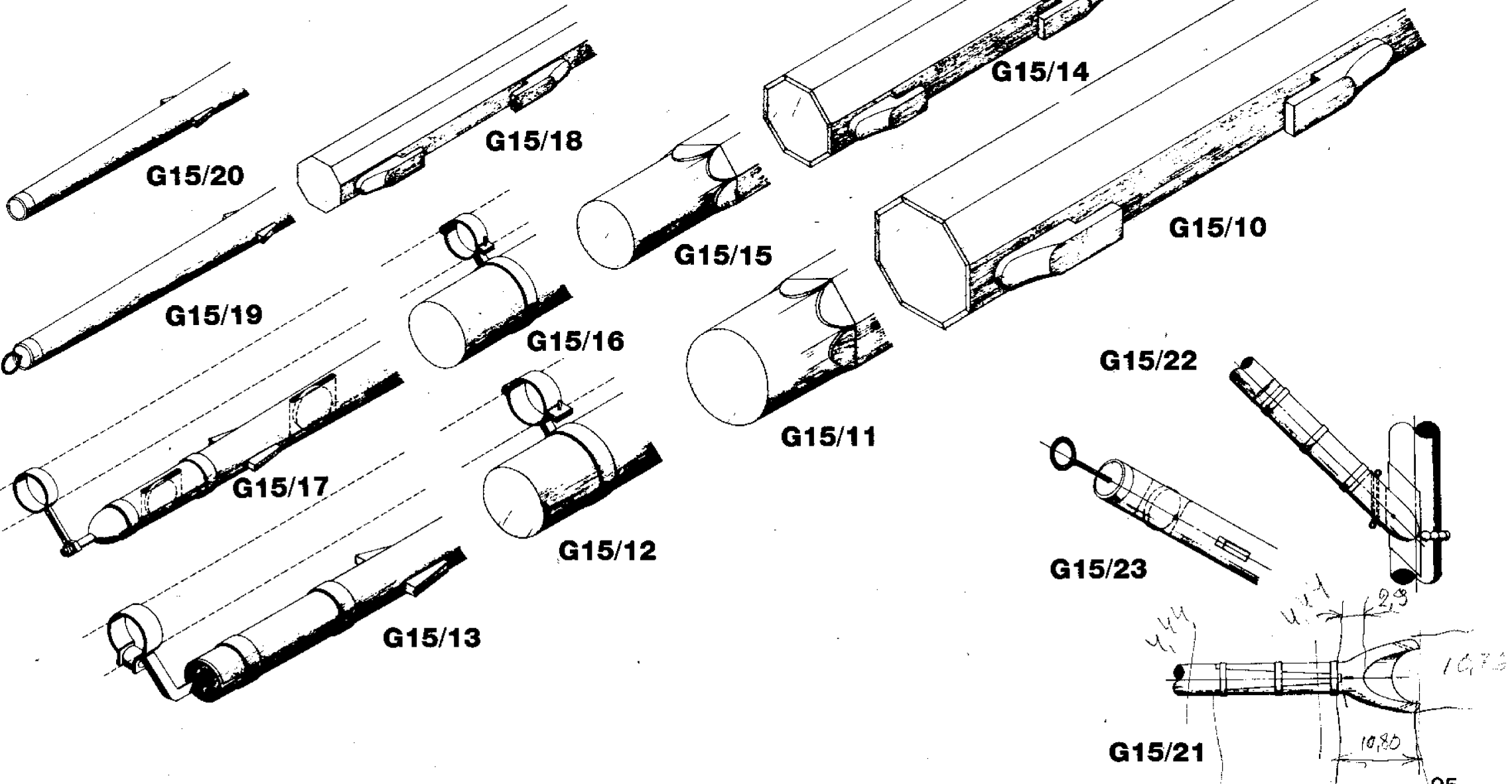
G15/19 Main topgallant yard yardarm

G15/20 Crossjack yard arm

G15/21 Detail of driver boom jaws

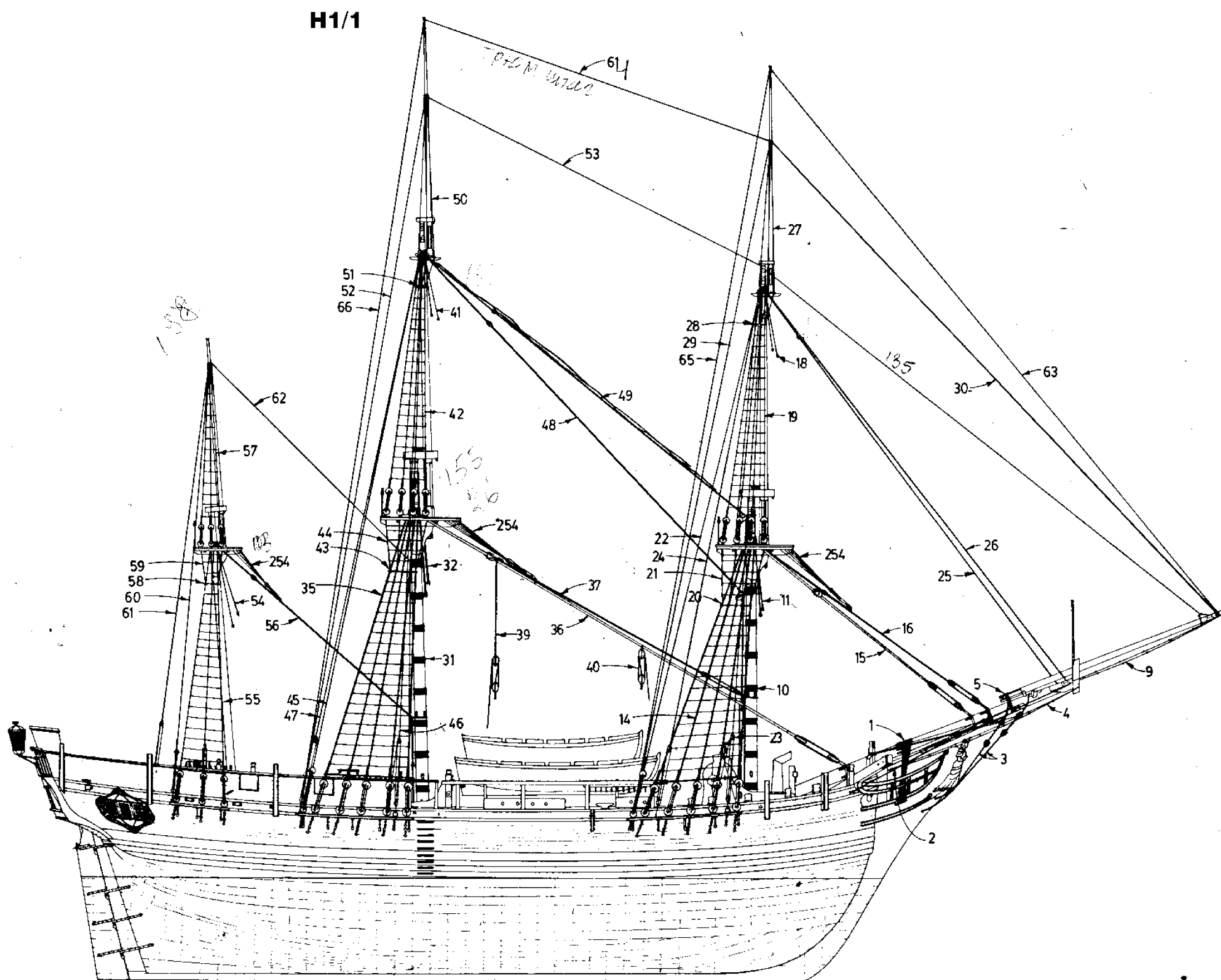
G15/22 Detail of driver boom and mizzen mast

G15/23 Detail of driver boom end



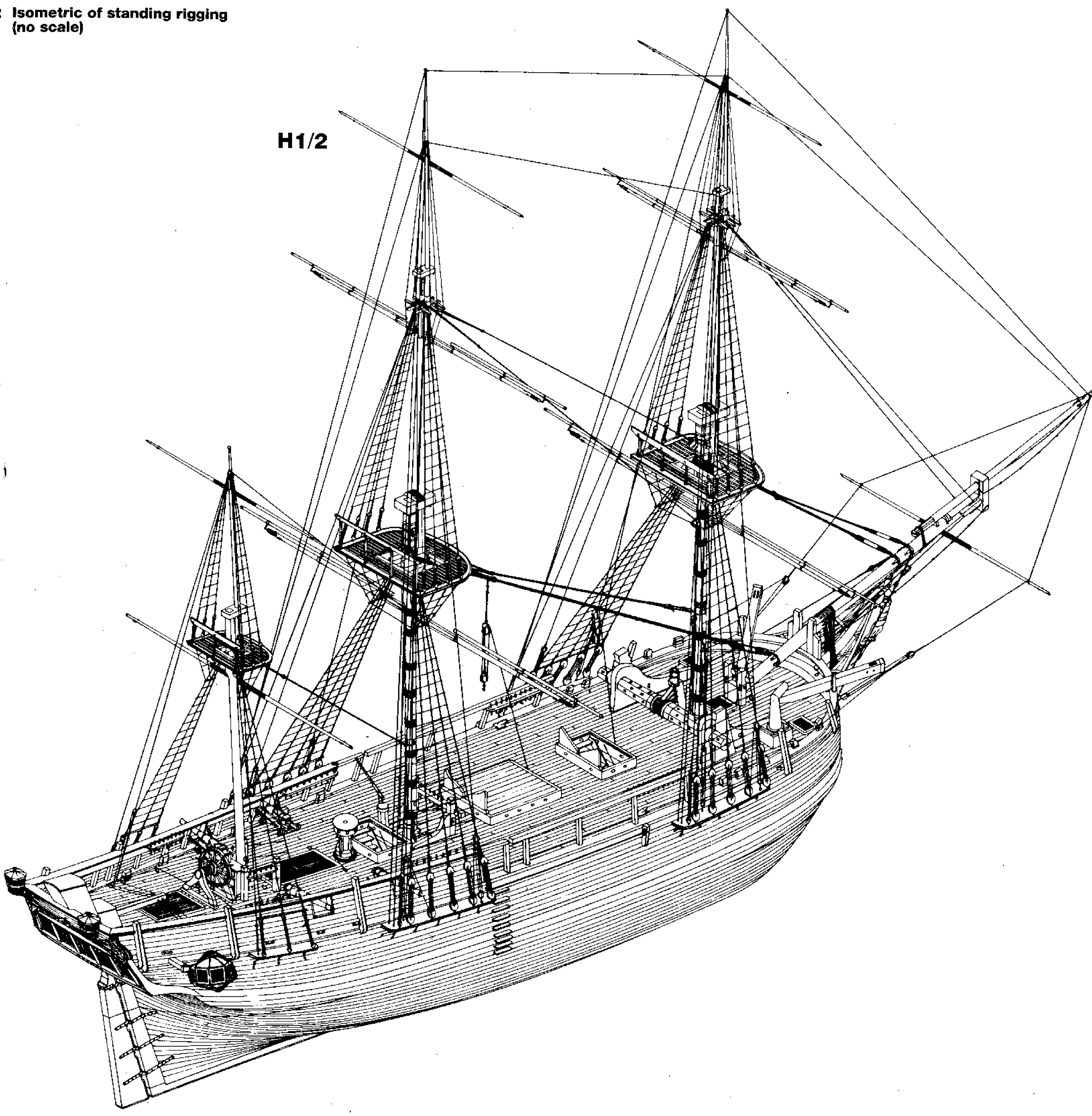
H1 STANDING RIGGING

H1/1 Elevation of standing rigging
(1/192 scale)



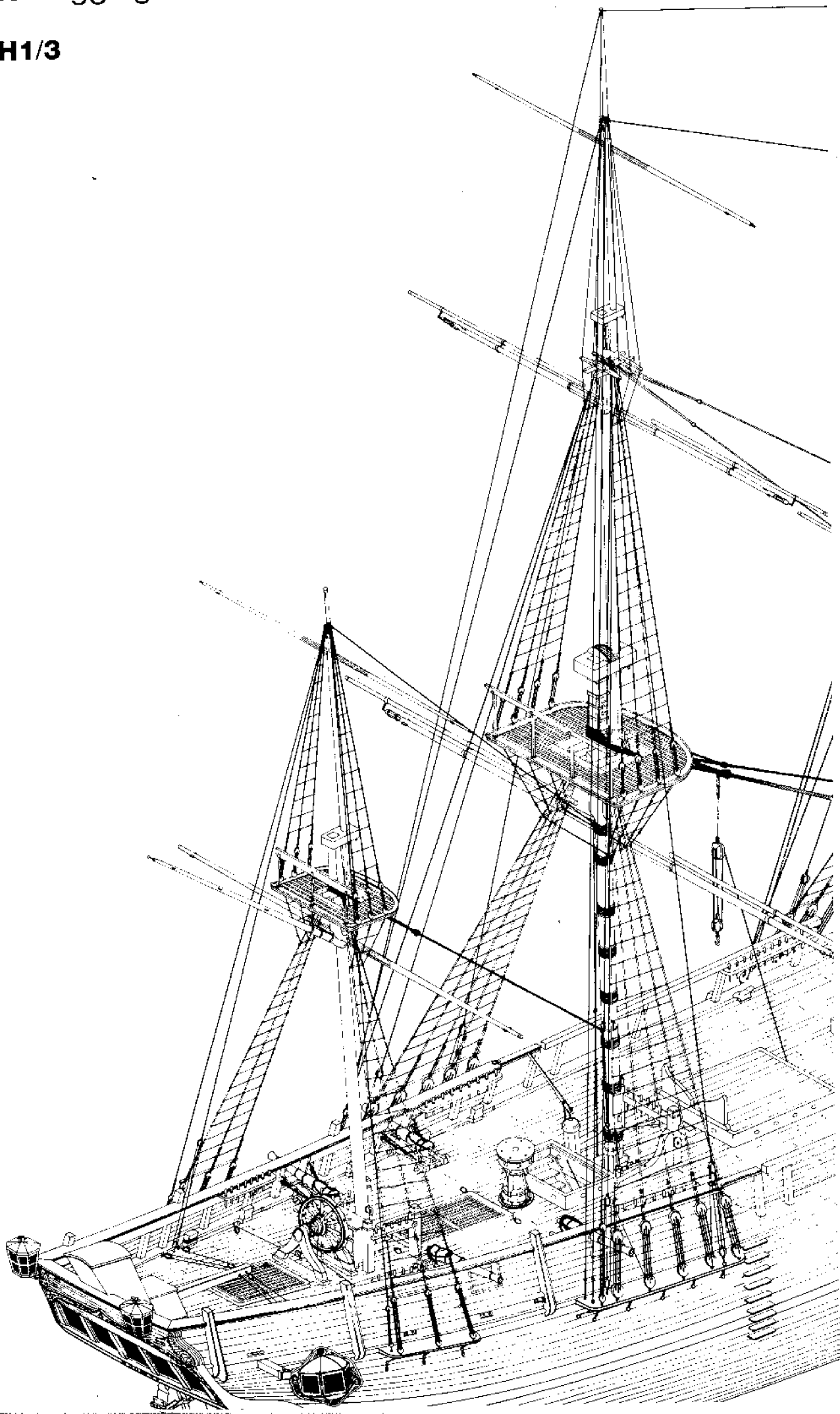
H1/2 Isometric of standing rigging
(no scale)

H1/2

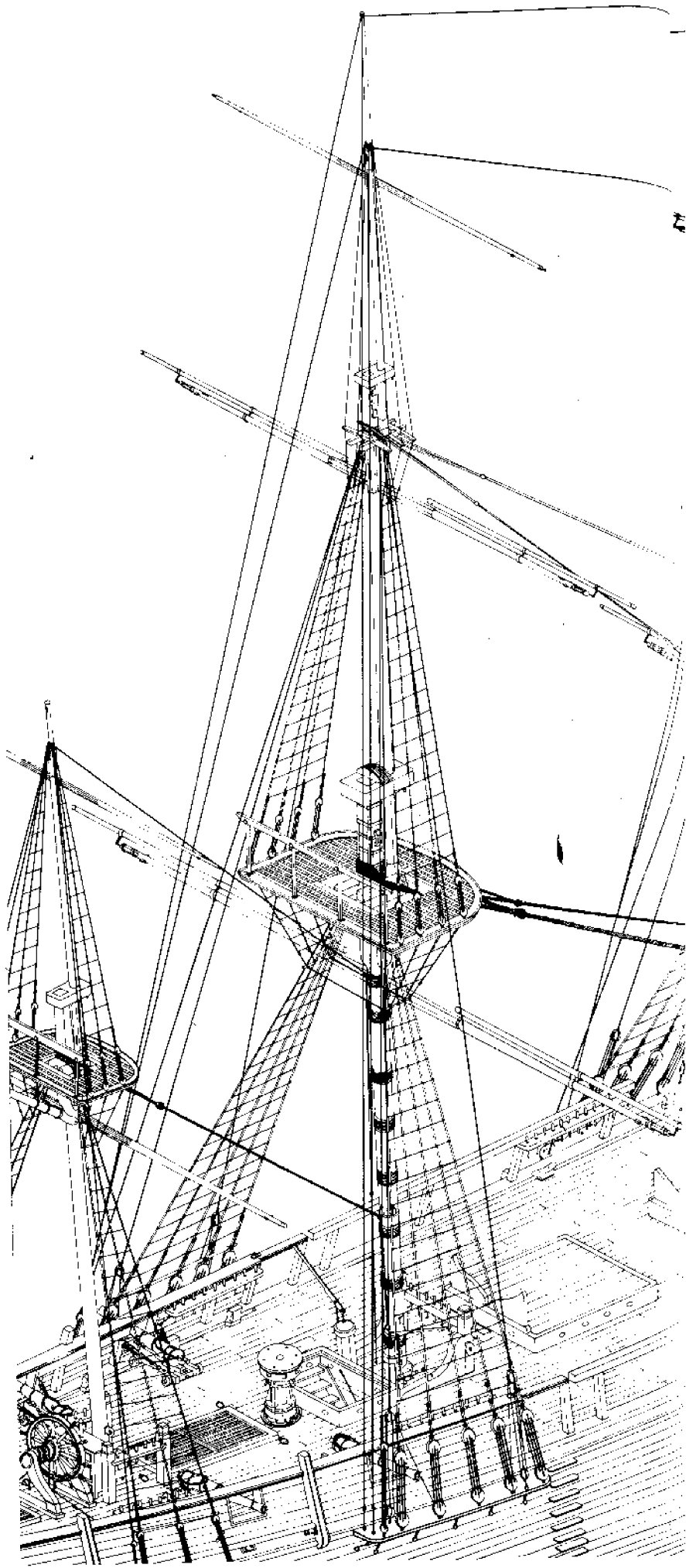


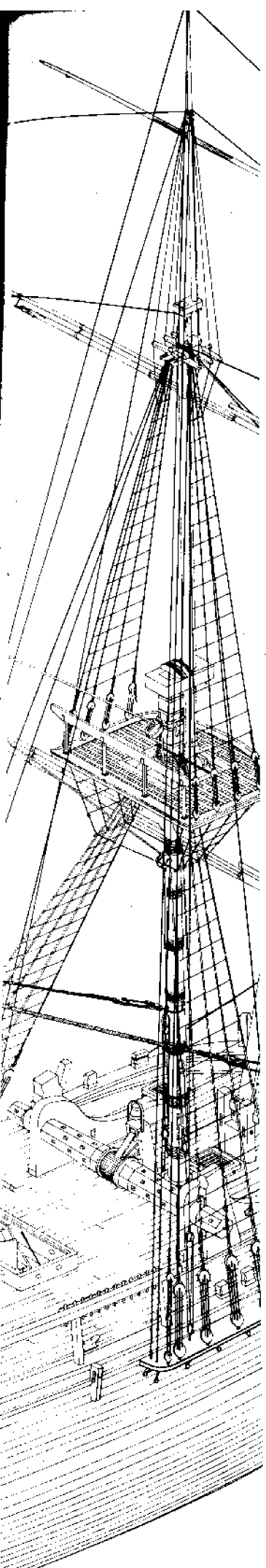
H Rigging

H1/3

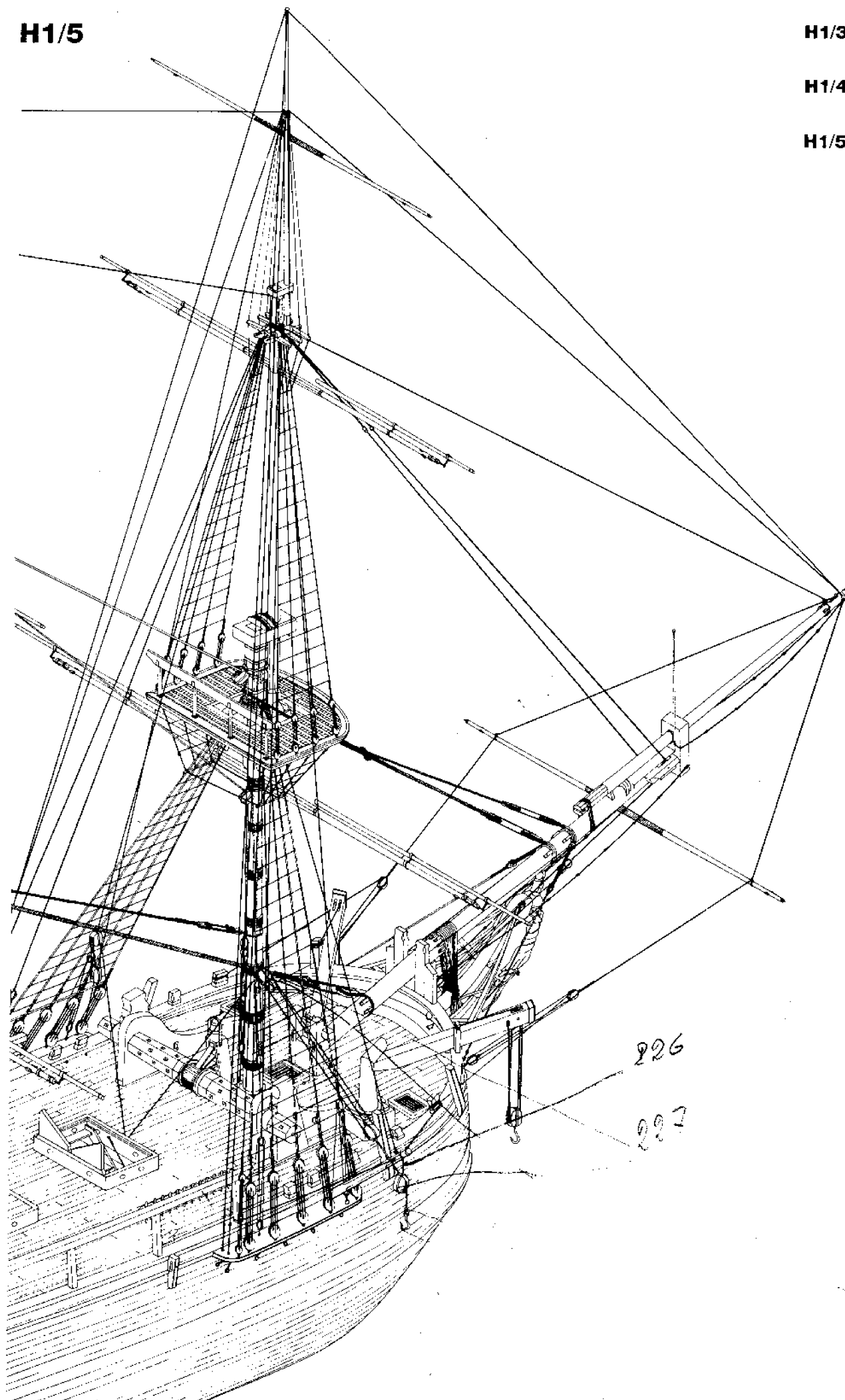


H1/4





H1/5



H1/3 Isometric of mizzen mast standing rigging (no scale)

H1/4 Isometric of mainmast standing rigging (no scale)

H1/5 Isometric of foremast and bowsprit standing rigging (no scale)

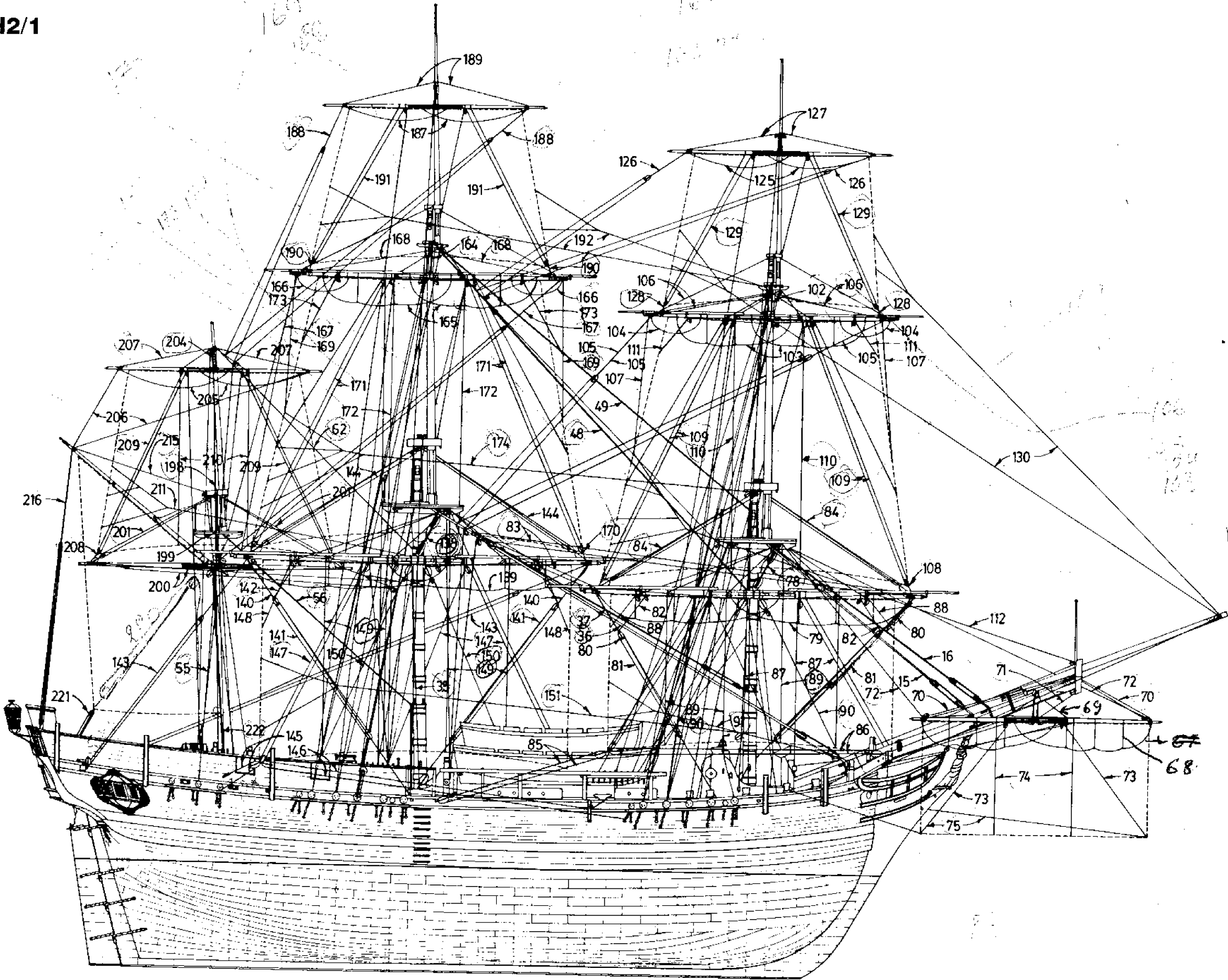
226

227

H2 RUNNING RIGGING

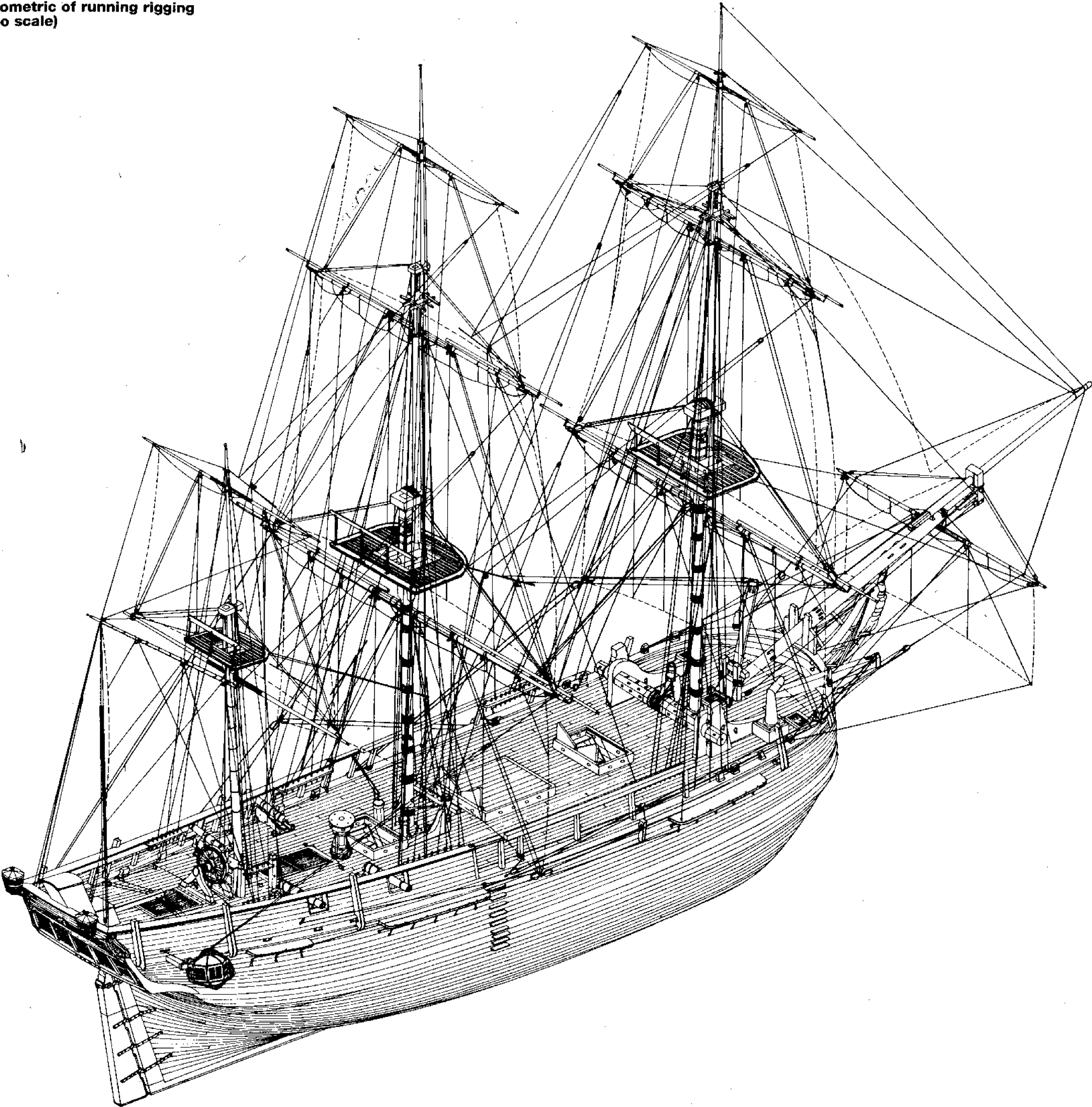
H2/1 Elevation of running rigging
(1/192 scale)

H2/1



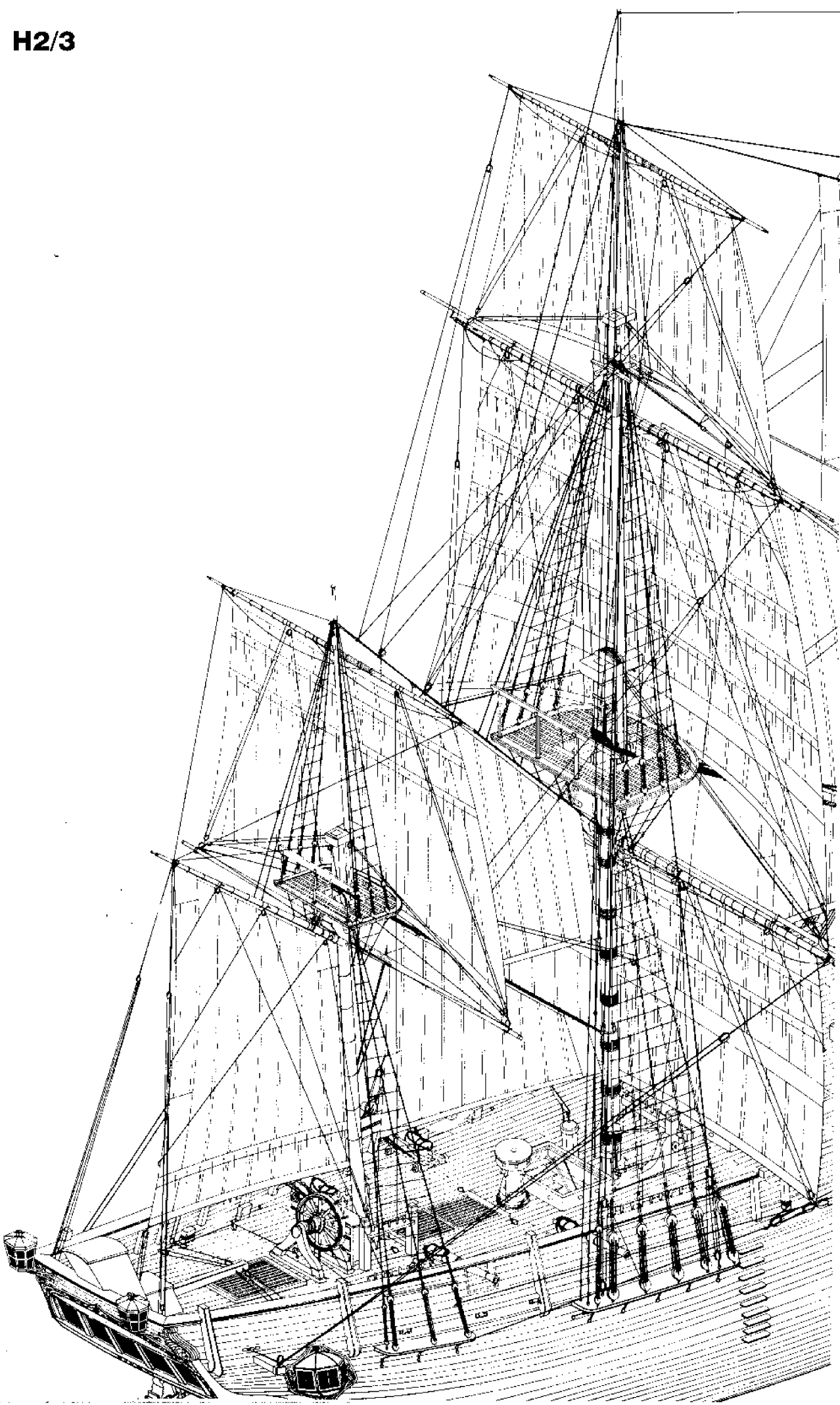
H2/2 Isometric of running rigging
(no scale)

H2/2

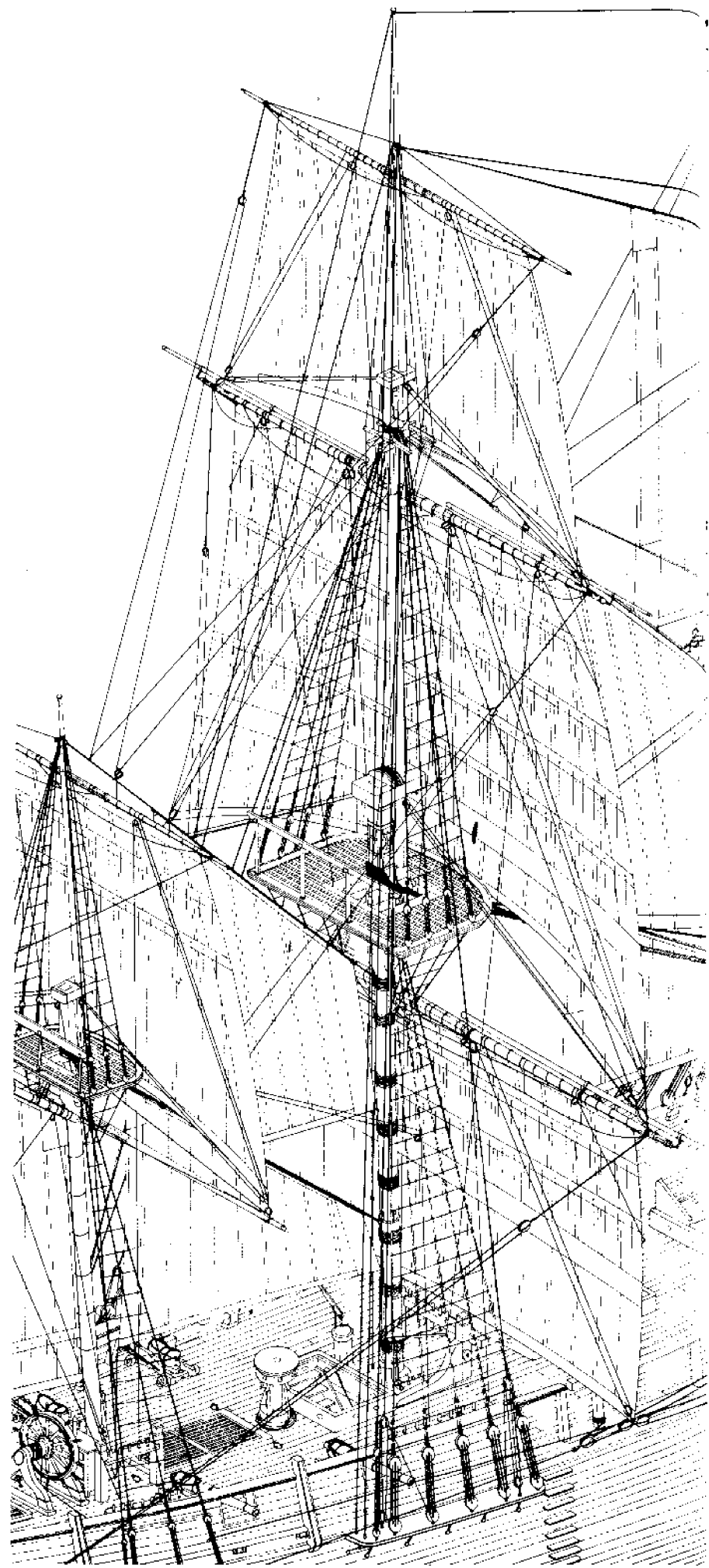


H Rigging

H2/3



H2/4



J Boats

J2 20-FOOT CUTTER

J2/1 Plan (1/96 scale)

- 1. Stem
- 2. Mast
- 3. Keelson
- 4. Thwart
- 5. Coxswain's seat
- 6. Rudder

J2/2 Outboard profile (1/96 scale)

J2/3 Section (1/96 scale)

- 1. Stem
- 2. Keel
- 3. Stern post
- 4. Rudder
- 5. Tiller
- 6. Mast step
- 7. Gunwale
- 8. Frames
- 9. Thwart
- 10. Bowsprit
- 11. Mast

J2/6 Stern (1/96 scale)

J2/4 Body profile (1/96 scale)

J2/5 Bow (1/96 scale)

J2/7 Isometric view (no scale)

J2/10 Mast (1/96 scale)

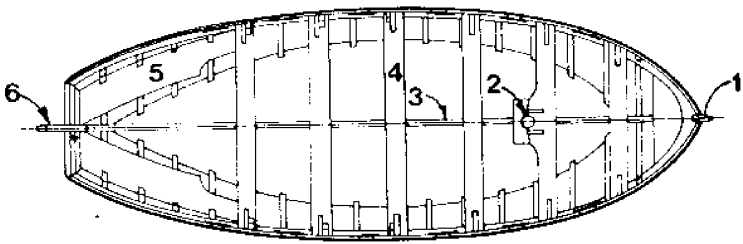
J2/11 Boom (1/96 scale)

J2/12 Gaff (1/96 scale)

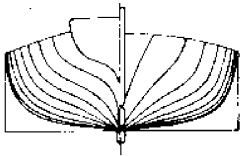
J2/9 Bowsprit (1/96 scale)

J2/8 Sail plan (1/96 scale)

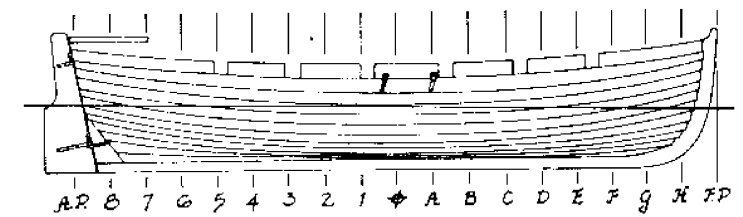
J2/13 Isometric of 20-foot cutter under sail (no scale)



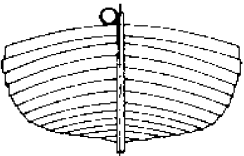
J2/1



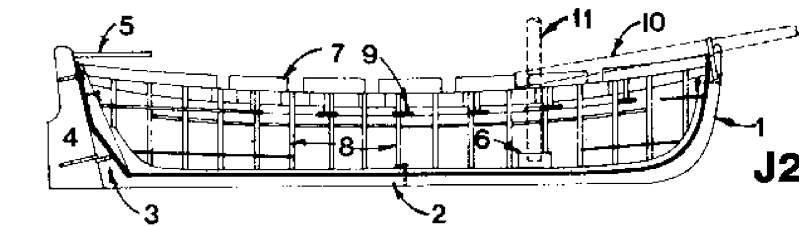
J2/4



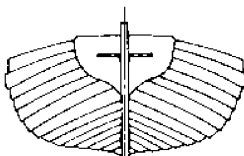
J2/2



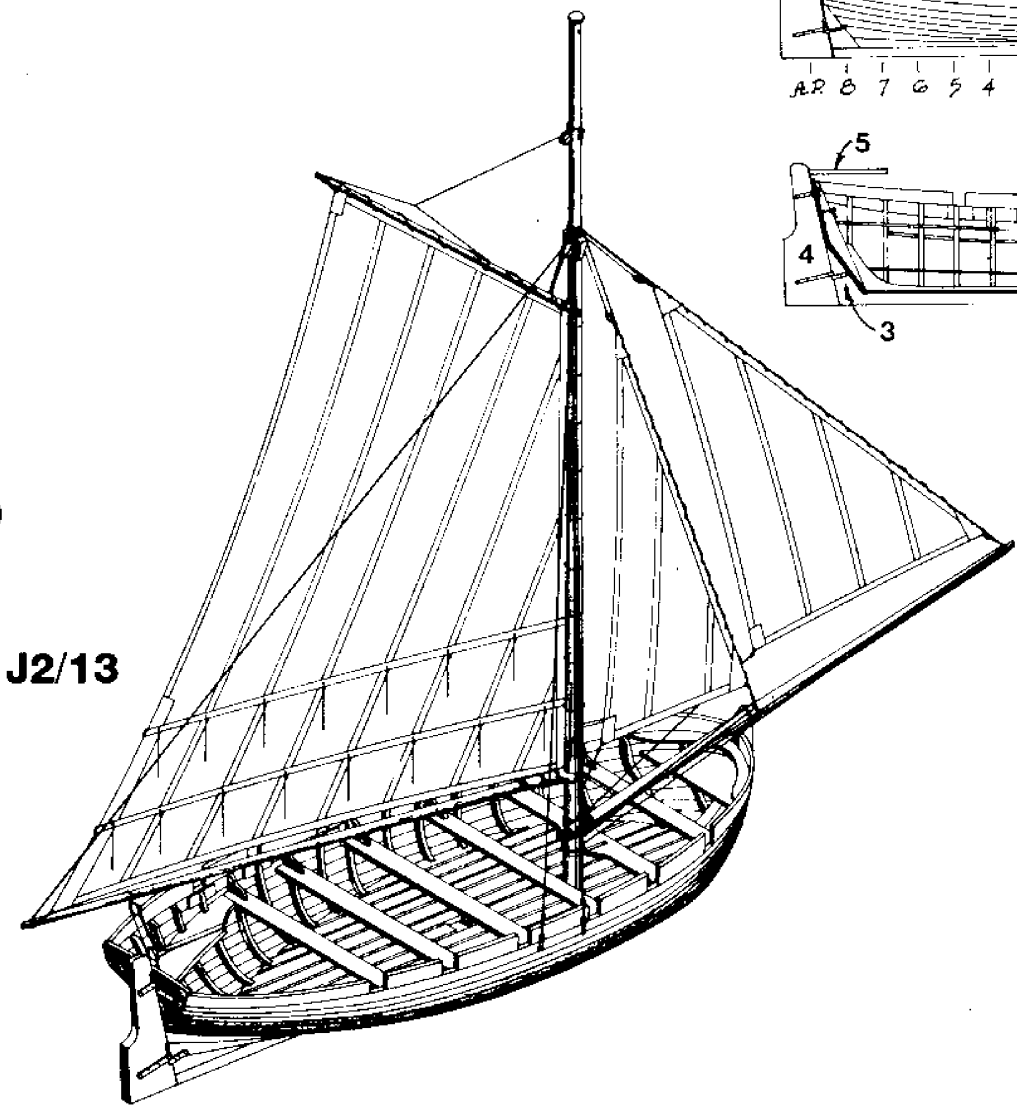
J2/5



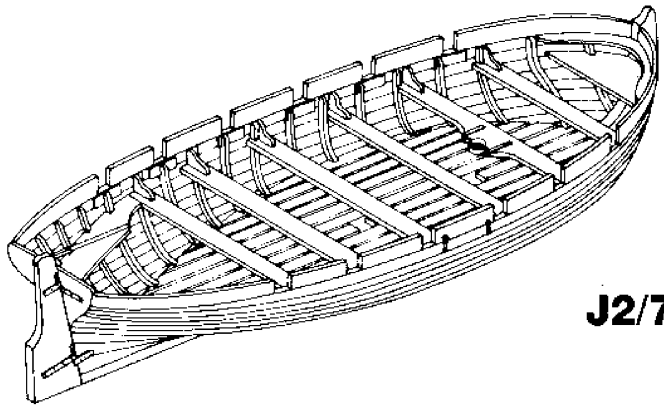
J2/3



J2/6

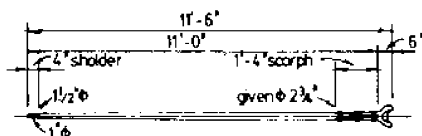


J2/13

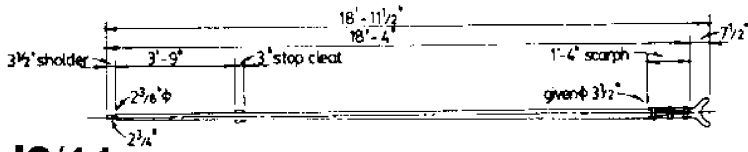


J2/7

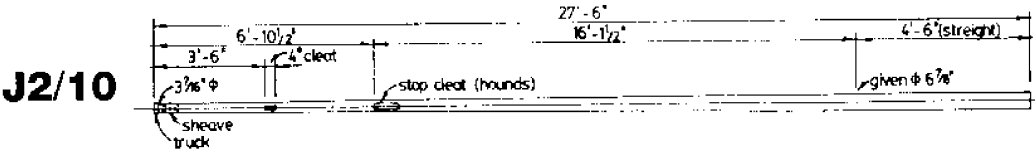
J2/12



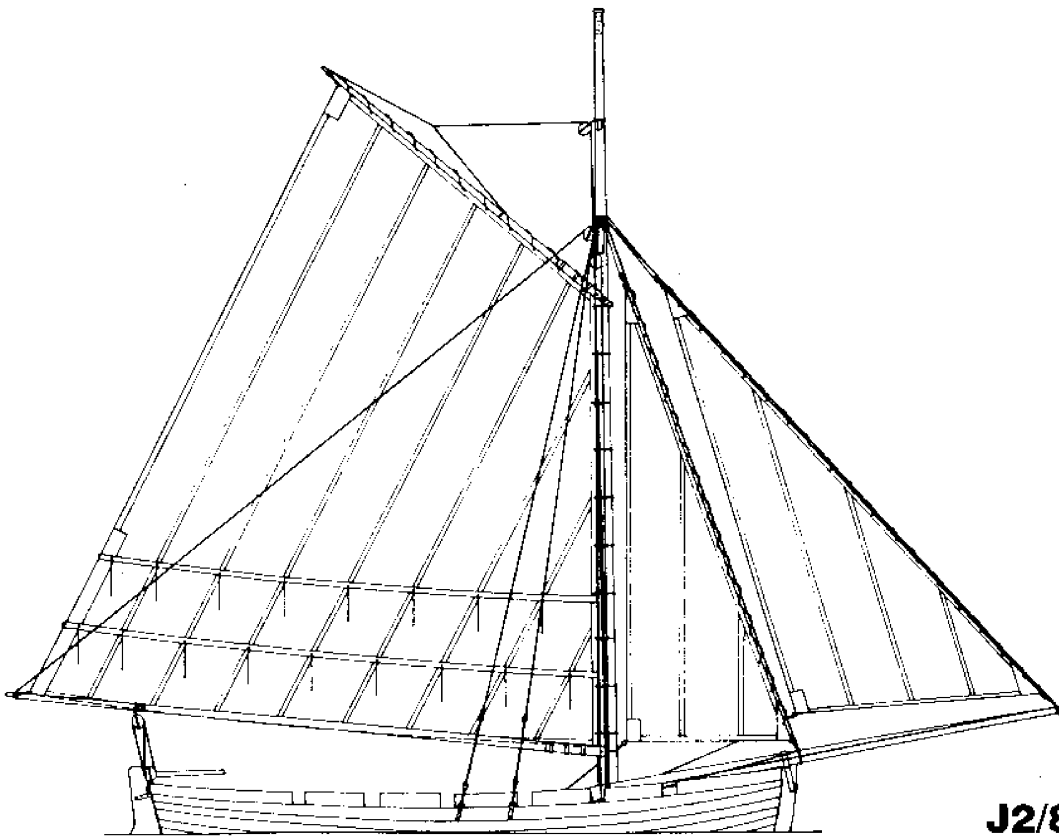
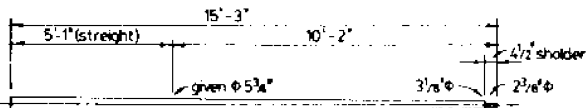
J2/11



J2/10



J2/9



J2/8

Anatomy of the Ship

<http://mirageswar.com/>

Made eternally famous by the mutiny against Captain Bligh in 1789, *Bounty* was a small merchant ship purchased and converted into a naval transport to transplant breadfruit to the plantations of the West Indies. Thanks to good surviving documentation, this book can depict the ship when purchased as the mercantile *Bethia* and also as fitted out for her unusual naval employment.

This volume features

- Full description of the ship, how she came to be purchased, and the short history of her naval service
- Pictorial section emphasising close-up photographs of the recent full-size replicas of the ship
- Colour guide to possible paint scheme on the book jacket
- More than 300 perspective and 3-view drawings, with in-depth descriptive keys, of every detail of the ship – general arrangements, hull construction, fittings, masts, sails and rigging, armament, and the launch in which Bligh made his epic voyage of over 3000 miles to safety in Timor



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