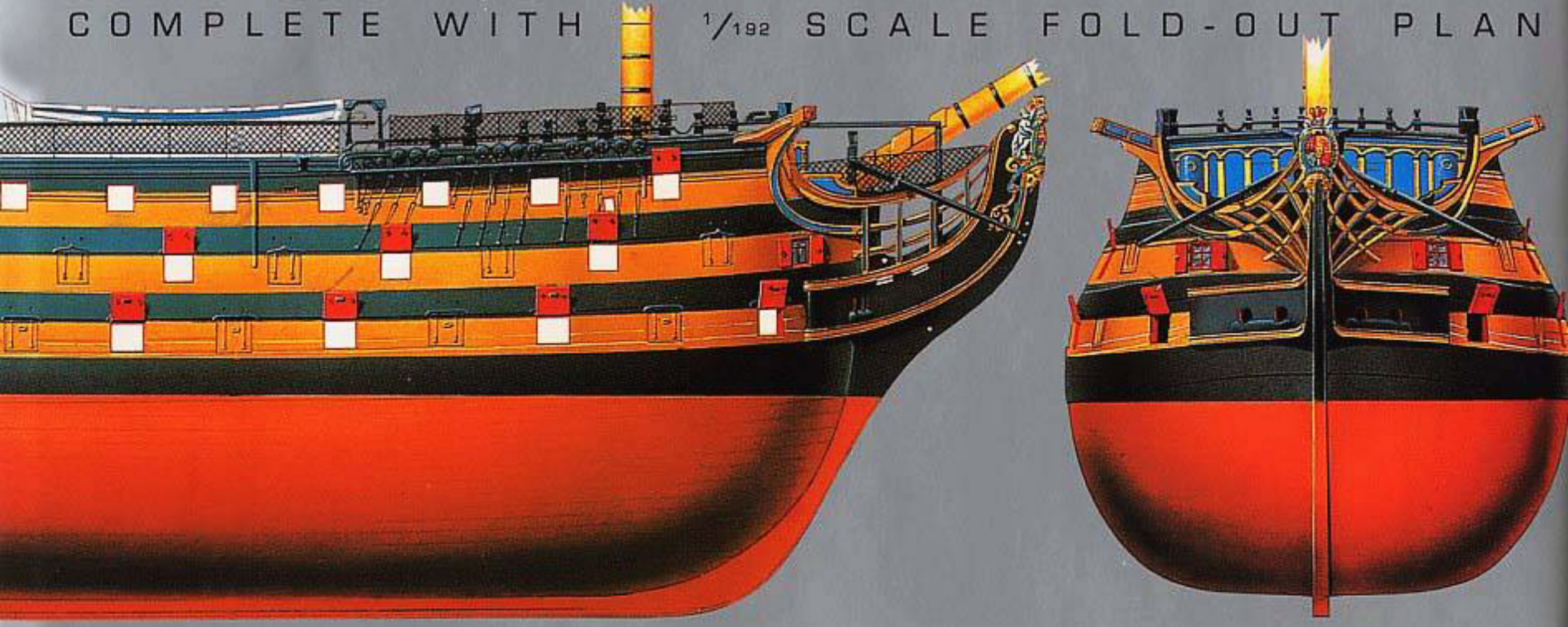
ANATOMY OF THE SHIP

THE 100-GUN SHIP VICTORY

REVISED EDITION

COMPLETE WITH 1/192 SCALE FOLD-OUT PLAN



JOHN McKAY

The 100-gun ship

VICTORY

John McKay

Conway Maritime Press

The 100-gun ship

VICTORY

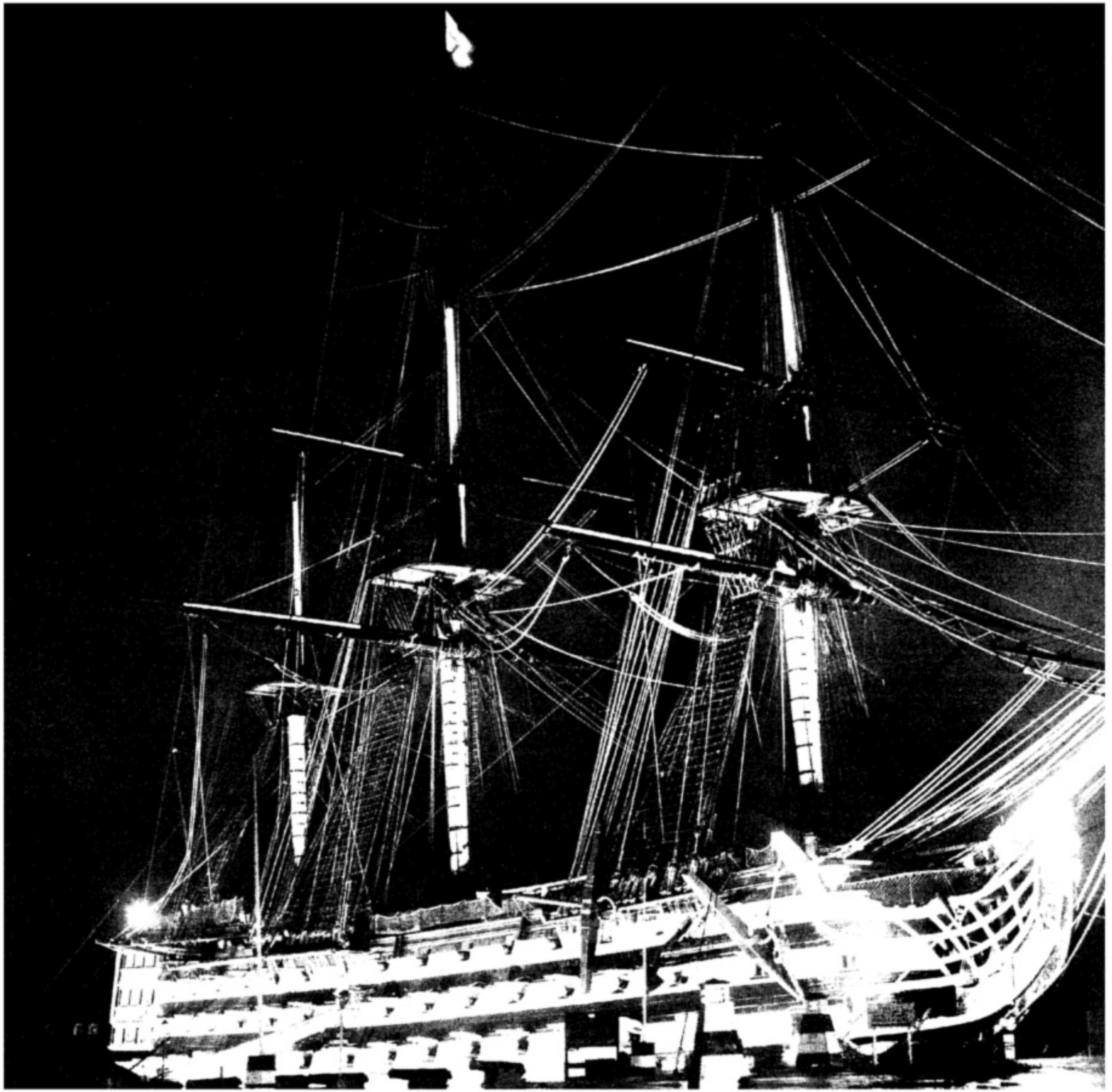


Table 1: **BRITISH FIRST RATES**

1. SOVEREIGN OF THE SEAS, 1637
   Guns: 100
   Tons: 1522
   Yard: Woolwich DYd (Phineas Pett I)
   Renamed and rebuilt: SOVEREIGN, 1660
   Guns: 100
   Tons: 1605
   Yard: Chatham DYd
   Renamed and rebuilt: ROYAL SOVEREIGN, 1685
   Guns: 100
   Tons: 1683
   Yard: Chatham DYd (Lee)
   Rebuilt: ROYAL SOVEREIGN, 1701
   Guns: 100
   Tons: 1883
   Yard: Woolwich DYd (Harding)
   Fate: Broken up in 1768

2. PRINCE, 1670
   Guns: 100
   Tons: 1403
   Yard: Deptford DYd (Phineas Pett II)
   Renamed and rebuilt: ROYAL WILLIAM, 1692
   Guns: 100
   Tons: 1588
   Yard: Chatham DYd (Lee)
   Rebuilt: ROYAL WILLIAM, 1719
   Guns: 100
   Tons: 1918
   Yard: Portsmouth DYd (Walsh)
   Fate: Reduced to 84 guns, broken up in 1813

3. ROYAL JAMES, 1671
   Guns: 100
   Tons: 1416
   Yard: Portsmouth DYd (Deane)
   Fate: Burnt in action 1672

4. ROYAL CHARLES, 1673
   Guns: 100
   Tons: 1443
   Yard: Portsmouth DYd (Deane)
   Renamed and rebuilt: Queen, 1693
   Guns: 100
   Tons: 1528
   Yard: Woolwich DYd (Lawrence)
   Renamed and rebuilt: ROYAL GEORGE, 1715
   Guns: 100
   Tons: 1801
   Yard: Woolwich DYd (Ackworth)
   Fate: Renamed ROYAL ANNE, 1756 (rerated); broken up in 1767

5. ROYAL JAMES, 1675
   Guns: 100
   Tons: 1422
   Yard: Portsmouth DYd (Deane)
   Renamed and rebuilt: VICTORY, 1691
   Guns: 100
   Tons: 1486
   Yard: Chatham DYd (Lee)
   Fate: Renamed ROYAL GEORGE in 1714; renamed VICTORY in 1715; broken up in 1721

6. BRITANNIA, 1682
   Guns: 100
   Tons: 1739
   Yard: Chatham DYd (Phineas Pett II)
   Rebuilt: BRITANNIA, 1719
   Guns: 100
   Tons: 1895
   Yard: Woolwich DYd (Hayward)
   Fate: Harbour service 1745; dismantled in 1749

7. ST ANDREW, 1670 (Second Rate)
   Guns: 96
   Tons: 1338
   Yard: Woolwich DYd (Christopher Pett)
   Renamed and rebuilt: ROYAL ANNE, 1703
   Guns: 100
   Tons: 1722
   Yard: Woolwich DYd (Lee)
   Fate: Broken up in 1757

8. LONDON, 1670 (Second Rate)
   Guns: 96
   Tons: 1328
   Yard: Deptford Dyd (Shish)
   Rebuilt: LONDON, 1706
   Guns: 100
   Tons: 1685
   Yard: Chatham DYd (Rosewell)
   Fate: Enlarged to 1711 tons in 1721; broken up in 1747

9. ROYAL SOVEREIGN, 1728
   Guns: 100
   Tons: 1883
   Yard: Chatham DYd (built to 1719 Establishment)
   Fate: Broken up in 1768

10. VICTORY, 1737
    Guns: 100
    Tons: 1921
    Yard: Portsmouth DYd (built to 1733 proposed Establishment)
    Fate: Sank in 1744

11. ROYAL GEORGE, 1756
    Guns: 100
    Tons: 2047
    Yard: Woolwich DYd (built to 1745 Establishment)
    Fate: Sank in 1782

12. BRITANNIA, 1762
    Guns: 100
    Tons: 2116
    Yard: Portsmouth DYd (built to 1745 Establishment)
    Fate: Renamed PRINCESS ROYAL in 1810; renamed ST GEORGE in 1812; renamed BARFLEUR in 1819; broken up in 1825

13. VICTORY, 1765
    Guns: 100
    Tons: 2142
    Yard: Chatham DYd (Slade)
    Fate: Restored and preserved as museum ship

14. ROYAL SOVEREIGN, 1786
    Guns: 100
    Tons: 2175
    Yard: Plymouth DYd (Hunt)
    Fate: Harbour service 1826, broken up in 1841

15. ROYAL GEORGE, 1788
    Guns: 100
    Tons: 2286
    Yard: Chatham DYd (Hunt)
    Fate: Broken up in 1822

16. QUEEN CHARLOTTE, 1790
    Guns: 100
    Tons: 2286
    Yard: Chatham DYd (Hunt)
    Fate: Accidently blown up in 1800

17. VILLE DE PARIS, 1795
    Guns: 110
    Tons: 2351
    Yard: Chatham DYd (Henslow)
    Fate: Harbour service in 1824; broken up in 1845

18. HIBERNIA, 1804
    Guns: 110
    Tons: 2530
    Yard: Plymouth DYd (Henslow)
    Fate: Base ship 1855; sold in 1902

19. CALEDONIA, 1808
    Guns: 120
    Tons: 2616
    Yard: Plymouth DYd (Rule)
    Fate: Hospital ship 1856; broken up in 1875

20. QUEEN CHARLOTTE, 1810
    Guns: 104
    Tons: 2269
    Yard: Deptford DYd (Hunt)
    Fate: Screw ship 1860; broken up 1928

21. NELSON, 1814
    Guns: 120
    Tons: 2617
    Yard: Woolwich DYd (Surveyors of the Navy)
    Fate: Screw ship 1860; broken up in 1928

22. ST VINCENT, 1815
    Guns: 120
    Tons: 2601
    Yard: Plymouth DYd (Surveyors of the Navy)
    Fate: Harbour service 1841; sold in 1906

23. HOWE, 1815
    Guns: 120
    Tons: 2619
    Yard: Chatham DYd (Surveyors of the Navy)
    Fate: Broken up in 1854

24. BRITANNIA, 1820
    Guns: 120
    Tons: 2613
    Yard: Plymouth DYd (Rule)
    Fate: Training ship 1859; broken up in 1869

25. PRINCE REGENT, 1823
    Guns: 120
    Tons: 2613
    Yard: Chatham DYd (Rule)
    Fate: Screw ship 1861; broken up in 1873

26. PRINCESS CHARLOTTE, 1825
    Guns: 104
    Tons: 2443
    Yard: Portsmouth DYd (based on *Victory*)
    Fate: Receiving ship 1858; sold 1875

27. ROYAL GEORGE, 1827
    Guns: 120
    Tons: 2616
    Yard: Chatham DYd (Rule)
    Fate: Screw ship 1853; sold 1875

28. ROYAL ADELAIDE, 1828
    Guns: 104
    Tons: 2448
    Yard: Portsmouth DYd (based on *Victory*)
    Fate: Depot ship 1860; sold 1905

29. NEPTUNE, 1832
    Guns: 120
    Tons: 2694
    Yard: Portsmouth DYd (Rule)
    Fate: Screw ship 1859; sold 1875

30. ROYAL WILLIAM, 1833
    Guns: 120
    Tons: 2694
    Yard: Pembroke DYd (Rule)
    Fate: Screw ship 1860; burnt in 1899

31. WATERLOO, 1833
    Guns: 120
    Tons: 2694
    Yard: Chatham DYd (Rule)
    Fate: Screw ship 1859; burnt 1918

32. QUEEN, 1839
    Guns: 110
    Tons: 3104
    Yard: Portsmouth DYd (Symonds)
    Fate: Screw ship 1859, broken up 1871

33. ST GEORGE, 1840
    Guns: 120
    Tons: 2694
    Yard: Plymouth DYd (Rule)
    Fate: Screw ship 1859, sold in 1883

34. TRAFALGAR, 1841
    Guns: 120
    Tons: 2694
    Yard: Woolwich DYd (Rule)
    Fate: Screw ship 1859; sold in 1906

Note: Dates given are for year of launch or year of launch after rebuild. Builders' or designers' names are shown in parentheses after dockyard

Contents

Introduction

Much has been written about HMS *Victory*, Lord Nelson, the Battle of Trafalgar and sea life of the eighteenth century by many respected historians. This book is aimed at examining *Victory* from a technical point of view and placing her in the correct contemporary context as a First Rate ship of the line. As the drawings show the ship in her Trafalgar condition – indeed, she has been restored to that state – the book emphasises the particulars of that time.

THE FIRST RATE SHIPS

The first ship of the Royal Navy to carry 100 guns was launched in 1637 as *The Sovereign of the Seas*. As initially planned she was to carry 90 guns, but King Charles I, presumably for reasons of prestige, insisted on a hundred (102 to be exact). This was a portent. From this ship, whose longevity through rebuilds is remarkable, evolved the later First Rates of the Royal Navy.

Very few First Rates were built during any period of British naval history. At one point, around 1712, there were no First Rates on active duty and it is assumed that Second Rates performed their function. (The Second Rate was also a three-decked ship, though shorter, so officer accommodation was roughly that of a First Rate.) So few of these ships were constructed that Sir Thomas Slade, a most able and prolific designer, had but one built. Of a fleet of perhaps 150 battleships no more than 4 or 5 would be First Rates. They were, quite simply, too expensive to build, man and maintain. Besides, most of the work of the Navy could be performed by Third Rates.

Many problems were encountered in building these large ships and a decision to do so was as much political and financial as it was military. Building a First Rate ship in the eighteenth century was tantamount to building a capital ship during the Second World War. They were expensive (a great part of King Charles I's financial woes was caused by naval expenditures) and parliament invariably resisted approving the large sums required for them. Even Samuel Pepys in a brief moment of exasperation mused 'Why not all Third Rates?' As most of these ships were built during or under the threat of war, costs tended to increase due to problems of supply and inflation. Furthermore, each new design was slightly larger than its predecessor.

This gradual increase in size was a natural and necessary process and is evident in all rates of battleship. It was precipitated by the need for heavier armament (to counter the threat, real or perceived, of enemy navies) and a desire to keep ships on station for long periods of time. Provisioning ships at sea, particularly on blockade duty, was always a headache for the Royal Navy and as the Seven Years War was fought on a global scale, His Majesty's ships were expected to put to sea for three or four months.

Despite these problems, First Rate three-deckers were constructed and commissioned, and once at sea they were indispensable: as flagships they were large enough to accommodate a fleet Admiral and his staff. They served national prestige as their size made them politically impressive and, above all, they could engage anything afloat, and were not noticeably slower than the rest of the fleet. They usually became the focal point of fleet actions.

The Sovereign of the Seas spawned the First Rates of the Restoration navy, and from these grew the rather more austere and efficient three-deckers of the eighteenth century. The process of expansion did not end there. In 1795 *Ville de Paris* of 110 guns was launched and the 120-gun *Caledonia* was launched in 1808. These extremely large ships were among the last wooden capital ships to be built by entirely traditional methods and in sailing qualities were not as successful as their smaller predecessors – wood, hemp and canvas had been pushed beyond their limits. However, *Victory* is a good example of her class at its apex: efficient, powerful and beautiful.

VICTORY'S HISTORY

The first years of the Seven Years War saw many military disappointments for Britain, but 1759 was the turning point in what is now seen as the first of world wars. Britain had won many victories that year, in North America, the Caribbean and in Europe, her efforts climaxing in the great sea battle at Quiberon Bay on 20 November. Prime Minister Pitt, recognizing that France was still a threat and knowing that Britain's strength lay in her Navy, had ordered twelve new ships of the line to be built. One of these ships was to be a First Rate of 100 guns, the most powerful class of warship afloat. When asked by the secretary of the Navy, Lord Anson, what this ship should be named, Pitt answered, 'The Victory'. Thus, politically, was conceived the most famous British warship of all time.

HMS *Victory*, the subject of this book, was not the first ship of the Royal Navy to bear that name. She had four predecessors:

1. The first *Victory* was built in 1559 and named the *Great Christopher*. She was purchased by Queen Elizabeth for the Navy and renamed. In 1586 she was rebuilt to 800 tons and carried 34 guns with a crew of 750 (including 300 marines). At the defeat of the Spanish Armada in 1588, she was the flagship of Sir John Hawkins.
2. Phineas Pett designed the second *Victory*. This ship was built at Deptford Dockyard by Burrell and launched in 1620. As originally built she was of 870 tons and carried 42 guns with a crew of 500. She was rebuilt in 1666 to 1029 tons to carry 80 guns. She was broken up in 1691.
3. The *Royal James* of 1675 became the third *Victory*. Built by Deane at Portsmouth, the *Royal James* was a First Rate of 100 guns renamed *Victory* in 1691. She was rebuilt from 1422 tons to 1486 tons in 1695 at Chatham Dockyard by Lee. Her guns after rebuild remained at 100 with a crew of 754. She was broken up in 1721.
4. The fourth *Victory* suffered a tragic fate. Launched at Portsmouth in 1737, she was of 1920 tons, carried 100 guns and had a crew of 900. She was lost during a gale while off the Casquets in October 1744. Her whole crew perished with her – this tragedy caused the name 'Victory' to be deleted, temporarily, from the Admiralty's list of ship names.

PREFACE TO REVISED EDITION

It is likely that there are few authors that would not welcome the opportunity of having their work republished in a revised edition. This is particularly valid for this volume on HMS *Victory* as work is almost constantly being performed on the ship to preserve her and to bring her as close as possible to her Trafalgar appearance. Much has been done to these ends since this Anatomy volume first appeared in 1987. Research by the Victory Advisory Technical Committee found that changes were required in the galley area (a tile floor and steam trunk were needed) and in the hold the magazine forward was altered. The current volume embodies these changes. Further, I have benefited from some constructive criticism from a number of people, amateur and expert alike and this criticism pointed out some small but annoying errors in the text that have now been corrected. It is reasonably safe to say that there will never be a final word on *Victory*; research and restoration will continue, but to date this book reflects current thinking.

John McKay
Langley, B.C.
6th August, 2000

Frontispiece
View of *Victory* at night, 30 September 1958.
(Conway Picture Library)

First published in Great Britain in 1987
Reprinted 1992, 1995

This Revised Edition first published in
Great Britain in 2000 by
Conway Maritime Press
A division of Chrysalis Books
9 Blenheim Court, Brewery Road
London N7 9NT

Reprinted 2002

A member of the Chrysalis Group plc

www.conwaymaritime.com

ISBN 0 85177 7988

Designed by Jonathan Doney
Typeset by Inforum Ltd, Portsmouth
Printed and bound in Great Britain by
The Bath Press

Table 2: **FLAG OFFICERS COMMANDING VICTORY**

Date	Officer	Station
Mar 1778 – May 1778	Private Ship – Captain Sir John Lindsay	
May 1778 – Mar 1779	Admiral Hon Augustus Keppel	Channel Fleet (action off Ushant)
Mar 1779 – May 1780	Admiral Sir Charles Hardy	Channel Fleet
May 1780 – Sept 1780	Admiral Sir Francis Geary	Channel Fleet
Sept 1780	Private Ship	Channel Fleet
Sept 1780 – Dec 1780	Vice-Admiral Francis William Drake	Channel Fleet
Mar 1781 – May 1781	Vice-Admiral Hyde Parker	Channel Fleet
June 1781 – Aug 1781	Commodore John Elliot	Channel Fleet
Sept 1781 – Mar 1782	Rear-Admiral Richard Kempenfelt	Channel Fleet
Apr 1782 – Nov 1782	Admiral Lord Howe	Channel Fleet (action off Cape Spartel, relief of Gibraltar)
1789	Admiral of the Fleet Lord Hood	Channel Fleet
Aug 1790 – Aug 1791	Admiral Lord Hood	Channel Fleet
Feb 1793 – May 1793	Rear-Admiral Sir Hyde Parker	Mediterranean Fleet
May 1793 – Dec 1794	Lord Hood	Mediterranean Fleet (act on with Toulon Fleet; capture of San Fiorenzo and Bastia)
July 1795 – Sept 1795	Rear-Admiral John Man	Mediterranean Fleet (action off Hyères)
Oct 1795 – Nov 1795	Vice-Admiral Robert Linzee	Mediterranean Fleet
Dec 1795 – Feb 1797	Admiral Sir John Jervis	Mediterranean Fleet (Battle of St Vincent)
Feb 1797 – Oct 1797	Private Ship	Mediterranean Fleet
Apr 1803 – Aug 1805	Admiral Lord Nelson	Mediterranean Fleet (West Indies pursuit)
Sept 1805 – Oct 1805	Admiral Lord Nelson	Blockade of Cadiz (Battle of Trafalgar)
Oct 1805 – Dec 1805	Private Ship – Captain Thomas Masterman Hardy	
Mar 1808 – Nov 1808	Rear-Admiral Sir James Saumarez	Baltic Fleet
Dec 1808 – Jan 1809	Private Ship – Captain J C Searle	Evacuation of Corunna
Mar 1809 – Dec 1809	Rear-Admiral Sir James Saumarez	Baltic Fleet
Mar 1810 – Dec 1810	Rear-Admiral Sir James Saumarez	Baltic Fleet
Dec 1810 – Mar 1811	Rear-Admiral Sir Joseph Yorke	Spain (reinforcement of Wellington's Army)
Apr 1811 – Dec 1811	Vice-Admiral Sir James Saumarez	Baltic Fleet
Apr 1812 – Nov 1812	Vice-Admiral Sir James Saumarez	Baltic Fleet

The building of the fifth *Victory* began under the pressure of war, but this pressure was relieved midway through construction and she was finished off at a relaxed pace. From the laying of her keel to her first being floated, six years elapsed. Immediately upon launch she was placed in Ordinary (*ie* Reserve) at Chatham where she remained until war efforts again required her services. She had obviously been masted, rigged and finished soon after launch for in 1769 she was taken out for sea trials. *Victory* was commissioned on 12 March 1778 and by May of that year she was the flagship of the main fleet under the command of Admiral Keppel.

Victory first saw action on 23 July 1778 at the Battle of Ushant when the British and French fleets, each of 30 ships, fought briefly and indecisively, due to the French Admiral's reluctance to engage the British. Both fleets sustained some damage and on 31 July, *Victory* returned to Plymouth for repairs. After this short repair she returned to her cruising duties, this time as the flagship of Admiral Sir John Hardy. There followed three years of channel service wherein nine or ten months at sea were followed by two or three months in dockyard hands for refits. This pattern of service and refits was standard throughout the fleet and was only broken in time of extreme danger (or opportunity). Service during this period was highlighted by the relief of Gibraltar and an engagement off Cape Spartel with the combined fleets of France and Spain. Admiral Lord Hood commanded the fleet during both these operations.

In November 1782 *Victory* was paid off at Portsmouth and between November 1782 and March 1783 she received her first major overhaul in seventeen years, a Middling Repair (at this time dockyard work was categorized as Small, Middling or Large Repairs, the latter often amounting to a complete rebuilding). She was then placed in reserve until November 1787, when she was brought forward and prepared for sea as a result of a political crisis that proved to be a false alarm. Navy officials surveyed her during this fitting out and it was decided that she should be given a Large Repair. This work was done at Portsmouth and was finished by April 1788; it included restepping her masts aft and structural renewal, as well as general maintenance. She was then placed in reserve.

Deteriorating relations with Spain caused *Victory* to be prepared for sea again and in 1789 she was fitted out for channel service and placed under the command of Lord Howe. In August 1790 Admiral Lord Hood took command of the fleet and in December 1792 *Victory* was transferred to the Mediterranean fleet as the flagship of Rear-Admiral Sir Hyde Parker. She was to remain, while on active service, in the Mediterranean until 1805.

Admiral Lord Hood again raised his flag aboard *Victory* on 6 May 1793, this time in command of the Mediterranean fleet. The occupation of Toulon resulted in France losing most of her fleet. The fleet also cooperated with the British army in capturing San Fiorenzo, and an amphibious operation ensured the capture of Bastia. On 13 July 1795 under the command of Rear-Admiral Robert Man *Victory* and the fleet fought the French in Hotham's action off the Isle of Hyères. Another change in command brought Admiral Sir John Jervis to *Victory* and on 3 December 1795 he took command; the fleet was moved to Gibraltar from December 1796. In the next year Jervis, with 16 British ships, encountered and engaged a fleet of 27 Spanish ships, and beat them most decisively. This engagement is known as the Battle of St Vincent, and was fought on 14 February 1797 and as a result of his victory, Jervis was created Earl of St Vincent. It also brought *Victory* to the public's attention for the first time.

Victory returned to Portsmouth the following autumn and in October she was surveyed and found to be structurally defective. She was sailed to Chatham, paid off and had her name struck from the Navy List. For a year she served as a hospital ship, but when in 1798 the Admiralty ordered *Victory* to be converted into a prison hulk, the Navy Board wisely and successfully argued against this proposal. From February 1800 to April 1803 *Victory* underwent a reconstruction that cost more than it took to launch her. This rebuild included a good deal of structural and hull work and the closing-in of her open stern galleries.

In May 1803 *Victory* again sailed for the Mediterranean, this time under the command of Admiral Lord Nelson, and again took up station blockading Toulon. The French fleet evaded Nelson and escaped from Toulon, and there followed a fruitless pursuit by the British fleet across the Atlantic to the West Indies and back, at the end of which *Victory* received a refit at Portsmouth. By September 1805 *Victory* was on station off Cadiz, blockading the combined fleets. On 21 October 1805 the famous Battle of Trafalgar was fought and due to Nelson's tactics, the British fleet won a most remarkable victory. *Victory* was

badly damaged in the battle and only returned to England the following December after temporary repairs at Gibraltar.

In January 1806 *Victory* was paid off at Chatham and from March to May was refitted. In May 1806 she was placed in Ordinary, where she remained until March 1808. In November 1807 she was rerated as a Second Rate and was refitted and rearmed to suit. In March 1808 she was assigned Baltic duty as flagship of Rear-Admiral Sir James Saumarez, where she remained, her service there being interrupted only by annual refits and two missions to the Spanish Peninsula: the evacuation of the British Army at Corunna in 1808, and the transporting of reinforcing troops for Wellington at the Tagus.

HMS *Victory* was paid off at Portsmouth on 28 November 1812, and after 34 years of service, her active career ended.

CAREER SUMMARY

13 December 1758: Ordered by Prime Minister Pitt (with 11 other ships)
6 June 1759: Date of Slade's sheer draught
7 July 1759: Navy Board directs officers of Chatham Dockyard to build 100-gun ship (still unnamed)
23 July 1759: Keel laid at Chatham
30 October 1760: Named *Victory* by order of Navy Office
7 May 1765: Floated (launched)
1765 to 1778: In Ordinary at Chatham. Prior to 1769 she was completed (final hull work, masts, yards, rigging and sails). Sea trials were conducted in 1769 and in the years 1771 and 1775 she was docked for repairs to her hull
February 1778 to April 1778: Fitting out for service, Chatham
12 March 1778: Commissioned
27 April 1778: Inspected by King George III
8 May 1778: Puts to sea with the Channel Fleet
23 July 1778: Engagement off Ushant
31 July 1778: Return to Plymouth for 3 weeks (refit)
August 1778: to March 1779: Channel service
April 1779: Refit, Portsmouth
March 1779 to March 1780: Channel service
March 1780: Refit (including copper sheathing to hull), Portsmouth
April 1780: to November 1782: Channel service including the relief of Gibraltar and an action off Cape Spartel
November 1782: Paid off at Portsmouth
November 1782 to March 1783: Middling Repair, Portsmouth
March 1783 to November 1787: In reserve, Portsmouth
December 1787 to April 1788: Large Repair, Portsmouth
April 1788 to 1789: In reserve, Portsmouth
1789: Fitting out for sea service, Portsmouth
1789 to August 1791: Channel service
February 1791: Repaired at Portsmouth
March 1791 to December 1792: Channel service
December 1792 to February 1793: Refit for Mediterranean, Portsmouth
February 1793: Prepared for Mediterranean service
June 1793 to November 1794: Mediterranean service including the reduction of the Toulon fleet and the capture of San Fiorenzo and Bastia
December 1794 to February 1795: Repairs at Portsmouth
March 1795 to November 1796: Mediterranean service; action off Hyères on 13 July 1795
December 1796 to October 1797: Stationed at Gibraltar; Battle of St Vincent on 14 February 1797
October 1797: Surveyed at Portsmouth and found defective, sent to Chatham and paid off. Name struck from Navy List
December 1797 to January 1799: Hospital ship
February 1800 to April 1803: Large reconstruction, Chatham
May 1803 to April 1805: Mediterranean service
May 1805 to August 1805: Pursuit of French fleet to the West Indies
August and September 1805: Refit, Portsmouth
September 1805 to October 1805: Cadiz blockade
21 October 1805: Battle of Trafalgar
28 October 1805: Arrives at Gibraltar for temporary repairs
15 January 1806: Paid off at Chatham
March 1806 to May 1806: Refit (recoppered), Chatham
May 1806 to March 1808: In Ordinary in the Medway. November 1807 down-graded to Second Rate, refit to suit at Chatham
April 1808 to November 1808: Baltic service
November 1808: Refit, Chatham
10 December 1808 to 23 January 1809: Evacuation of Corunna
February 1809 to December 1809: Baltic service
January 1810 to April 1810: Refit, Portsmouth
March 1810 to December 1810: Baltic service
December 1810 to January 1811: Converted to troop transport
February and March 1811: Transport of troops to the Tagus
April 1811: Refit (removal of troop transport equipment), Portsmouth
May 1811 to December 1811: Baltic service including amphibious actions
January and February 1812: Refit, Portsmouth
April 1812 to November 1812: Baltic service
28 November 1812: Paid off at Portsmouth – end of active service
1813 to 1823: In Ordinary at Portsmouth, including: March 1814 to January 1816 – large reconstruction; February 1817 – rerated as a First Rate, refit to suit at Portsmouth
June 1823 to January 1824: Guard ship
January 1824 to April 1830: Port Admiral's flagship
24 April 1830: Paid off and placed in Ordinary at Portsmouth
July 1830 to October 1831: Residence of the Captain of the Ordinary at Portsmouth.
October 1831 to August 1836: Flagship of the Port Admiral at Portsmouth
31 August 1836: Paid off and placed in Ordinary at Portsmouth
1837: Flagship of the Admiral Superintendent at Portsmouth
1840: Moored off Gosport
June 1847: Stationary flagship of Commander-in-Chief at Portsmouth
September 1857 to April 1858: Docked for repairs at Portsmouth
1869: Paid off as flagship at Portsmouth
1869 to 1891: Tender to *Duke of Wellington*
23 October 1903: Rammed by *Neptune*. Docked and repaired
11 to 14 January 1922: Docked at No 2 Dock, Portsmouth
20 March 1922: Admiralty decrees that *Victory* is to remain in No 2 Dock permanently; beginning of restoration to Trafalgar condition

DESIGN

Victory was designed by Sir Thomas Slade, (Surveyor of the Navy, 1755 to 1771) and was considered to be his masterpiece. She was built at a time when the detailed design of ships was being shifted from the Dockyard's master shipwright, who worked from very detailed specifications, to the Navy Board, or more precisely the Surveyors of the Navy. Although the term did not exist at

the time, Slade was one of the first 'Naval Architects' and in this capacity he excelled. He was the most conscientious and successful ship designer of his day.

Slade produced his draught of *Victory* in less than six months. The draught, dated 6 June 1759, was presented to the Admiralty on 15 June 1759, and the Navy Board formally ordered *Victory* to be built at Chatham on 7 July 1759. Slade's draught contained this outline specification:

Length on the gundeck *186 feet*
Length of the keel for tonnage *151 feet 3 5/8 inches*
Breadth moulded *50 feet 6 inches*
Breadth extreme *51 feet 10 inches*
To carry on the lower deck *30 guns of 42 pounds*
To carry on the middle deck *28 guns of 24 pounds*
To carry on the upper deck *30 guns of 12 pounds*
To carry on the after deck *10 guns of 6 pounds*
To carry on the forecastle *2 guns of 6 pounds*

The lines of the *Victory* were based on those of the *Royal George* of 1756, a ship considered to be of successful design. *Victory* was somewhat larger than *Royal George* (her gundeck was 8 ft longer, her breadth, 1 ft wider and she exceeded *Royal George* in berthen by 135 tons).

Building ships in the eighteenth century was not the exact science that it is today; much was left to the builder and very few detail drawings were prepared for him. Upon launch *Victory* drew some nine inches more water than expected. This must have been disappointing for Slade, for he had planned on 5ft 3 in between the lower gunport sills and the load waterline, an important consideration when fighting the ship in rough seas. *Victory* also required some 38 tons of extra ballast to the port side of her hold than the starboard. Ballasting was an important aspect of shipbuilding at this time and the trim of all ships was corrected in this way. Ballasting a ship reflected the rather human manner in which she was built: the port side did not exactly reflect the starboard.

The most endearing quality of *Victory*, to Slade's great credit, was that she was a good sailer. Large First and Second Rate ships had gained reputations as being hard to handle and slow to respond but *Victory* had no trouble keeping up with her smaller sisters and this feature made her popular as a flagship. In 1799, just before her first major rebuild, it was proposed that *Victory* be lengthened. This technique had been applied previously, usually to Third Rates, and resulted in armament being increased by 2 guns per deck (6 frames would be added amidships, accommodating an extra port). Fortunately this experiment was not tried on *Victory* – sailing qualities would have been compromised and premature hogging might have occurred due to her excessive length.

CONSTRUCTION

The first physical problem encountered in constructing a three-decked ship was finding dock space to build it in. Smaller ships were usually built on an inclined slipway and were launched by allowing them to slide into the water. Because of their size, First Rates were built in dry docks and, upon completion, were floated to launch. Docking space was limited and essential to the maintenance of existing vessels. A First Rate took some years to build, thus dry dock facilities would be strained. *Victory* was built in the old single dock at Chatham which had a temporary roof placed over it for this purpose. She was launched after six years and two months of work, at a total cost of £63,176.

Obtaining suitable material for hull construction (British Oak) was a perpetual problem for Navy constructors and there are reports of agents scouring the English countryside seeking usable trees (it is estimated that there are 300,000 cubic feet of timber in *Victory*, enough to build 400 single family houses). This timber was larger than normal for shipbuilding due to *Victory*'s size, and would therefore have been at a premium. The original timber used to build her was laid aside in 1746 to replace her predecessor that was lost in 1744. This timber had, therefore, twenty years to season, a process essential to allaying future deterioration (from dry or wet rot). *Victory*'s longevity is attributed to this long curing process.

In *Victory*'s day, ships were built all of wood that was fixed together by means of rather rudimentary fasteners. Iron, later copper, clench bolts were used to hold large members together. These bolts were not as we know bolts today – they were merely an iron rod, driven through a pre-drilled hole and 'riveted' over a washer at each end. Tree nails (oak dowels) and iron spikes were used to secure decking and planking.

The building of *Victory* began with the laying of her keel, which was of elm, 21in square amidships, and tapered in the athwartships direction as it neared the sternpost and stem. Specifications allowed for seven scarphs, not less than 5ft long, in a First Rate's keel. Fastened beneath the keel was first the false keel (to give depth), then the sole plate which was rounded as it rose up the stem, and fastened in such a way that it could shear off if the ship ran aground.

The next framing member to be installed was the sternpost. It was cut from one piece of oak and supported the rudder and the transoms, of which there were twelve. The transoms in turn supported the stern framing and an inner post was fayed to the fore side of the sternpost to help support the transoms. At the bow of the ship was the stem which was an arched extension of the keel and was formed by three members scarphed together: the stem, boxing and apron. The stem carried the beakhead and cutwater.

After finishing her keel the ship's frames, or ribs, were fitted. These were timbers that were curved as required to form the body of the ship. In the centre area of the vessel they were laid over the keel perpendicular to it and as the hull rounded fore and aft they radiated away from the centre so that they would more closely form the ship's lines. These radiating cant frames, as they were called, could not be laid across the keel, so deadwood was installed over the keel to which these cants were bolted. Frames, by necessity, were built up of relatively short sections of curved timbers called futtocks, which were scarphed together. The dimensions of each futtock and scarph was carefully specified, as were all framing members of the ship. Every third and fourth frames were paired and joined together, with their joining faces falling on a station line. For strength the scarphs were 'shifted' (*ie* joggled so that the joints in one frame did not coincide with the joints in the other). These frames ran continuously up the ship from keel to bulwark and it was the two frames between them that were cut out for ports. This gave strength to the ship's side and caused the guns to be distributed evenly. During construction the frames were held in place by ribbands, horizontal timbers applied to the exterior of the frames that would eventually determine the run of the planking. After all of the frames had been placed, plumbed and faired, they were shaved as required to the true form of the hull (they were deliberately cut slightly large for this purpose). To give support to the keel and secure the frames, a continuous timber was laid on top of the frames and deadwood. Known as the kelson (keelson), it was slightly smaller than, and bolted to, the keel, effectively clamping the frames in place. Forward it arched concentric to the inside of the apron and was known as the stemson. Aft it ended where the deadwood joined the inner post. It too was scarphed, its joints offset from those of the keel.

Outside planking was begun by placing the wales. These members were thicker than the planks and ran roughly adjacent to the decks to give strength to the ship fore and aft. The keel, stem and sternpost were rabbeted (*ie* rebated) to receive the planking and the plank closest to the keel was called the garboard strake; it was slightly thicker and wider than the balance of the planking. The planking was bevelled to form grooves that accommodated caulking.

The ship's inboard structure was installed simultaneously with her planking. The run of the decks would first be determined and a heavy ledge would be installed for each deck at the underside level of the beams. The beams sat upon this shelf. The major deck beams of *Victory* were so long that they had to be made up of two or three pieces of timber scarphed and bolted together. The beams were braced by hanging knees and chocks vertically and by lodging knees horizontally. *Victory*'s beams range in size from 16in square for the lower deck to 6in by 9in at the poop. At the stem deck clamps were fayed against the frames to support the deck and brace the bows. Finally, at the fore and main mast on the lower, middle and upper decks curved half beams were installed to give lateral support to the beams that secured the masts.

Carlings were tennoned into the beams in the fore and aft direction, and these in turn supported small carlings, called ledges, that lay athwartships, paralleling the beams. These ledges were spaced such that the decking of the gundeck did not span more than 12in.

Over this network of beams and carlings was laid the decking. It was 4in thick at the gundeck, 3in thick at the middle, upper and quarterdeck and 2½in thick at the poop and was bevelled and caulked. It was customary to run a king plank down the middle line of the deck, this plank being slightly wider than the others. At the sides of the ship a rounded waterway plank was installed. The orlop decking was arranged quite differently from the gun and weather decks – as it covered the hold it was installed so that it could easily be removed to give access to any particular area below. As there was no great weight upon this deck it was formed of 2in thick planks that were dadoed into the beams (unfixed). Carlings were set lower than the beams to accommodate the deck planking and beams were exposed as a result of this technique.

The interior of the ship between decks was lined to give added strength to the hull. Beginning at the waterway plank of the deck, it was composed of spirketing (three strakes of 6in thick plank that rose to the gunport sills) and inner lining (three strakes of 4in thick plank). A gap of 2in was left between the top of the lining and the bottom of the beam shelf to allow ventilation of the frames, and packing was installed between the beams where there were no lodging knees. The hold was lined with planking that varied in size. Thick rows of planking were laid adjacent to the keel, at the turn of the bilge and just under the orlop deck, with thinner planking running between them. A channel carrying seepage water was created along both sides of the kelson. This trough ran from stem to sternpost and was designed to direct water to the hold well. It was called the limber passage and was covered so that it would not become clogged. The first plank next to the limber (or waterway) passage was the limber strake and was most particularly dimensioned in specifications.

The last structural members to be installed in *Victory* were an additional set of strengtheners. Breast hooks were installed at her bows, transom knees and crutches at her stern, and riders were bolted into her amidships. These members were installed after internal planking.

ARRANGEMENT

The term 'three-decker' was applied to 100-gun ships because three full decks were devoted mainly to carrying guns. Below the lowest gundeck lay the hold which was used to store the ship's provisions and included the orlop deck (the depth of hold dimension is measured from the top of the upper deck beams to the top of the limber strake – in *Victory* it is 21 ft 6 in). This seeming paradox is easily explained: the orlop deck was used mainly for storage and since its decking was removable, it provided a convenient means of separating stored goods as well as providing a base for the few cabins found there. An interesting feature of the orlop deck is the carpenter's walk. These were narrow passages along the sides of the ship at the fore and aft ends that were installed so that no stores could be placed against the hull. Damage by enemy shot at the waterline was particularly dangerous and the carpenter's crews would need instant access to these areas in case of emergency. The cable tiers, a section of the orlop where anchor cables were stored, had a similar bulkhead arrangement; the bulkhead in this case was of timbers arranged perpendicular to one another, giving a lattice effect. This open design was used so that wet cables would air and dry and 2in thick battens were laid upon the deck for the same purpose. The orlop deck provided access to the hold magazines and light rooms by means of passages that could easily be guarded by Marines. Hanging magazines, storage rooms for sails, trades supplies, food, and officers' private stores, as well as accommodation for some officers, was also found here.

The hold proper was partitioned off to segregate some foods from others and to provide security to two powder storage rooms. Other rooms included the bread and flour rooms, fish room and spirit room. Platforms to assist in storage were fixed to the ship's sides and shot lockers were placed against the hold well.

When fully provisioned, *Victory's* hold would contain:

Water – 300 tons	Pease – 15 tons
Fuel (coal and wood) – 50 tons	Butter – 2 tons
Timber – 20 tons	Beer – 50 tons
Salt meat – 30 tons	Powder – 35 tons
Biscuits – 45 tons	Shot – 120 tons
Flour – 10 tons	

Most of these provisions were stored in wooden barrels that were 4½ft long and 3ft in diameter and were, at best, awkward to handle; and care had to be taken in storage to allow relatively free access. Under all of these stores lay the ship's ballast.

The lower deck, or gundeck, of *Victory* was the strongest of her decks. It was designed to carry thirty 42-pounder guns, a total of 100 tons, and it was left free of fixtures along the ship's side so that the guns could be worked. Companionways and hatches were installed along the middle line as well as capstans, pumps and riding bitts. Right forward, just aft of the hawse holes, a section of the deck was boarded off to contain the water and mess of the anchor cables as they were brought inboard. This area was known as the manger as it was also used, on occasion, to pen live animals.

The middle and upper decks, too, were principally gundecks, but unlike the lower deck, removable bulkheads were fitted aft to create cabins for officers. Senior officers were berthed on the middle deck and the Admiral's cabins took up almost one-third of the upper deck. Companionways and hatches were fitted along the middle line of both of these decks, and capstans, galley and stove as well as the sick bay were located on the lower deck.

The quarterdeck was a lightly armed deck carrying only twelve guns. Aftermost were the captain's cabins as well as a cabin for his secretary and a working office for the ship's master. Here again the bulkheads were removable. Forward of the mizzen mast, at the break of the poop, was the ship's

wheel and binnacle, and forward of them was the main companionway. As originally built, *Victory* had a skylight over the admiral's cabins that was located forward of the wheel, but Nelson had it removed to give more room to work the quarterdeck guns. The waist of the ship was left open save for narrow gangboards along each side and was reserved for the storing of boats and spare spars across athwartship beams. The forecastle too was lightly armed and its main purpose was to provide a platform to work the many running rigging lines from the bowsprit, fore, and main masts that were secured there. The belfry, galley stove chimney and hatches were arranged along its middle line.

The poop was not designed to carry ordnance and as such was of very light construction. Bitts for the mizzen mast, a skylight to the captains's cabin, and flag lockers were placed here.

Moving outboard, the salient feature of *Victory's* bows is the beakhead. This built-up timber 'cutwater' supported her cheeks, between which were worked the hawse holes, her rails, which in turn supported the cathead and beakhead platform, and her bowsprit. The figurehead and scroll were also located here. Gunports were arranged along the whole of the ship's side, alternating between full frames at each station. Horizontally the ports sit roughly between the wales. On the middle deck, adjacent to the main mast, a gunport is given over to form an entry port with its carved roof. The ship's side ladder is here, and ahead of it are the fenders, which were originally used to slide barrels up the ship's side, but by the time of *Victory* they had become obsolete. A timber called the chesstree containing a sheave for the main sail tacks was bolted to the hull just forward of port number five on the upper deck and ahead of that was a sheave to bring this line inboard. A similar sheave was fitted forward of the fenders for the fore main sheets. Channels, chains and deadeyes followed the ship's plank lines at roughly the quarterdeck level and were fitted just aft of their respective masts. Hammock netting formed the rails of the weather decks and davits for the sea boats were located among the mizzen shrouds. Finally, the stern was graced by ornately carved, windowed quarter galleries.

REPAIRS, REFITS AND REBUILDS

Wooden warships required a good deal of maintenance to keep them on station. Some of this work could be carried out at sea by their crews, who were very skilled at repair and improvisation, and a supply of timber, rope, and canvas was carried, as well as spare spars, in case of emergency. However, regular dockings were required for hull work, particularly below the waterline, and any structural renewal.

General maintenance included cleaning bottoms, renewal of copper, re-caulking, painting, and replacing rigging. Repairs were classified as Small, Middling, or Large and since it was difficult to ascertain the extent of work required to a ship's hull until it was opened up, cost estimates were usually low upon first survey and tended to grow as work progressed. Total rebuilds were not uncommon, especially among the very large ships, and *Victory* underwent two reconstructions that cost more than her hull at first launching.

DECORATION

Over the years the decoration on his Majesty's warships grew more and more austere. During the seventeenth century the ships' bows, sterns and rails were covered with carved work. There were carved wreaths around the upper gunports, decoration to the cabins inboard, and even the knightsheads and bitts were sculpted. All of this Baroque decoration accounted for as much as ten per cent of the ship's budget. By 1765 ship decoration was confined to the bows and stern and in *Victory*'s case was further reduced in 1803.

TABLE 3: SUMMARY OF REPAIRS, REFITS AND REBUILDS

1765 to 1769: Fitted out for sea trials – masts/yards/rigging and sails
1771: Repairs to planking below waterline
1775: Repairs to planking below waterline
Feb to Apr 1778: Fitted out as flagship. Grand Fleet – masts, yards rigging and sails/guns changed/ship's name removed from stern/general maintenance/minor changes
Aug 1778: Minor repairs due to action damage – masts, yards and rigging
Apr 1779: Refit after one year at sea – general maintenance/minor changes/name replaced on stern/guns
Mar 1780: Refit after one year at sea – general maintenance/minor changes/bottom coppered/guns
Nov 1782 to Mar 1783: Repairs due to action damage – fore yard/hull/sails. Refit after two years at sea – general maintenance/minor changes/hull painted/guns
Dec 1787 to Apr 1788: Large Recair – masts restepped aft/structural work/minor changes/sheathing repaired/rigging/waist made flush/galley stove/interior paint/guns
1789: Fitted out for sea service after two years in reserve
Feb 1791: Repairs to defects
Dec 1792 to Feb 1793: Refit as flagship, Mediterranean Fleet – hull/masts, yards and rigging
Dec 1794 to Feb 1795: Repairs and refit after three years of service – general maintenance/repairs/renewals/fitted with flying jibboom/minor changes
July 1795: Temporary recairs at sea due to action damage – masts, yards, rigging and sails
Dec 1797: Temporary repairs at sea due to action damage – yards, masts, rigging and sails
Oct 1797: Surveyed and found structurally defective
Dec 1797: Fitted out as a hospital ship
Feb 1800 to Apr 1803: Middling Repair grows to Large Rebuild – hull/structure/stern closed/channels raised/bulwarks/ports and port lids/masts, yards and rigging/anchor cables/minor changes/bulkheads/new figurehead/interior paint/boats/guns
Aug 1805: Refit after 18 months at sea – general maintenance/guns
Oct 1805: Temporary repairs at sea due to action damage – hull, masts, yards, rigging and sails
Mar 1806 to May 1806: Repairs due to action damage and refit – hull/masts, yards, rigging and sails/bottom recoppered/guns
Mar 1807: Emergency repair – hull/copper sheathing/caulking
Nov 1807: Refit as Second Rate – masts, yards, rigging and sails/guns
Nov 1808: Refit after one year at sea – general maintenance
Jan and Feb 1810: Refit – general maintenance
Dec 1810 to Feb 1811: Refit – general maintenance; fitted out as a troop transport
Apr 1811: Refit – troop transport equipment removed
Jan and Feb 1812: Refit – general maintenance
End of sea service
1813: Survey indicated that a Small Repair was required
Feb 1814: Survey indicated that a Middling Repair was required
Mar 1814 to Jan 1816: Large Rebuild – hull/round bows/steps of mizzen mast/minor changes/bulkheads/hull painting
1817: Reratec as First Rate
1823: Refit as guarc ship
1824: Refit to Port Admiral's flagship
1830: Refit to residence of the Captain of the Ordinary
1831: Refit to flagship of the Port Admiral
1837: Refit to flagship of the Admiral Superintendent
1847: Refit to stationary flagship of the Commander-in-Chief
1857: Repairs to hull/caulking/copper sheathing
1869: Refit as tender to *Duke of Wellington*
1887: Emergency repairs to hull
1903: Emergency repairs to hull
December 1921: Beginning of restoration and preservation

The figurehead as fitted to *Victory* in 1765 was very ornate and complex in design and a specification dated 12 June 1763 for it, and all of *Victory*'s carved work, is on record. The figurehead was carved from elm at an estimated cost of £190 and the specifications call for a 'clay model' costing £20. The amount allocated for all of her carved work, including models, was £415. At *Victory*'s rebuild in 1803, the original figurehead was replaced by a simpler one (costing £50) and in 1815 this was replaced with her present head. The 1815 figurehead is similar to the one of 1803 and consists of the Royal Arms on an oval shield with scrolls and mottoes and two cherubs.

The stern also underwent a major change during this 1803 refit. At the time

TABLE 4: NATURE AND COSTS OF REPAIRS, REFITS, AND RECONSTRUCTIONS

Date	Dockyard	Nature of Work	Duration of Work	Cost of Work (£)
1771	Chatham	Repair	6 months	4276
1775	Chatham	Repair	6 months	3075
Feb 1778 – Apr 1778	Chatham	Fitting out	3 months	13,299
Aug 1778	Plymouth	Repair	3 weeks	
Apr 1779	Portsmouth	Refit		830*
Mar 1780	Portsmouth	Refit		8941
Nov 1782 – Mar 1783	Portsmouth	Repair & refit	6 months	15,372
Dec 1787 – Apr 1788	Portsmouth	Large Repair	5 months	37,523*
1789	Portsmouth	Fitting out		6451
Feb 1791	Portsmouth	Repair		3376
Dec 1792 – Feb 1793	Portsmouth	Refit	3 months	8177
Dec 1794 – Feb 1795	Portsmouth	Repair	3 months	13,154
Dec 1797	Chatham	Fitted out as hospital ship		
Feb 1800 – Apr 1803	Chatham	Large Rebuild	39 months	70,933
Aug 1805	Portsmouth	Refit	3 weeks	
Mar 1806 – May 1806	Chatham	Repair & refit	2 months	9936
Mar 1807	Chatham	Repair	1 month	
Nov 1807	Chatham	Refit to Second Rate		
Nov 1808	Chatham	Refit	1 month	
Jan 1810 – Feb 1810	Portsmouth	Refit	2 months	
Dec 1810 – Mar 1811	Portsmouth	Refit to troop transport equipment	1 month	
Apr 1811	Portsmouth	Removal of troop transport equipment		
Jun 1812 – Feb 1813	Portsmouth	Refit	2 months	23,791 (March 1806 February 1812)
End of sea career (a total of £226,002 had been spent on dockyard work)				
Mar 1814 – Jan 1816	Portsmouth	Large Rebuild	23 months	79,772*

Note: The above table does not show minor maintenance (recaulking, painting, etc) required while in Ordinary, nor does it indicate maintenance and repair work done at sea by *Victory*'s crew.

The cost of building *Victory* (up to launch) was £63,176.

of *Victory*'s launch, it was customary to cantilever the upper and quarterdecks aft to create a balcony for the admiral and captain. This balcony was railed and a bulkhead was worked athwartships to give these galleries five feet of width. In 1803 the galleries were removed and the whole of the stern was glazed in. This modification gave more space to the cabins and, more importantly, it strengthened the stern as continuous vertical members could be worked from the transom to the rail. Carved false ballusters were placed upon the counters between the rows of windows, and surrounding all of this were carved brackets, figures and scrolls. A carved trophy of arms sits under the taffrail, its Prince of Wales feathers having been salvaged from HMS *Prince*, a Trafalgar veteran. The windows and carved work of the quarter galleries reflect those of the stern.

The ship's belfry is an ornate fitting as is the entry port canopy. The canopy and its support brackets are carved in relief, the motif being oak leaf scrolls.

Prior to 1815, painting the hulls of ships was pretty much determined by the whim and resources of her commander. At Trafalgar, *Victory*'s hull was black with three continuous streaks of bright yellow running roughly between her wales. Her gunports were painted red inside, as were the insides of the gunport lids.

STEERING GEAR

Victory's steering gear was, by design, very simple so that it could be easily maintained. Two wheels with carved spokes were mounted on each end of a drum whose axle was supported by two pillars. A rope was turned nine times around this drum and led down through the quarter- and upper decks to sheaves set in the middle deck framing. These sheaves were set at 45-degree angles such that the tiller ropes were directed to the ship's sides where another sheave directed them to the tiller. Under the middle deck, between the side sheaves, a curved wooden tiller sweep was fixed and the ropes passed along its fore face on a shelf and rollers to the fore end of the tiller. From there the ropes lead aft along the tiller and were fixed by means of adjusting tackles. Depending upon the wind and seas, four to eight men manned the wheel. Since the tiller rope moved fore and aft along the barrel, slots were cut into the quarterdeck to accommodate this shifting, the slots being fitted with sliding covers to minimize leakage.

The tiller is 29ft long 11in square and is equipped with iron fittings as required to accommodate its ropes. It is fitted with a goose-neck bracket, forward and on top, to hold it to the sweep. The rudder head is tennoned just under the middle deck framing, to receive the tiller and is strengthened with iron bands.

Because of its size the rudder is built up of four timbers bolted together. Like the keel it tapers aft and downward so that its sides parallel the sternpost. It was coppered up to the waterline and hung from the sternpost by hinges formed by pintles and gudgeons.

Alternate systems of controlling the rudder could be employed if maintenance was required or if parts of the steering apparatus were destroyed. The ship could be steered by men pushing on the tiller (forty people were required for this), if the wheel or ropes were damaged. If the main tiller was shot away, a temporary tiller could be inserted into the head of the rudder in the wardroom and worked by hand; the rudder projected above the middle deck for this purpose. Finally, if all else failed, the rudder could be swung by means of chains that were shackled to either side of the spectacle plate, brought round the stern and up the ship's side. Ropes were secured to the chains and to hand-operated tackles on the quarterdeck.

GROUND TACKLE

The size, number, and types of anchors carried by ships of the Royal Navy varied. Standardization was eventually achieved and at her refit of 1803 *Victory* carried seven anchors:

2 Bowers of 84 cwt. (9408 pounds)
2 Sheets of 84 cwt. (9408 pounds)
1 Stream of 21 cwt. (2352 pounds)
1 Kedge of 10 ½ cwt. (1176 pounds)
1 Kedge of 5 cwt. (560 pounds)

The bower, sheets and stream anchors were all of iron, save for their stocks, which were formed by two pieces of oak clamped over the shank and held together by iron bands (weights given do not include wood stocks). Kedge anchors had single pivoting iron stocks to save space.

The main anchors were the bowers, and as such were always ready for use, their cables always being attached. They were stored forward, with their shanks lashed to the cathead, whose tackle was used to hoist them above the hawse holes, and their flukes were lashed under the fore channel. Sheet anchors were the same size as bowers and were used as spares. They were lashed to the top of the fore channel, outside of the shrouds.

Stream and kedge anchors were smaller; they could be handled by the ship's boats, and were used for light work. Stream anchors were small versions of bowers and were lashed to the sheet anchors. The kedge was stored on the starboard mizzen channel.

Victory carried seven anchor cables of 24 in circumference, two of which were spliced to the bower anchor rings port and starboard, ran inboard through their respective hawse holes, over the riding bits and were coiled on the orlop cable tiers, passing below by way of the main hatch. The bitts were double and, as they acted as a fixing point for the cables, were massive. Their supports terminated in the hold and they were secured to the lower and orlop deck beams. In the corners of the main hatch iron knees are fitted to prevent the cables from chafing the coamings and to act as backing for the compressor, an L-shaped cable-stopper device.

Victory is fitted with four capstans, arranged in pairs, such that they could be worked in tandem. The lower sat upon the lower deck, the upper ones sat upon the middle deck. The bodies of the capstans were built up of wood with iron fittings to give strength where required. Four large iron pawls are fitted at the ratchet and were reversible so that the capstans could revolve in either direction. The capstans were turned by men pushing on bars that were inserted into slots in the drumheads and on the main capstan 260 men could be employed to exert 10 tons of force. Although both pairs of capstans were used for different tasks, the main capstan aft was employed in raising the anchors.

As the anchor cable was too heavy to wrap around a capstan, a continuous 15 in rope, or 'messenger', was fitted when required. Beginning aft the messenger was wrapped four times around the capstan and travelled forward to a roller just abaft the hawse holes. It returned to the capstan around a similar roller on the opposite side of the ship, and was guided and kept clear of the deck by the bitts forward and roller fairleads just aft of the main pumps. The anchor cable was tied (or nipped) to the messenger and as it travelled aft was untied before it descended into the main hatch. The capstan would be turned clockwise to raise a starboard anchor and anti-clockwise to raise the one portside. Pillars adjacent to the capstans were removable and were unshipped as needed to make way for the capstan bars.

PUMPS

Victory was equipped with two types of pumps. Elm tree pumps (whose discharge heads were located on the lower deck starboard and the upper deck portside, adjacent to the main mast) consisted of a tube of elm wood that projected through the bottom of the ship. A piston operated by a hand lever at the top drew sea water upward that had filled the tube. Elm tree pumps had a low capacity, some 25 gallons per minute, but as they delivered water under pressure, they were used for fire fighting and cleaning.

Victory's main, or chain, pumps were used solely for pumping seepage water from her bilges. Any sea water that entered the ship was directed to the pump well via the limber passage, where it was collected in cisterns. The pump mechanism consisted of an endless chain that travelled around a sprocket in the lower cistern and a larger sprocket at the pump head, to which hand cranks were fitted. Leather discs were fitted every three feet along the chain and, as the chain ran inside a tube, water was lifted from the lower cistern by the discs as the pump was cranked. This water spilled into tanks at the head and from there it was directed to the scuppers by means of dales (removable tubes) or simply allowing it to spill onto the deck. *Victory* is fitted with four bilge pumps, located on the lower deck, two each side of the main mast. As they were in line on each side, they could be worked in tandem and their crank handles could be extended as required to employ a large gang of men. Despite the fact that these pumps were very inefficient, it is estimated that all four could lift 120 tons of water an hour.

Table 5: **VICTORY'S BOATS 1803**

	Length	Breadth	Built	Oars
Launch	34ft 0in	9ft 10in	Carvel	16 (could be double-banked)
Barge	32ft 0in	7ft 6in	Carvel	14
Pinnace	28ft 0in	6ft 4in	Carvel	8
Cutter	18ft 0in	6ft 6½in	Clinker	4

BOATS

The number and type of ship's boats carried on all classes of ships varied over the years, and boats supplied to a ship were determined by availability and the whim of a ship's commanding officer. In 1803 *Victory* carried four boats on the booms as detailed in Table 5.

These boats sat in cradles on, and were lashed to, her skid beams. Previously, the largest boats had been towed astern of the ship but this arrangement, although it facilitated quick use of the boats, was far from ideal as many boats were lost due to storms. The boats upon the booms were launched by rigging tackles from above, and all, save for the pinnace, were equipped with sails.

The different types of boats performed different tasks. The launch, being the largest, was used for heavy work such as transporting stores and water, and handling anchors, for which purpose it was fitted with a windlass. These boats were large enough to transport the ship's cannon. The pinnace was used mainly to convey senior officers and the barge was reserved for the admiral. Pinnaces and barges were often decorated. The cutter, or jolly boat, being the smallest and quickest to launch, was used in emergencies. All of these boats were used in amphibious actions, and as they were usually hoisted overboard before the ship went into action, they could be used to convey messages if flag signals could not be read.

Thirty or thirty-five foot sea cutters – the size of these boats has not been conclusively established – were lashed above the mizzen channels of *Victory*, port and starboard. These boats were launched by means of a pair of davits each, whose tackle was fixed to the mizzen mast. Equipped with sails they were very seaworthy, could be launched quickly and were employed in rescue work.

SHEATHING

For many years the Royal Navy searched for a means of preventing marine borers from infesting ship hulls (the Gribbles – *Limnoria* – in northern waters, and the ship worm – *Teredo* – in tropical waters) and many unsuccessful techniques were tested. Double planking with a layer of horse hair and tar between inner and outer layers of plank was only partially successful. Lead and copper sheathing failed as iron nails were used as fasteners and galvanic action corroded them causing the sheets to drop off. Many types of anti-fouling paint were used whose main deterrent to marine growth was lead, but these too provided only a limited solution.

In 1761 the frigate *Alarm* was sheathed with copper as an experiment and sent on a mission to the West Indies. Her examination upon return resulted in a favourable report being sent to the Admiralty in 1763, the important lesson being to use copper nails instead of iron. The experiment with *Alarm* not only showed that copper sheathing stopped the Teredo boring, but also that it

hindered the growth of plant and animal life that would foul a ship's bottom and reduce her speed by as much as 2kts. It was also found that sheathing reduced hull friction and generally improved the water-tight integrity of the ship.

Deterioration of fittings on and in the ship's hull, due to galvanic action between copper and iron, was the only drawback to this sheathing technique. Iron pintles and gudgeons were replaced by bronze and a layer of tarred paper was applied to the hull prior to coppering. This papering process was only a quick, temporary answer to the problem of galvanic deterioration and eventually iron bolts were replaced by copper.

In 1778, under pressure of war, the Admiralty decided to copper all of the fleet and in 1780 (7 to 14 March) during a refit, *Victory* was sheathed. She would have undoubtedly been recoppered during Large Refits. The copper sheets employed were 48in by 14in, of 28 and 32 ounces and weighed around 8 pounds.

CREW AND ACCOMMODATION

A ship of *Victory*'s size carried a nominal crew of 850 in times of war and might be reduced to 650 in time of peace. The actual size of a ship's crew depended upon availability of men and most ships carried less than their quota, particularly in wartime. When *Victory* was reduced to a Second Rate in 1807, her complement was reduced to 738. At the Battle of Trafalgar, *Victory* had a total of 819 men aboard (officers, seamen, marines and servants), the officers being given in Table 6.

Most of the lower deck was allocated to the crew. They slept here in hammocks slung from the deck beams above, and ate here upon removable tables, likewise slung between the guns. Upon joining a ship a man was issued a hammock, and was allotted fourteen inches of space in which to hang it. Petty officers were allotted slightly more space and slept near the sides. When not in use hammocks were rolled up and bound, and stored in netting on the weather deck rails, where they provided extra protection against small arms fire in action. Any hot food served was prepared in the ship's galley, located on the middle deck forward. A patented iron stove, the 'Brodie' stove, is located here, and was used to cook food for some of the officers and all of the men. The stove was fired by coal or wood and it consisted of a fire box, oven, and two boilers. A spit and a water condenser were also fitted to the stove, and its chimney passed through the upper deck to the forecastle where it could be rotated to suit wind conditions. The sick bay was situated ahead of the galley, in the bows of the middle deck and was presumably kept warm by the stove. The partition of the sick bay was a canvas screen. Toilet facilities for *Victory*'s crew were minimal: officers had facilities in the quarter galleries, petty offficers used stools located in the roundhouses, forward on the upper deck; and six stools were installed on the beakhead platform for everyone else. All of these facilities discharged directly into the sea.

Traditionally, officers' quarters were located aft and in the case of a three-decked ship the admiral's cabins were at the stern of the upper deck. This accommodation was formed by removable wood partitions, and consisted of a day cabin, dining cabin and sleeping cabin as well as an office for the admiral's clerical staff. Nelson's dining cabin contains a narrow companionway leading to the quarterdeck above. The captain's cabins are similar, comprising day, dining and sleeping cabins, though they are somewhat smaller, and are located on the quarterdeck. Forward of the captain's accommodations, adjacent to the steering wheel are the coach houses – a working cabin for the ship's master to port, and a cabin for the captian's secretary to starboard.

Table 6: **OFFICERS ABOARD VICTORY, 21 OCTOBER, 1805**

Vice-Admiral	1	Gunner	1
Captain	1	Purser	1
Lieutenants	9	Agent Victualler	1
Master	1	Agent Victualler's Clerk	1
Chaplain	-	Surgeon	1
Master's Mates	7	Assistant Surgeon	1
Midshipmen	22	Surgeon s Mate	1
Admiral's Secretary	1	Captain of Marines	1
Captain's Secretary	1	Lieutenants of Marines	2
Secretary's Clerk	1	Second Lieutenant of Marines	1
Boatswain	1		

Senior officers' quarters are located aft on the middle deck. These quarters consist of seven private cabins, a pantry and a wardroom that was used for dining and recreation. All senior officers were allowed the use of the wardroom, but not all were berthed in the cabins there. In earlier times wardroom bulkheads were merely canvas screens, but aboard *Victory* louvred partitions, similar to the ones of the cabins above, are fitted. Private toilet facilities were fitted in the quarter galleries of all three decks where stern cabins are located and all of these areas are well lit and ventilated by *Victory*'s stern galleries and by glazed sash ports. Senior officers had private pantries and portable stoves were used to prepare food, as well as heat their quarters.

At the extreme aft end of the lower deck, canvas partitions were fitted port and starboard to form berths for the master gunner and his assistants. These cabins were, by necessity, small so as not to interfere with the sweep of the tiller. Forward on the orlop deck adjacent to their respective storage rooms were the carpenter's and boatswain's cabins. In earlier periods these cabins were located on the middle deck opposite the galley stove, and a move to an unventilated and unheated area must have been unwelcome by the occupants. Aft on the orlop deck some small cabins were fitted, their bulkheads being built of wood and permanently fixed. Starboard was the lieutenants' and captain's storerooms as well as the surgeons cabin and dispensary; the steward's cabin, marines' storeroom and purser's cabin and storeroom were located on the portside. Finally, the midshipmen's berth was located in the cockpit and was defined by canvas screens. As this area was below the waterline and relatively well protected, the midshipman's berth was used as an operating theatre by the surgeon in times of action.

MASTS AND YARDS

Victory is, by proper definition, a 'three-masted ship'. This means that she is fully square rigged throughout. Her three masts are, in construction, virtually identical and vary only in dimensions. Each mast is composed of three major components: the lower mast; the topmast; and the topgallant mast, which includes the royal or pole mast. Masts were fashioned from fir (for its flexibility), which was obtained from the Baltic and North America.

As *Victory*'s lower masts were of large dimensions (three-foot diameter for the main and fore masts, and two-foot diameter for the mizzen) they were built up as required and scarphed together. Built-up masts were originally wolded to help hold their components together – binding rope was clinched around them at about three-foot intervals, from tenon to hounds. At her refit of 1803, *Victory*'s rope woldings were replaced with maintenance-free iron bands. Lower masts were secured at their lowest extremity by tenonning them into large blocks of wood, the steps, that straddled the kelson. At the deck levels,

the lower masts were braced by beams and carlings with wedges driven around them. Shaped half beams gave further lateral support to the fore and main masts at the lower, middle and upper deck levels. Topside they were braced by the standing rigging.

Topmasts were connected to lower masts by overlapping the mast and providing two connection points. Trestletrees and crosstrees were installed at the widened hounds of the lower mast and the butt of the topmast fitted into these and was further supported by the fid. The forward cantilever of the trestletrees was supported by the lower mast bibbs, and the trees were planked over (in fir, to save top-weight) to provide fighting tops. A block of wood, tenoned to receive the top of the lower mast and the shaft of the upper mast, was fitted at a prescribed distance above the trees and its forward cantilever was supported by a pillar.

The connection of topmast to topgallant mast was similar to that of lower to topmast, except that hounds, bibbs and pillars were not employed and the trees were not planked over. The pole mast, though given a distinct name, was an extension of the topgallant mast, as they were fashioned from one piece of timber. Both top- and topgallant masts were hoisted up by means of sheaves fitted at their lower ends.

The bowsprit, like the lower masts, was made up and banded, and was extended by the jibboom, its overlap being fastened by a cap. The flying jibboom, fitted to *Victory* in 1795, was supported by the cap and an iron fitting at the end of the jibboom.

Victory's yards derive their names from the masts that carry them, being lower, top and topgallant for each mast. Yards, like masts, were made of fir and, if required, were made up and banded. They were of eight or sixteen sides in their middle sections and rounded outward. All of the yards were equipped with stops and cleats to accommodate their rigging for hoisting and staying, and the fore and main mast yards were equipped with iron fittings to carry studding sails. Studding sails, or stunsails, were removable extensions of a ship's usual complement of sails and were employed only under the most favourable conditions.

As originally fitted, *Victory*'s mizzen mast was lateen rigged; its lower yard was set diagonally and carried a triangular sail. Around 1797 her lateen was removed and replaced by a horizontal spar known as the cross-jack yard. To compensate for the staying qualities of her lateen, she was fitted with a spanker carried by gaff and boom.

A ship's masts and yards were very vulnerable to damage due to weather and enemy action. *Victory*, therefore, carried spare spars upon the booms alongside the boats.

STANDING RIGGING

Standing rigging, as its name implies, did not move: its primary function was to support the masts and bowsprit and some of its members were very large. Hearts and deadeyes were used to secure this rigging to the ship's hull. These blocks of wood, usually *lignum vitae*, worked in pairs, the lower one being fixed to the hull, the upper one to its respective line by wrapping the line around it and lashing it securely. Lanyards were passed through holes in the blocks, three holes in the case of deadeyes, to form a connection as well as provide a tensioning device as the rigging was prone to stretching. Standing rigging was often wormed, parcelled and served: that is, wrapped in canvas and bound round with smaller rope to prevent chafing. As the hemp rope used for rigging was subject to deterioration it was often preserved with tar.

Victory's bowsprit was secured to her beakhead by means of a pair of lashings called gammoning. Slotted holes were provided in the beakhead and the gammoning was passed over the bowsprit and through the holes. The bowsprit was further anchored by shrouds and bobstays and the jibboom and flying jibboom by lashings, guys and stays.

Lower masts were secured from aft and side forces by the shrouds. These cables were worked in pairs and were looped around the masthead, over the trees. At the deck level, channels were fitted to spread the shrouds, to provide a broad base of support. Deadeyes secured the shrouds here, the lower deadeyes being chained downward to the ship's hull. Futtock shrouds were rigged from the underside edge of the mast top to the mast at about one-third the length of the shrouds downward. These anchored the lower deadeyes of topmast shrouds above and catharpins were worked athwartships here to prevent the lower shrouds from spreading. Sailors went aloft by means of ratlines worked across the shrouds, forming a kind of vast rope ladder.

The topmast shroud arrangement is similar to that of the lower mast; it employs fewer and lighter members, whose base is the top. Shrouds without ratlines secured the topgallant masts.

Backstays functioned in a similar way to shrouds except that they were worked from the channel to points above the lower masthead. They were the standing and shifting backstays, secured at the head of the topmast, standing backstays to the hounds of the topgallant mast and royal backstays to the truck of the pole mast. All the backstays were secured by the usual deadeyes, save for the shifting backstay, which was tensioned by blocks, and, as its name implies, could be moved as required.

Stays fitted fore and aft on the centreline braced the masts from forward. The main stay, of 19in cable, is looped around the main mast head and is secured to the beakhead by means of two hearts and a lanyard. The fore stay is similar and is secured to the outer end of the bowsprit. As the lower stays were very important, and vulnerable to enemy fire, a second stay, the preventer stay, was fitted. The preventer stays are smaller than their respective lower stays and are connected to them by snaking. The lower mizzen stay is secured to the deck at the foot of the main mast by tackle, as is the mizzen preventer stay. Finally, stays to the topmast heads, topgallant hounds and pole mast truck led forward, and in the case of the fore mast were lead through tackle on the bowsprit and then brought aft to the forecastle. The uppermost stays of the main and mizzen masts ran through blocks secured to the masts ahead of them and were brought down to the deck. Blocks and tackle were used to secure these stays.

RUNNING RIGGING

The purpose of running rigging was to hoist and control yards and sails, and therefore it was planned so that it could be shifted conveniently. This was achieved by leading as many of the rigging lines as possible from above to the decks below, by means of blocks that not only redirected the lines but also gave extra purchase to them.

Lower yards were hoisted up by jeer falls and held under the tops by slings, while truss pendants held them against the mast. The top and topgallant yards, as they were smaller, were raised and secured by tyes and held to the mast by parrels. All of these yards were held vertically by lifts and horizontally by braces which ran through blocks at the yardarms. Horses were slung under the yards to give a foothold to the men working the sails.

The lower corners of the sails were controlled by sheets aft and tacks forward. The sails were raised to the yards by buntlines and slablines, fixed to the lower edge of the sail, and by cluelines at the corners. The outer tricing

TABLE 7: **SIZE OF BOLT ROPES FOR A 100-GUN SHIP (FROM TABLES OF ABOUT 1785)**

Sails	Bolt rope (inches)	Head rope (inches)
Main courses	6	2½
Fore courses	5½	2¼
Main topsail	5¼	2½
leeches	5	—
Fore topsail	5¼	2
leeches	4½	—
Mizzen courses	4½	1¾
leeches	3½	—
Mizzen topsail	3½	1½
leeches	2¾	—
Spritsail course	3¼	1¼
Spritsail topsail, fore and main topgallant sails	2¾	1½
Main and fore staysails	3¼	—
Fore top staysails	2¾	—
Main top staysails	2	3½
Middle staysails	1¾	3
Mizzen staysails	3¼	—
Main topgallant and mizzen top staysail	1¼	2¾
Main fore and top studding sails	2¼	1¼
Topgallant studding sails and mizzen topgallant sails	2	1¼
Flying jibs	1¾	3½
Driver	2¼	1½

TABLE 8: **DIMENSIONS OF SAILS FOR A 100-GUN SHIP (FROM TABLES OF ABOUT 1785)**

Sails	No of sails	Head cloths	Foot cloths	Yards deep	No of canvas	Quantity of canvas
Headsails						
Flying jibs	2	—	27	26	6	736
Spritsail course	1	31	31	9¼	2	300½
Topsail	1	20½	31	10½	6	270
Fore sails						
Fore course	2	42	40	12½	1	1148
Middle band	—	—	—	—	5	50
Topsail	2	26½	43	19	2	1496
Linings	—	—	—	—	5	115
Middle band	—	—	—	—	5	45
Topgallant sail	2	20	27	9½	6	446½
Royal	1	12	20	7	7	112
Main sails						
Main course	2	48	50	14¼	1	1631
Middle band	—	—	—	—	5	61
Topsails	2	30½	48½	21	2	1858
Linings	—	—	—	—	5	138⅜
Middle band	2	—	—	—	5	51
Topgallant sail	1	23	31	10½	6	283½
Royal	1	14	23	7½	7	138⅜
Mizzen sails						
Mizzen course	2	17	18	10, 20	2	564½
Topsail	2	21	31½	14½, 15	4	883½
Middle band	—	—	—	—	6	34
Linings	—	—	—	—	6	79
Topgallant sail	1	16	21½	7½	7	140¼
Staysails						
Fore	2	16	23	12¼	1	285½
Top	1	16	22	18	5	211
Main	1	16	32	14¾	1	238
Top	2	26	28	10, 26	5	972½
Topgallant	1	22	22	7, 16½	7	265
Middle	1	25	25	8, 17½	6	325¾
Mizzen	1	23	25	8½, 14	2	274¾
Top	1	20	21	7, 16	6	240
Studding sails						
Fore	1	18	18	15	6	270
Top	2	14	18	20	6	640
Topgallant	1	10	14	10	7	120
Main	2	19	19	18	6	690½
Top	2	15	19	22	6	753½
Topgallant	2	11	15	11	7	286
Driver	1	23	29	10, 22	6	464½

lines and leechlines were also used to raise the sails. When set, sails were held to the wind by bowlines whose bridles were fixed to the sails' outer edges. The bowsprit carried yards and sails whose rigging was similar to that of mast yards, it being adapted to come inboard to the forecastle.

The fore and main masts carried studding sails and as these sails were set only occasionally, most of their rigging was stored in the hold. Staysails were rigged between *Victory*'s masts and jibs set to her bowsprit. These sails were handled by stays, halyards, sheets, tacks and downhaulers.

Aft of the mizzen mast a spanker was spread. This sail and its gaff and boom were fitted with lifts, pendants, sheets and halyards, all of which were adapted to suit a fore and aft sail. Both spars were fitted with parrels, and the driver boom rested on a saddle upon the lower mizzen mast.

SAILS

Victory could spread a total of thirty-four sails upon her three masts and bowsprit. These sails can be roughly categorized as square (quadrilateral) or fore-and-aft (triangular), and her masts were stepped so that her sails were spread to fullest advantage. Square sails, set upon their respective yards were the main sails (know as courses), the topsails and the topgallant sails. These sails as well as the spritsail and the spritsail topsail, which were rigged upon the bowsprit, were usually set roughly perpendicular to the middle line of the ship. Fore-and-aft sails were secured to the standing rigging; two stay or storm sails and two jibs were set between bowsprit and foremast, four stay sails between the fore and mainmasts and three between the main and mizzen masts. The spanker was set fore and aft, astern of the mizzen mast (this was, in effect, a staysail) and square studding sails could be set upon the fore and main yards.

Sails were made up of two-foot wide strips of canvas, of varying weight depending upon the sail, sewn together, their stitching being double and strictly regulated. To give strength to their edges, bolt ropes were sewn to their heads, clews and feet, and reef points (short ropes inserted through the sail, used to reduce the sail area by tying them up to the yard) were fitted and reinforced by an extra layer of canvas known as reef bands. As only the topsails were usually employed during high winds, they were made of the heaviest grade of canvas and four reef bands were fitted. Rigging was secured to the sails by cringles, a loop formed at the clew of the sail by the bolt ropes, or by stitching the canvas to reinforce it at the leech or foot. Robbands, short lengths of rope passing through cringles at the head of the sail, were used to secure sails to the yards.

ORDNANCE

Victory was, as were all battleships of her time, a floating gun platform. She was armed on three full decks with smooth bore, muzzle-loading cannon that were of the simplest design. Naval guns aboard *Victory* consisted of an iron barrel (earlier brass) secured to an oak carriage. The carriage was supported on four trucks (wheels) of elm that were, virtually, the gun's only moving parts. These trucks facilitated movement of the gun for loading, training and recoil. The

TABLE 9: **EXTRACT FROM GUNNER'S EXPENSE BOOK – AMMUNITION EXPENDED ON 21 OCTOBER 1805**

Powder, whole barrels	150	13,500 pounds
Powder, half barrels	80	3600 pounds
Powder, priming barrels	?	90 pounds

	32-pdr	24-pdr	12-pdr
Paper cartridges	937	1234	1799
Round shot	997	872	800
Double-headed shot	10	11	14
Grape shot	10	20	156

Note: 17,100 pounds of powder were used to discharge 62,432 pounds of round shot (2669 rounds).

barrel was cast in one piece and was furnished with trunnions, to secure it to the carriage, a touch hole for igniting the charge, and a pommel and breeching ring to secure tackle. The bore of the barrel was slightly larger in diameter than the round shot they fired (by 1/8in to 1/4in). This difference in size, known as 'windage' was deliberately used to accommodate any variation in shot size (it also reduced the power of the charge by up to 25 per cent). A 32-pounder gun of this design had a muzzle velocity of 1600ft per second, a maximum range of 2460yds, with an optimum range of 400yds, and could penetrate 2½ft of oak. It cost some £50.

Guns of this type, or very similar, were employed aboard warships from Tudor times and very few improvements were made. Early gun barrels were cast in brass but, to save costs, iron guns began to replace them. By 1790 all brass cannon had been superseded by iron. A flintlock firing mechanism was coming into use at this time, it having gradually replaced the slow-match ignition system, although matches were kept handy in case the flintlock misfired. The flintlock was triggered by pulling a lanyard and gave the gun captains much more control over firing their weapons.

Control and movement of guns was achieved by the use of tackles. Two side tackles, consisting of two blocks each (one secured to the hull beside the gunport, the other secured to the side of the carriage) were used to run out and train the guns (training was supplemented by the use of handspikes). A similar system was employed to haul the guns inboard with a block secured to the rear of the carriage, and another to a substantial ring anchored to the deck near the ship's centreline. A heavy breeching rope was fitted to finally stop the gun's recoil. It was also secured to the hull, each end to either side of the port and it passed through a ring, over the pommel. Guns were secured when not in use by pulling them outboard and elevating their barrels until the muzzle pushed upward on the port lintel. All the above tackles would then be tightened and secured and the gun barrel would be lashed to the beam above.

Tackles of a 32-pounder gun:
side tackle: 3½in rope, 2 double 11in blocks
training tackle: 3½in rope, 2 double 11in blocks
breeching rope: 9½in

Guns crews varied with the size of their guns: 12-pounders required a crew of ten, 24-pounders required a crew of twelve and 32-pounders required a crew of fifteen. The crews consisted of 2 captains, 2 loaders and 2 spongers, the balance being auxiliaries, who worked the tackles. The gun crews were purposely overmanned, having two of each 'number' so that, if required, half of the crew could work the gun on the opposite side of the ship. A well-trained crew could prepare a gun for action in six minutes and their rate of fire was one round every two minutes (the rate of fire depended upon a full or half crew working the gun and the number of casualties sustained).

One other type of gun saw service aboard *Victory* – this was the carronade, and in its way it was a revolutionary weapon. Designed originally for merchant ships, it was remarkably light for its calibre and could be manned by a far smaller crew than a conventional gun, thanks to its highly original mounting. This was a traversing platform, secured at its outboard end to the gunport sill by a pivot pin, with rollers on the inboard end to allow it to be easily swung through a wide arc. Instead of trunnions, the gun had a single lug underneath which allowed elevation by means of a screw mechanism and chock. The gun and its elevating gear was fixed to a wooden bed which recoiled in a groove along the base-platform, and, although training and breeching tackle like a long gun were required, the whole mounting could be handled by a small number of men. However, it was relatively fragile and was prone to break-downs and oversetting in action. The carronade achieved its weight-saving by a very short barrel, but although the windage was reduced to compensate partially, it resulted in a relatively short range. However, the low velocity 'smashing' effect was very useful against both personnel and ship structure at the short ranges preferred by the Royal Navy, and the carronade was soon adopted as quarterdeck and forecastle armament for frigates and smaller warships. Line of battleships rarely carried more than a few, and they were usually mounted high up where their weight made long guns undesirable.

The most common form of ammunition employed by the Royal Navy was round shot; indeed guns were sized by the weight of shot they could throw. Shot was fundamentally an anti-hull projectile and very imaginative variations occurred – double-shotting of guns was common, especially for the first discharge, and heated shot was used in an effort to set enemy ships on fire. When anti-personnel tactics were employed, grape, fragmentation and canister shot was used and bar and chain shot, in many forms, were used in an effort to destroy rigging, masts and yards. These missiles were propelled by black powder that was pre-measured (about one-third the weight of shot to the weight of powder) and packed into cartridges. Shot was stored in lockers in the hold: barrels of bulk powder were stored in the fore and aft magazines where cartridges were made up, and as *Victory* had three decks, two hanging magazines were constructed so that ready ammunition could be stored closer to the gundecks. These magazines were placed roughly at the level of the orlop deck yet below the waterline where they would not be vulnerable to enemy shot. The forward hanging magazine served the lower and middle deck, the aft hanging magazine served the upper deck, quarterdeck and forecastle.

Many different sizes of gun were employed by the Royal Navy and standardizing the number and calibre for each rate of ship was always a concern. The problem was compounded by the ability, or more precisely the lack of ability, of a ship to carry the specified guns, due to her state of repair. The supply of ordnance and all related munitions was controlled by a bureaucracy, the Board of Ordnance, that was distinctly separate from the Navy and this added to the problem of arming a ship. The armament of *Victory* changed often over her years of service for many reasons: improvement and innovation in guns, standardization programmes of the Navy, down-grading in class, and even the personal preference of a commanding officer. In short, *Victory*'s armament seemed to be constantly in a state of flux, and the best gauge of her firepower was not the number of guns that she carried, but the broadside weight discharged by her guns.

TABLE 10: **GUNS CARRIED ABOARD VICTORY**

As specified on sheer draught 1759

Lower deck	30 guns of 42 pounds	
Middle deck	28 guns of 24 pounds	
Upper deck	30 guns of 12 pounds	
Quarterdeck	10 guns of 6 pounds	
Forecastle	2 guns of 6 pounds	
Total	100	Broadside weight, 1182 pounds

As fitted at commissioning 1778

Lower deck	30 guns of 32 pounds	
Middle deck	28 guns of 24 pounds	
Upper deck	30 guns of 12 pounds	
Quarterdeck	10 guns of 6 pounds	
Forecastle	12 guns of 6 pounds	
Total	100	Broadside weight, 1062 pounds

Note: Admiral Keppel, *Victory*'s first commanding officer, had 32 pounders substituted for the 42-pounders specified. He felt that the 32-pounders were superior in that they required less men and room to work, had a more rapid rate of fire and, since they weighed less, helped in stabilizing and handling the ship. All this was gained without loss of penetrating power. In this matter Keppel showed a good deal of foresight: testing of naval guns 1747 had already shown that the 32-pounder was the optimum weapon, and the Navy eventually specified 32-pounders for the lower decks of all ships. The change resulted in a drop in broadside weight of 150 pounds.

As at refit of 1779

As originally specified on sheer draught (32-pounders replaced by 42-pounders).

As at refit of 1780

Lower deck	30 guns of 42 pounds	
Middle deck	28 guns of 24 pounds	
Upper deck	30 guns of 12 pounds	
Quarterdeck	10 guns of 6 pounds	
Forecastle	2 guns of 6 pounds	
Forecastle	2 carrs of 24 pounds	
Poop deck	6 carrs of 18 pounds	
Total	108	Broadside weight, 1296 pounds

As at refit of 1782

Lower deck	30 guns of 42 pounds	
Middle deck	28 guns of 24 pounds	
Upper deck	30 guns of 12 pounds	
Quarterdeck	10 guns of 12 pounds	
Forecastle	2 guns of 12 pounds	
Forecastle	2 carrs of 24 pounds	
Poop deck	6 carrs of 18 pounds	
Total	108	Broadside weight, 1290 pounds

Note: It is likely that by this refit all brass guns had been replaced by iron.

As at refit of 1803

Lower deck	30 guns of 32 pounds	
Middle deck	28 guns of 24 pounds	
Upper deck	30 guns of 12 pounds	
Quarterdeck	12 guns of 12 pounds	
Forecastle	2 carrs of 24 pounds	
Total	102	Broads de weight, 1092 pounds

Note: After this refit all guns employed flintlock firing mechanisms.

As at refit of 1805 (Trafalgar condition)

Lower deck	30 guns of 32 pounds	
Middle deck	28 guns of 24 pounds	
Upper deck	30 guns of 12 pounds	
Quarterdeck	12 guns of 12 pounds	
Forecastle	2 guns of 12 pounds	
Forecastle	2 carrs of 68 pounds	
Total	104	Broadside weight, 1148 pounds

As at refit of 1806

Lower deck	30 guns of 32 pounds	
Middle deck	28 guns of 24 pounds	
Upper deck	30 guns of 12 pounds	
Quarterdeck	4 guns of 12 pounds	
Quarterdeck	8 carrs of 32 pounds	
Forecastle	2 carrs of 32 pounds	
Total	102	Broadside weight, 1180 pounds

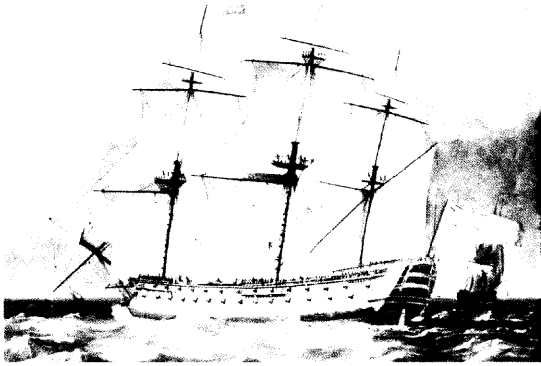
As at refit of 1807 (Second Rate)

Lower deck	28 guns of 32 pounds	
Middle deck	28 guns of 18 pounds	
Upper deck	30 guns of 12 pounds	
Quarterdeck	8 carrs of 32 pounds	
Forecastle	2 carrs of 32 pounds	
Forecastle	2 guns of 12 pounds	
Total	98	Broadside weight, 1052 pounds

As at refit to guard ship 1823

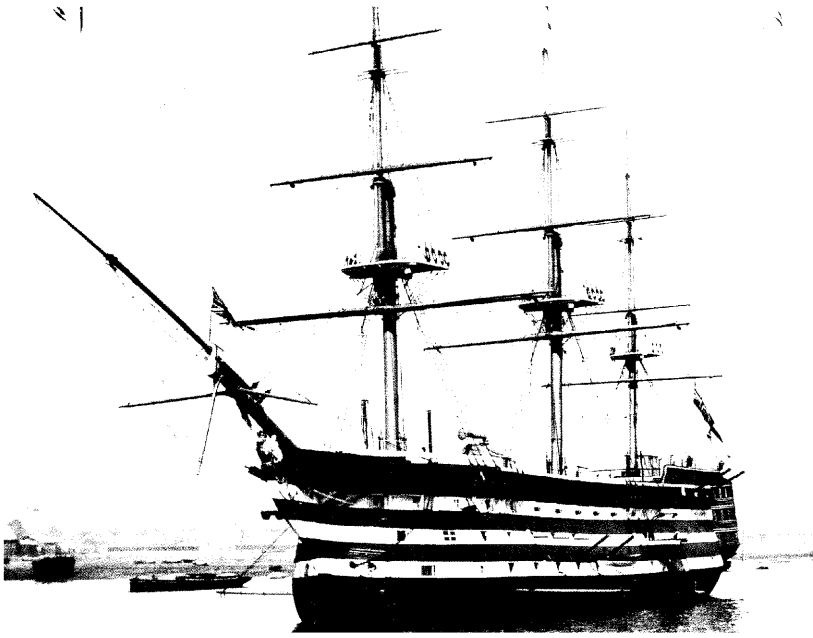
Reduced to 21 guns

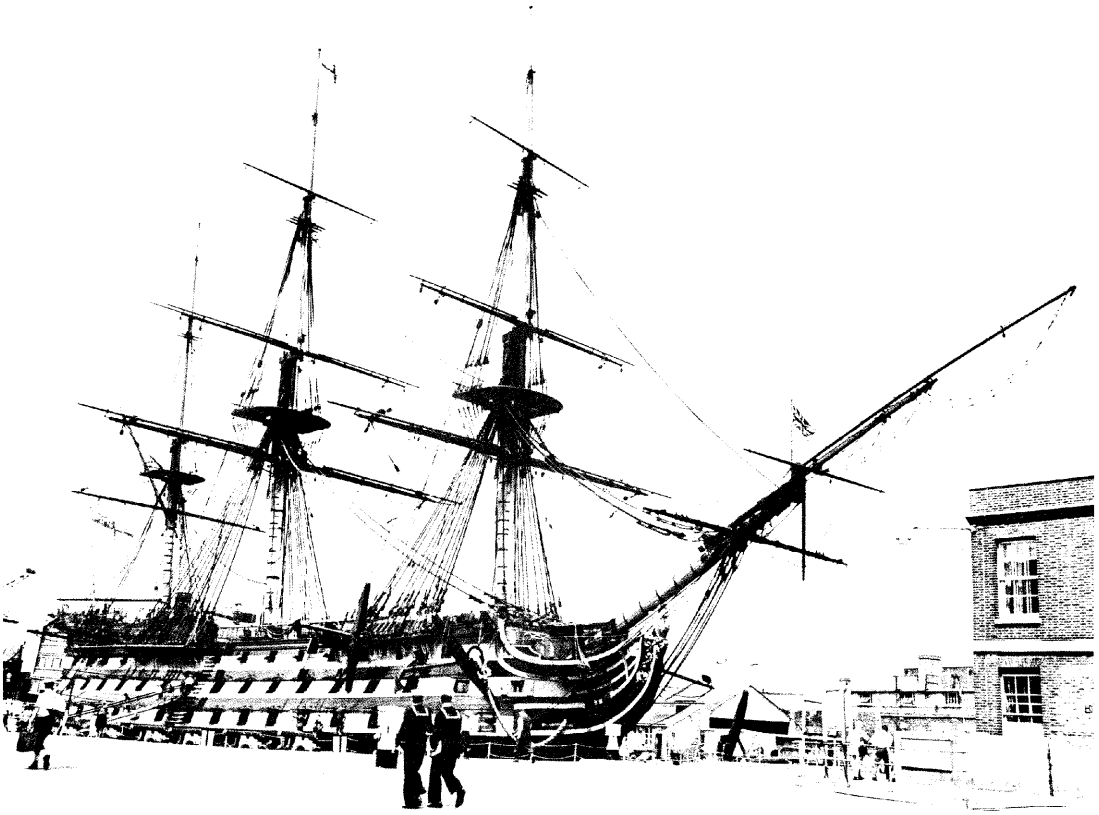
The Photographs



2. Painting, by Monamy Swaine, of *Victory* as she appeared in 1793 as flagship of Admiral Lord Hood (Mediterranean Fleet). Note her open stern and the lateen sail upon her mizzen mast.
CPL

3. *Victory* at Portsmouth, about 1900. Some changes from her Trafalgar condition are visible here, notably the round bows and poop bulwarks.
CPL

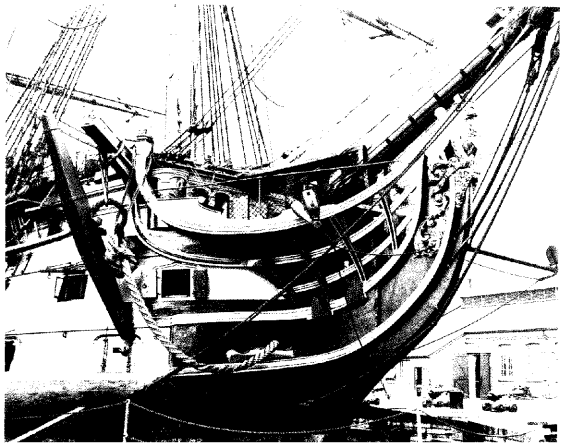


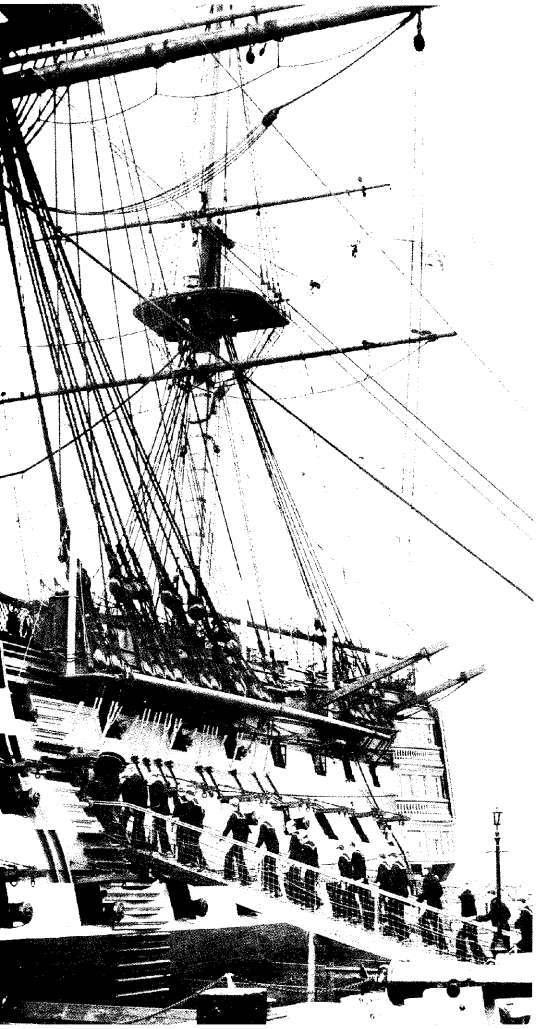


4. *Victory* at Portsmouth after her 1960s re-rigging (taken 8 July 1966). *CPL*

6. Detail of figurehead and head rails. The scale of the ship is demonstrated by the man working on the staging (taken 18 March 1954).
CPL

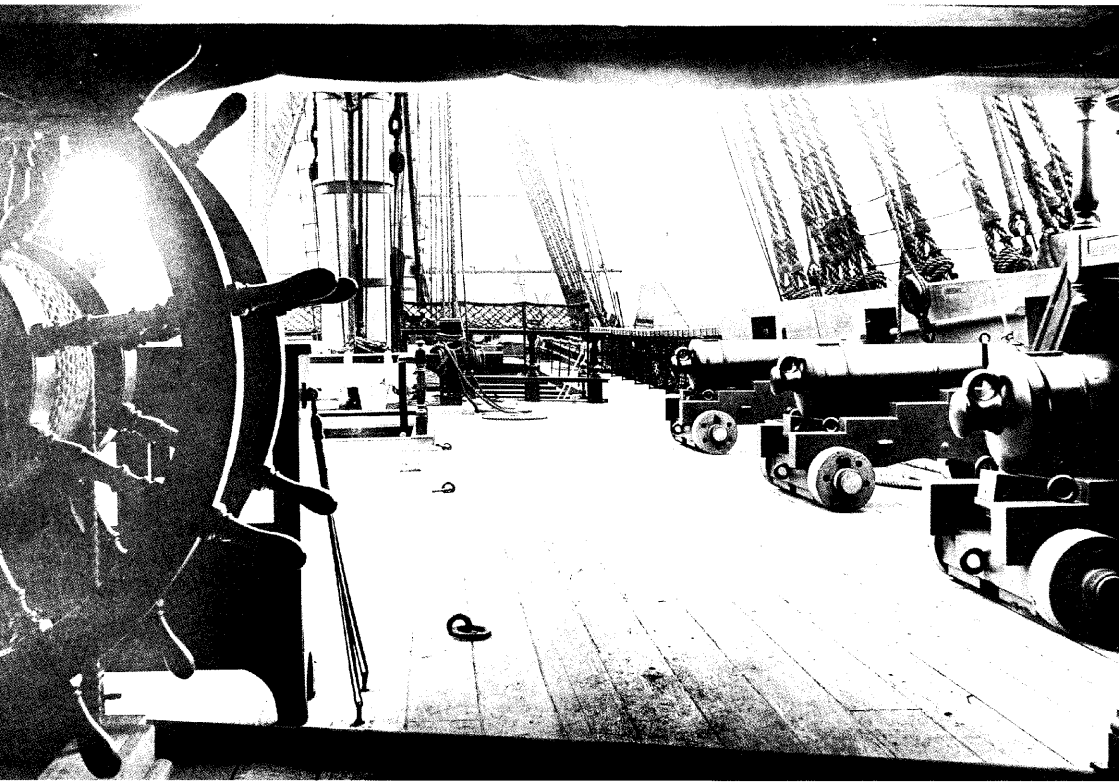
5. Detail of *Victory*'s bows.
CPL



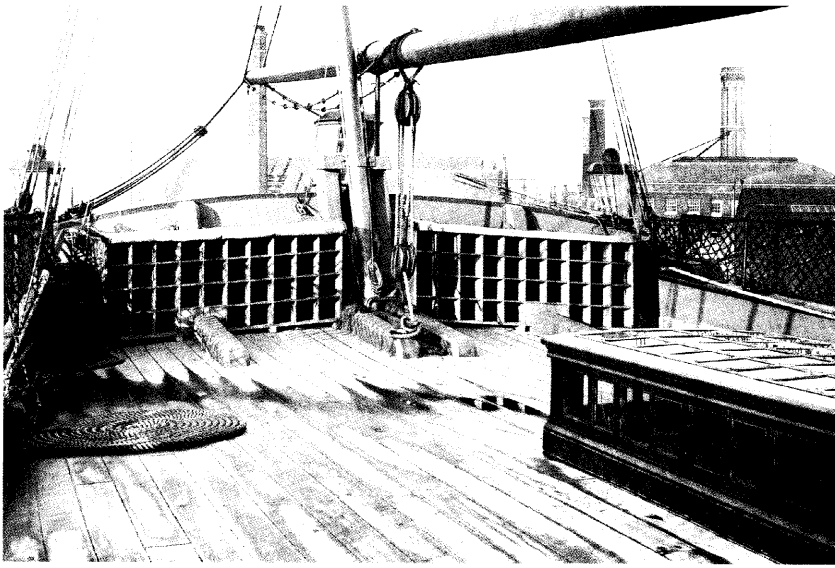


7. Port side, aft (taken 14 July 1947).
CPL

8. Stern windows and detail of taffrail decoration.
Wright & Logan



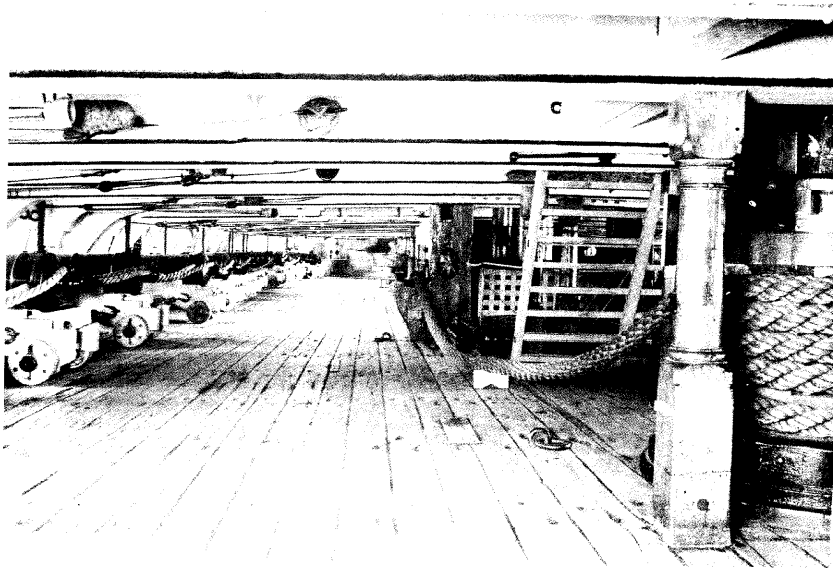
9. Quarterdeck, starboard, looking forward. Note the steering wheel, binnacle and 12-pounder guns.
Wright & Logan



10. Poop deck, starboard, looking aft. Note the compartmented flag lockers (with canvas shrouds pulled back), knees and skylight.
Wright & Logan

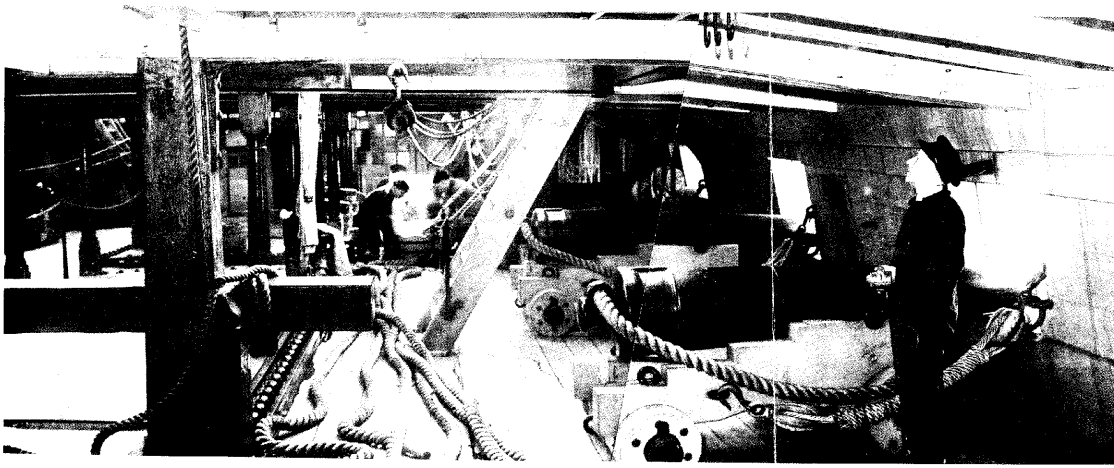
11. Photo of the main hold taken from the forward platform, looking aft. The massive riders are being re-bolted during restoration (taken 25 October 1963). The size of the hold is demonstrated by the men in the photo. The plank structure at the top of the photo is the forward hanging magazine.
CPL

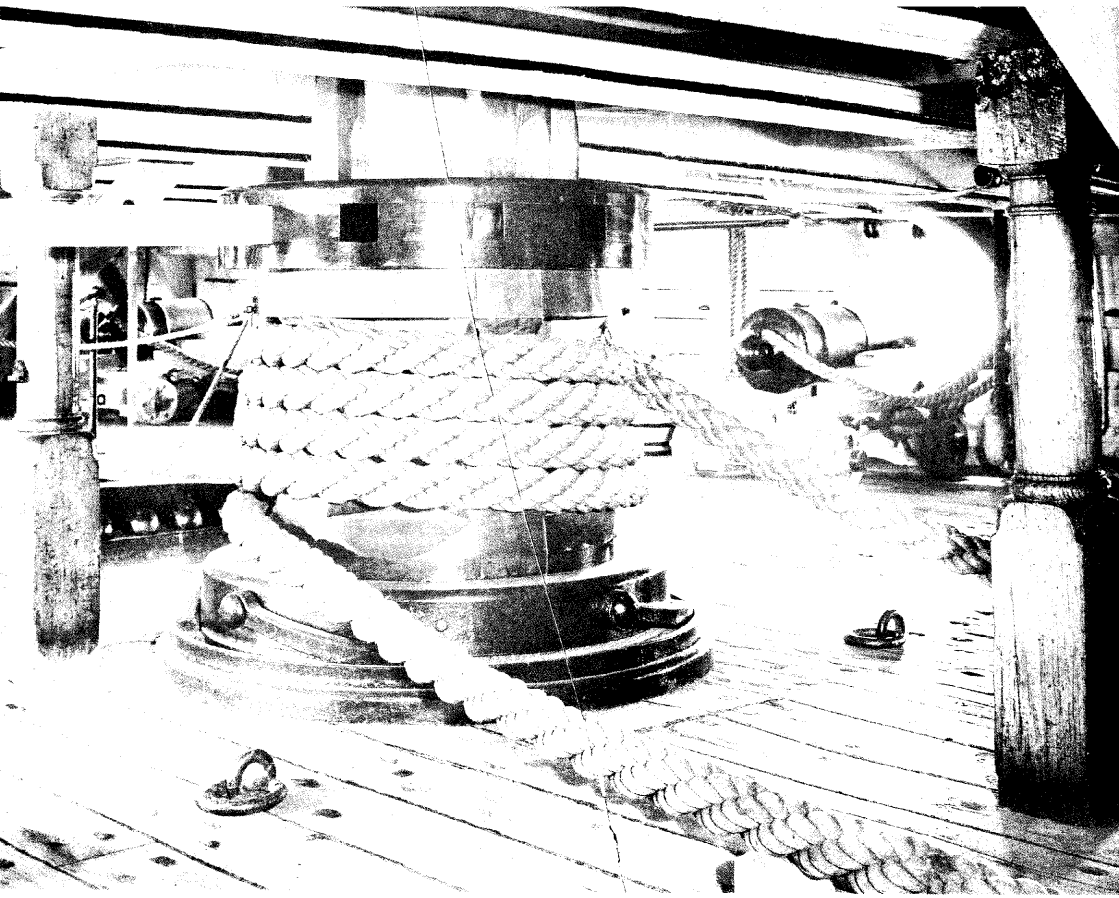
12. *Left:* Nelson's day cabin (taken 25 October 1963). *CPL*



13. Lower deck, port. The photo was taken in 1953 from just aft of the main capstan. Note the messenger and removable pillars. The guns ranged along the ship's side are 32-pounders. *Wright & Logan*

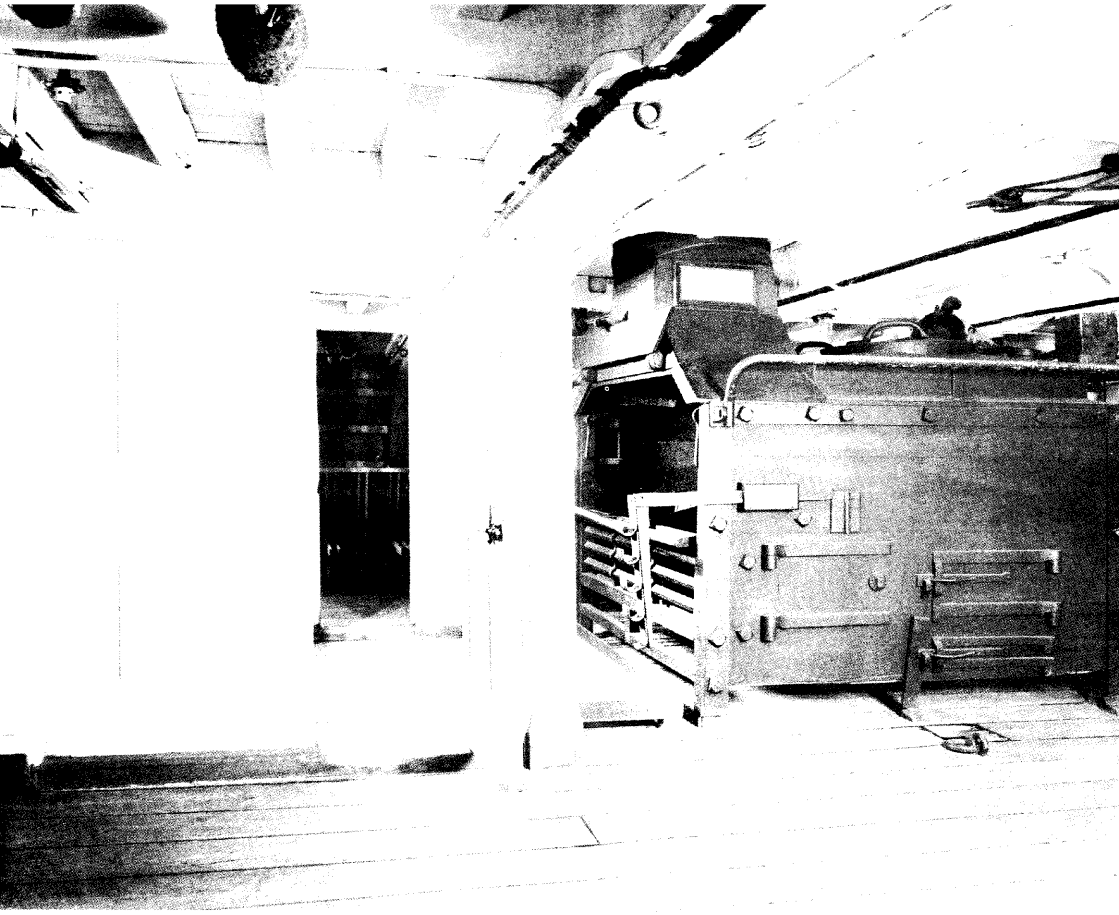
14. Upper deck, starboard. The photo was taken just ahead of the main mast and looks forward (22 January 1947). Note the bitts (to the left) and the 12-pounder guns. The ladder leads to the gangboards above. *CPL*



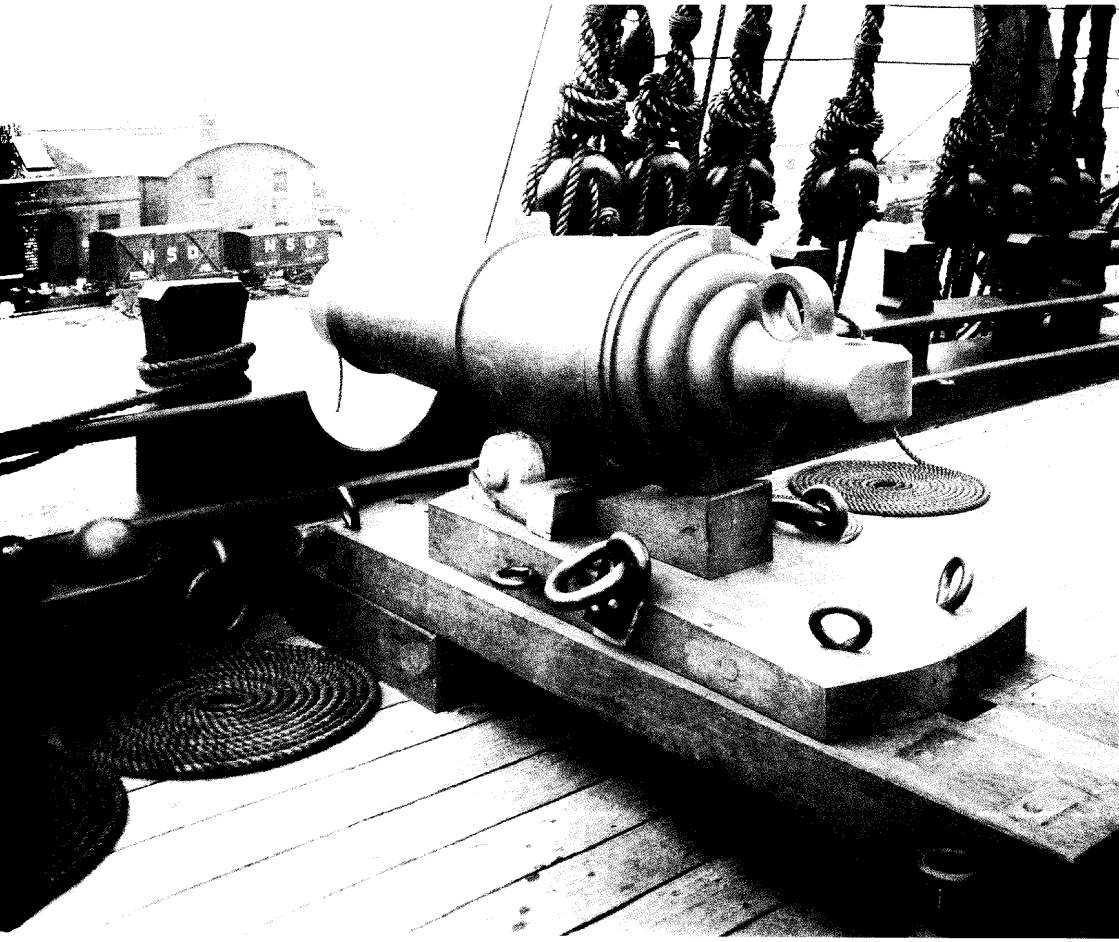


15. Lower deck, starboard: the main capstan and messenger. Note the reversable pawls at the capstan's base and the capstan bar placed in the trundle head (taken June 1953).
Wright & Logan

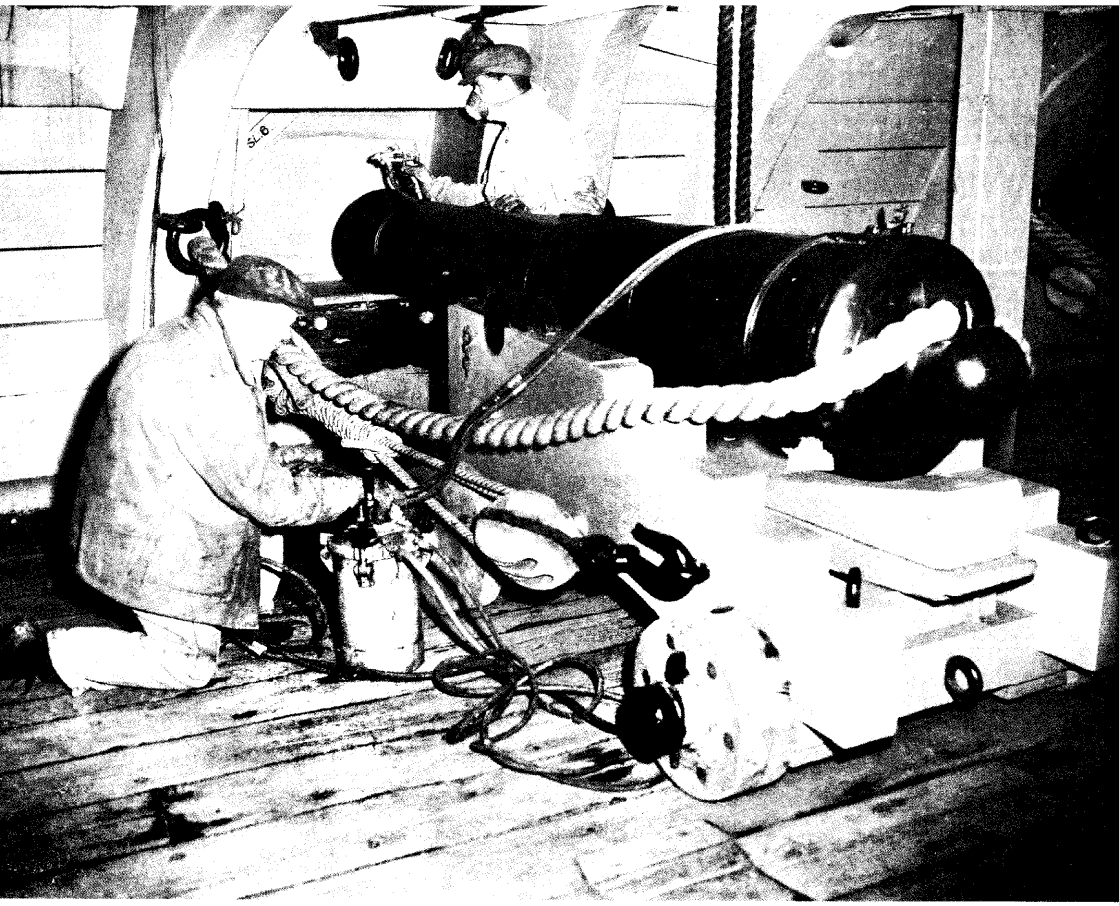
16. Lower deck, port, looking forward at the riding bitts. The large cable is a hawser; the smaller one is the messenger (taken in 1953).
Wright & Logan



17. Middle deck, starboard. The galley is at the left of the photo and the range, to the right, was the only means of preparing hot meals for some 750 men (taken October 1953).
Wright & Logan



18. Forecastle, starboard. Replica of a 68-pounder carronade, without breeching tackle fitted (taken between the World Wars). *Wright & Logan*

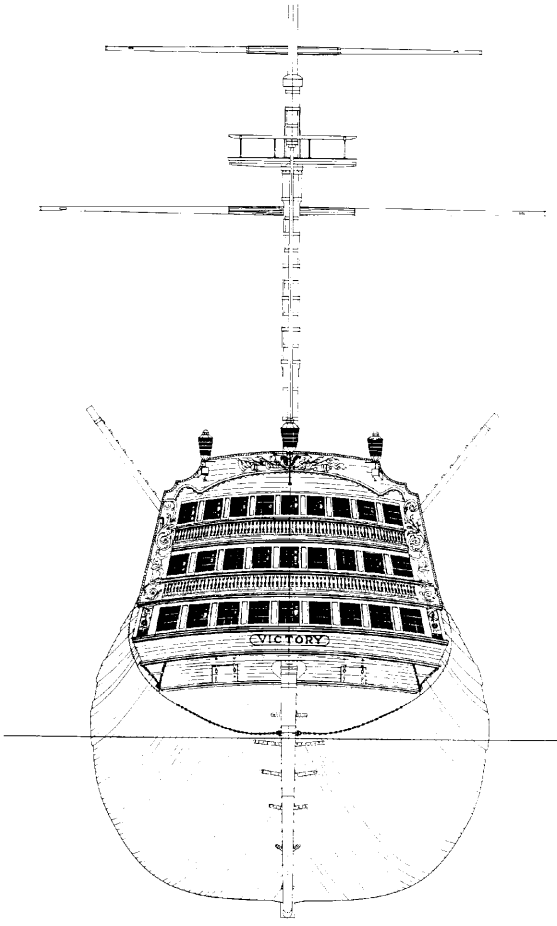


19. One of *Victory*'s 32-pounder guns. Note the breeching and training tackles (taken 18 March 1954).
CPL

20. Trafalgar Day, 1965: *Victory* displays Nelson's famous signal "England expects that every man will do his duty". *CPL*

The Drawings

A1



SOURCES FOR THE DRAWINGS

Victory is possibly the most completely documented ship ever. This is due to the obvious fact that as she still exists, she can be examined and all aspects of her can be recorded. Where discrepancies between her arrangement of today and her condition in 1805 arise, records can easily be checked and educated assumptions made. Arthur Bugler did just that, and in 1966 published *HMS Victory – Building, Restoration & Repair* with its accompanying drawings. The drawings in this book – particularly the framing, and masts and yards – are a visual translation of Mr Bugler's text, and I have tried to show the ship in total, that is, the whole picture.

C Nepean Longridge also recorded *Victory* in his book *The Anatomy of Nelson's Ships*, with drawings prepared by G F Campbell. This book was written from a modeller's point of view and provides extraordinary insight into *Victory* as well as information on wooden warships in general.

Finally, many other publications dealing with *Victory* are available and most contain photographs, which were indispensable as they show the ship in great detail. A short list of the most useful is given below.

HMS Victory – Building, Restoration and Repair, Arthur Bugler, OBE
The Anatomy of Nelson's Ships, C Nepean Longridge
The Seafarers, Fighting Sail, A B C Whipple
Great Battle Fleets, Oliver Warner
Great Sea Battles, Oliver Warner
'The World's Most Famous Ship', from *Shipping Wonders of the World*, ed Clarence Winchester, Part 15
Nelson, Oliver Warner
Nelson & Victory, Peter Whitlock
Sailing Ship Rigs and Rigging, Harold A Underhill
The Ship of the Line, Volumes I and II, Brian Lavery
The Years of Endurance 1793–1802, Arthur Bryant
Years of Victory 1802–1812, Arthur Bryant
The Seven Years War, Rupert Furneaux

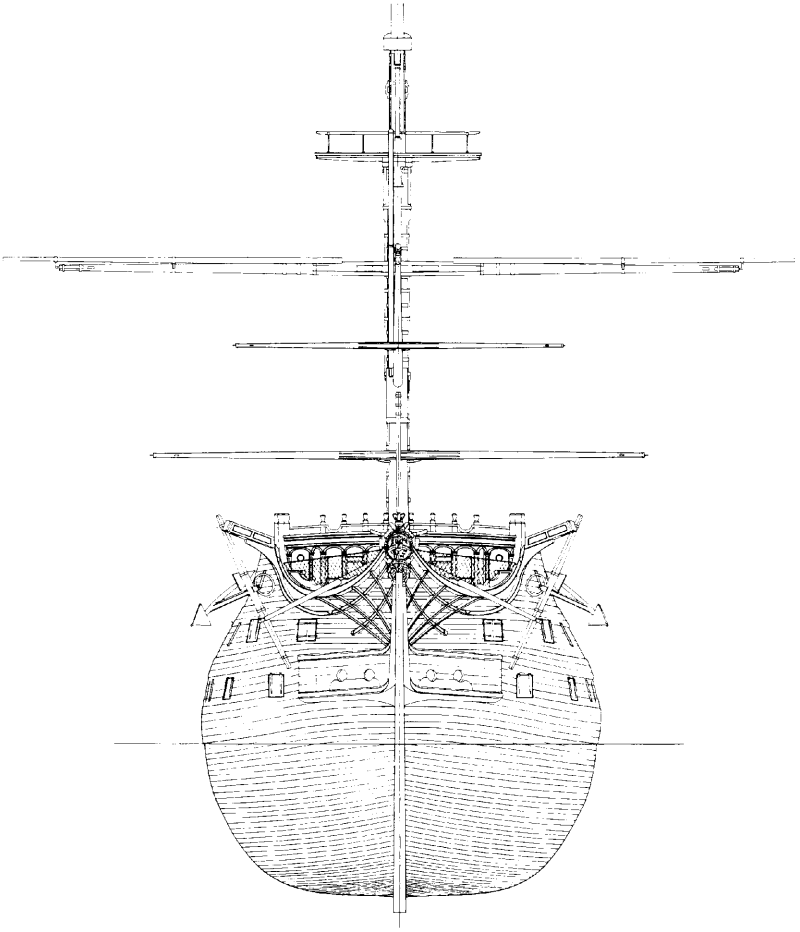
Large scale copies of the drawings reproduced in this book can be obtained from the author. Details from: John McKay, PO Box 752, Fort Langley, British Columbia, Canada VOX 1JO.

A General arrangements

A1 **BOWS (1/192 scale)**

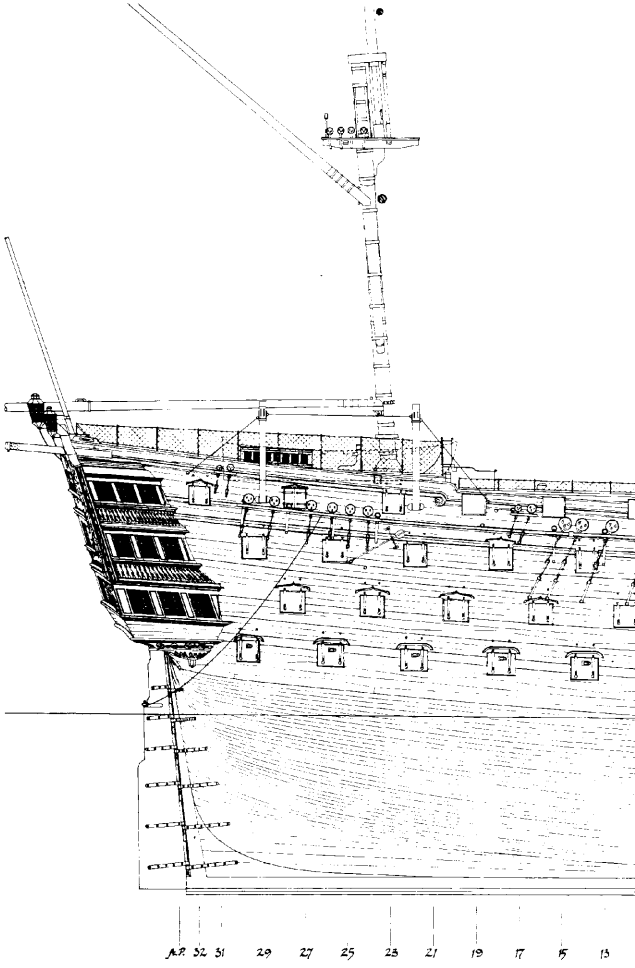
A2 **STERN (1/192 scale)**

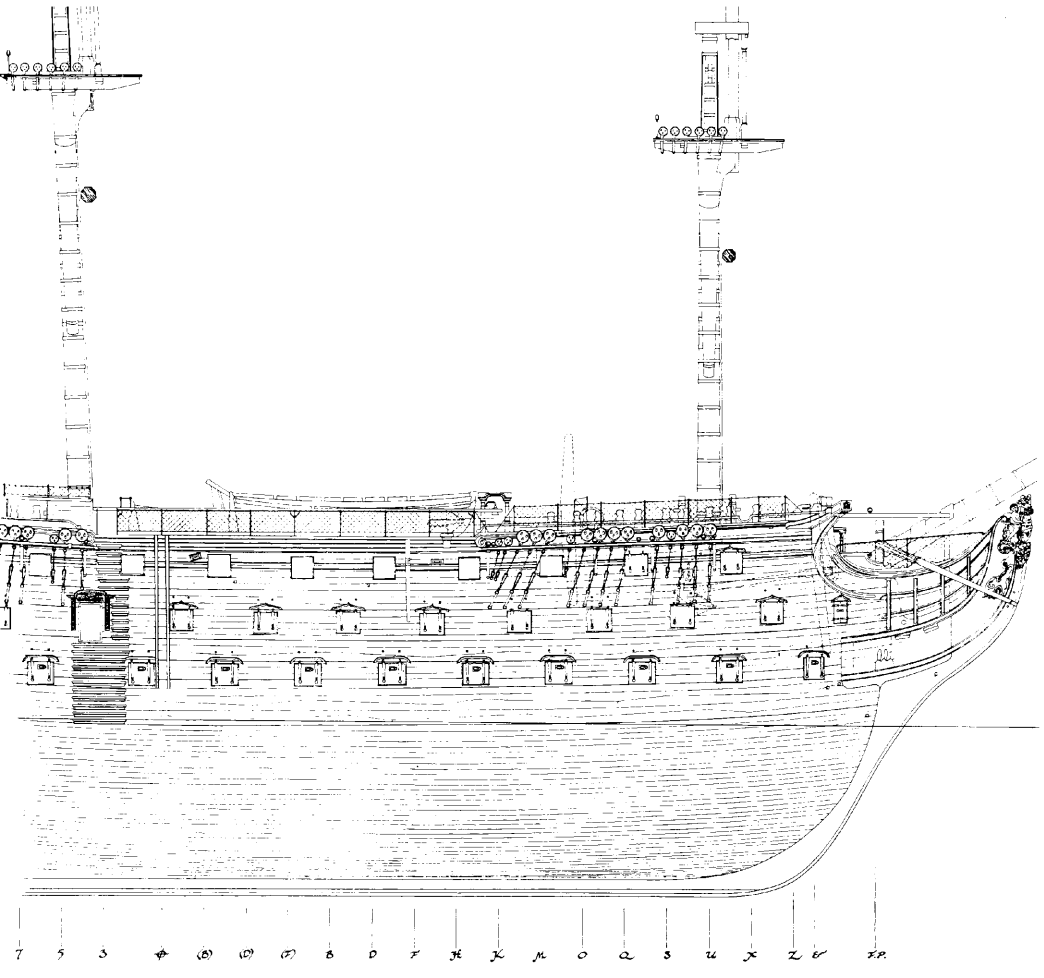
A2



A General arrangements

A3 OUTBOARD PROFILE (1/192 scale)

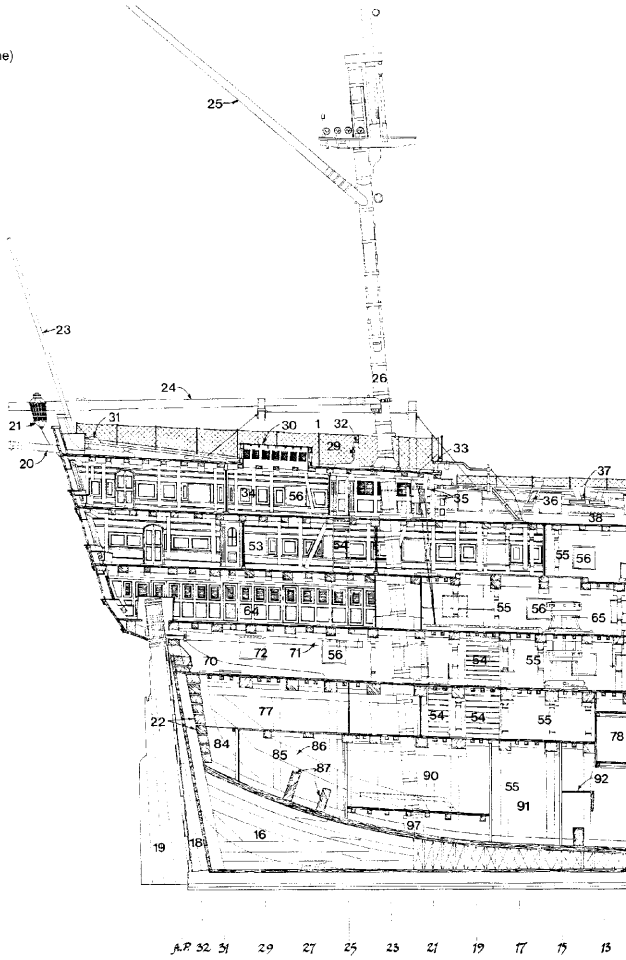


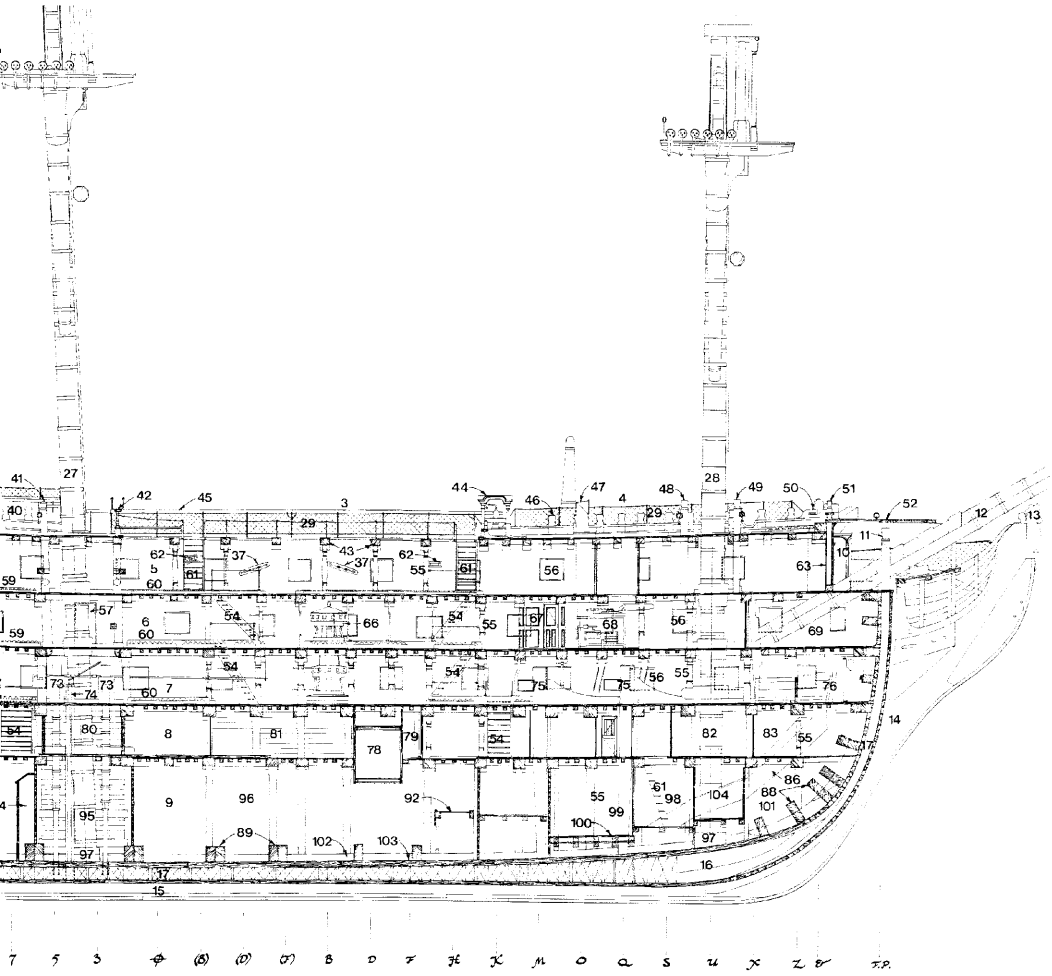

7
5
3
Φ
(B)
(D)
(F)
B
D
F
H
K
M
O
Q
S
U
X
Z
b
F.P.

A General arrangements

A4 INBOARD PROFILE (1/192 scale)

1 Poop deck
2 Quarterdeck
3 Boat booms (waist)
4 Forecastle
5 Upper deck
6 Middle deck
7 Lower deck
8 Orlop deck
9 Hold
10 Roundhouse
11 Knighthead
12 Bowsprit
13 Figurehead
14 Cutwater
15 Keel
16 Deadwood
17 Frames
18 Stern post
19 Rudder
20 Stern davit
21 Lantern
22 Transoms
23 Ensign staff
24 Driver boom
25 Driver gaff
26 Mizzen mast
27 Main mast
28 Fore mast
29 Hammock cranes and netting
30 Skylight
31 Snatch block
32 Mizzen topsails sheet bitts
33 Rail
34 Captain's quarters
35 Steering wheel and binnacle
36 Kevel
37 Staghorn
38 Shot garland
39 Pinrail
40 Timber heads
41 Fore brace bitts
42 Rail with hammock cranes
43 Skid beams
44 Belfry
45 Rail
46 Timber heads
47 Galley stove chimney
48 Main top bowline bitts
49 Fore topsail sheet bitts
50 Snatch block
51 Timber head
52 Gangboards (Marines' walk)
53 Admiral's quarters
54 Companionway
55 Pillar
56 Gunport
57 Entry port
58 Main companionway
59 Aft hatch (note shot garlands)
60 Main hatch (note shot garlands)
61 Ladder
62 Sheaves
63 Beakhead bulkhead
64 Wardroom
65 Main (jeer) capstan
66 Fore capstan
67 Galley
68 Galley stove
69 Sick bay
70 Transom knee
71 Tiller
72 Gunroom
73 Main (bilge) pumps
74 Elm tree pump
75 Riding bitts
76 Manger
77 Bread room
78 Hanging magazine
79 Lobby (to hanging magazine)
80 Pump room
81 Sail room
82 Gunner's store
83 Fore peak
84 Lady's hole
85 Aft peak
86 Vent trunk
87 Crutches
88 Breast hooks
89 Riders
90 Flour stowage
91 Spirit room
92 Platform
93 Aft hold
94 Shot locker
95 Hold well
96 Main hold
97 Mast step
98 Filling room
99 Grand magazine
100 Pallating flat
101 Fore peak
102 Kelson
103 Ceilings
104 Light room

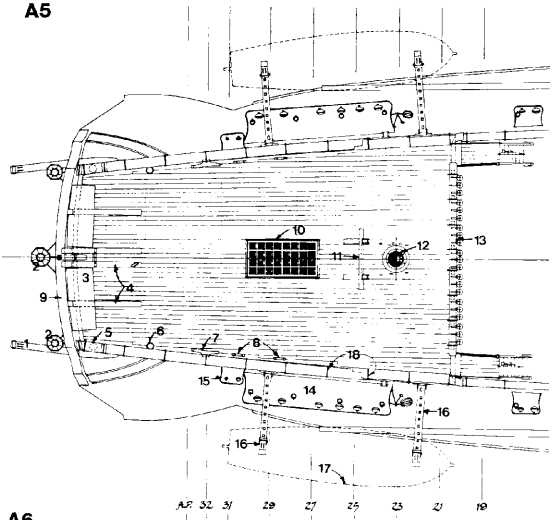


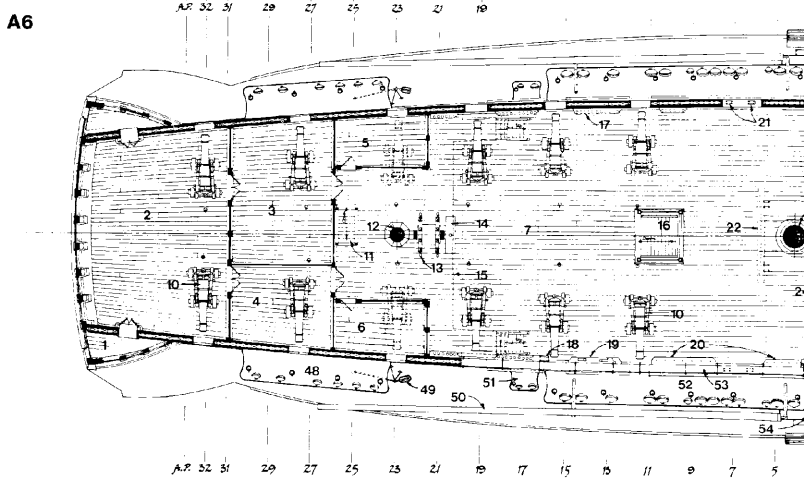

41
27
42
45
3
44
46
47
4
48
28
49
50
51
52
40
29
29
12
13
11
10
62
5
60
61
37
43
37
62
55
61
56
63
59
57
6
60
54
66
54
55
57
68
56
69
59
54
54
75
75
56
55
76
73
74
73
60
7
84
80
8
81
78
79
54
82
83
55
14
4
9
96
92
55
61
98
104
86
88
101
95
89
102
103
100
99
97
97
16
17
15
7
5
3
ϕ
(B)
(D)
(F)
B
D
F
H
K
M
O
Q
S
U
X
Z
&
T.P.

A General arrangements

A5 POOP DECK (1/192 scale)

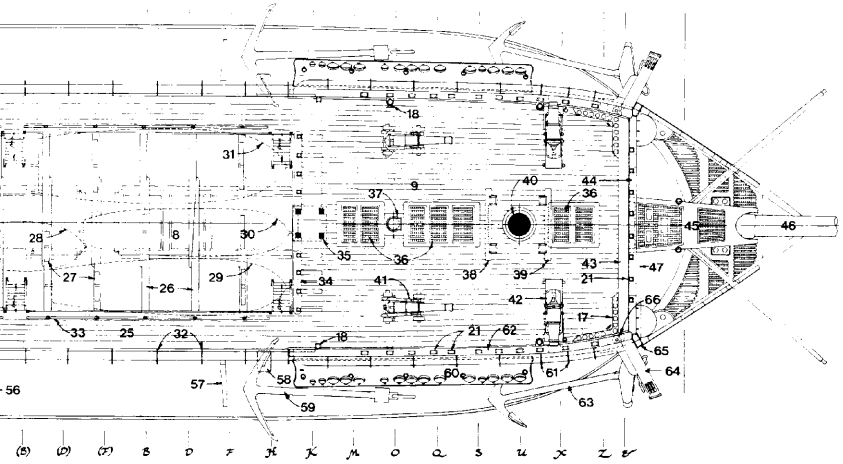
1 Stern davit
2 Lanterns
3 Flag locker
4 Knees
5 Snatch block
6 Kevel
7 Staghorn
8 Cleats
9 Taffrail
10 Skylight (over captain's dining cabin)
11 Mizzen topsail sheet bitts
12 Mizzen mast
13 Rail (note fire buckets)
14 Mizzen channel
15 Backstay channel
16 Quarter davits
17 Sea cutter (30 ft)
18 Hammock cranes (with netting)





A6 QUARTERDECK (1/192 scale)

1 Quarter gallery
2 Captain's day cabin
3 Captain's dining cabin
4 Captain's sleeping cabin
5 Master's cabin
6 Secretary's cabin
7 Quarterdeck
8 Boat booms (open to upper deck)
9 Forecastle
10 12-pounder gun (short)
11 Companionway (to admiral's dining cabin)
12 Mizzen mast
13 Steering wheel
14 Binnacle
15 Break of poop deck over
16 Main companionway
17 Shot garland
18 Kevels
19 Staghorn
20 Pinrails
21 Timber heads
22 Fore brace bitts
23 Main mast
24 Rail (with hammock cranes)
25 Gangway
26 Skid beams
27 Boat Chocks
28 18ft cutter
29 32ft barge
30 28ft pinnace
31 34ft launch
32 Hammock cranes (with netting)
33 Rail
34 Rail
35 Belfry
36 Gratings
37 Galley stove chimney
38 Main top bowline bitts
39 Fore topsail sheet bitts
40 Fore mast
41 12-pounder gun (medium)
42 68-pounder carronade
43 Cat tail
44 Fiferail
45 Gangboard (Marines' walk) – note openings for main stay collars
46 Bowsprit
47 Planksheer
48 Mizzen channel
49 Main sheet block and bracket
50 Main lower studding sail boom
51 Backstay channel
52 Main channel
53 Planksheer (with hammock cranes and netting)
54 Entry port canopy
55 Side ladder
56 Fenders
57 Chesstree
58 Anchor palm block
59 Sheet anchor
60 Fore channel
61 Hammock cranes (with netting)
62 Fiferail
63 Bower anchor
64 Cathead (with bracket)
65 Timber head of main rail
66 Snatch block

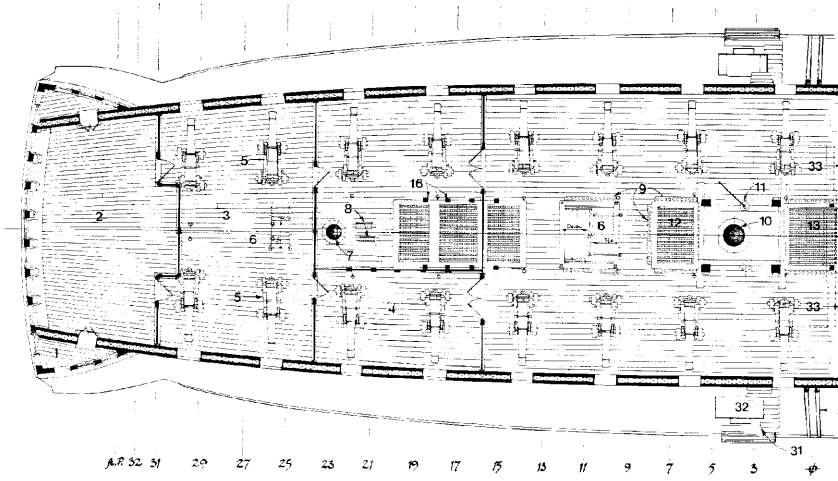


A General arrangements

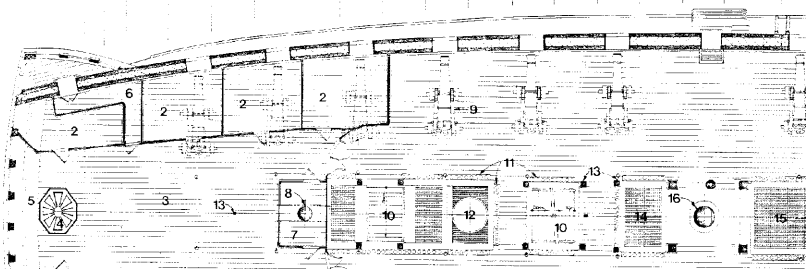
A7 UPPER DECK (1/192 scale)

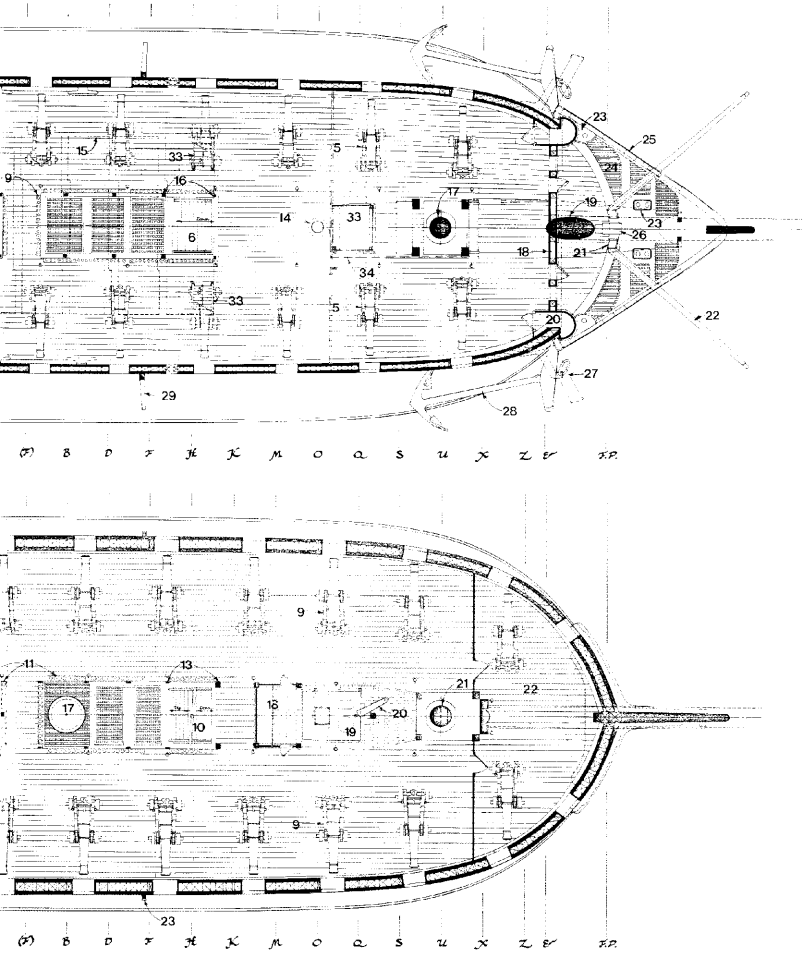
1 Quarter gallery
2 Admiral's day cabin
3 Admiral's dining cabin
4 Admiral's sleeping cabin
5 12-pounder gun (long)
6 Companionway
7 Mizzen mast
8 Slide blocks for tiller ropes
9 Shot garlands
10 Main mast
11 Elm tree pump
12 Aft hatch
13 Fore hatch
14 Galley stove chimney
15 Line of boat booms over
16 Pillars
17 Fore mast
18 Beakhead bulkhead
19 Bowsprit
20 Roundhouse
21 Knighthead
22 Boomkin
23 Stool
24 Grating
25 Main rail
26 Stem
27 Cathead over
28 Bower anchor
29 Chesstree
30 Fenders
31 Side ladder
32 Entry port canopy
33 Steam trunk
34 Removable bulkhead

A7



A8





A8 **MIDDLE DECK (1/192 scale)**

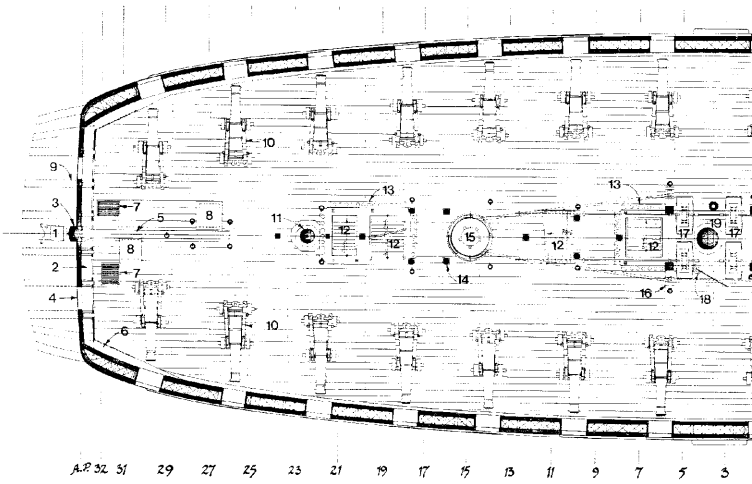
1	Quarter gallery
2	Officers' cabins
3	Wardroom
4	Cover for rudder head
5	Bench
6	Passage
7	Pantry
8	Mizzen mast
9	24-pounder gun (long)
10	Companionway
11	Shot garland
12	Main (jeer) capstan
13	Pillar
14	Aft hatch
15	Main hatch
16	Main mast
17	Fore capstan
18	Galley
19	Galley stove
20	Condenser
21	Fore mast
22	Sick bay
23	Chesstree
24	Fenders
25	Side ladder
26	Entry port

A General arrangements

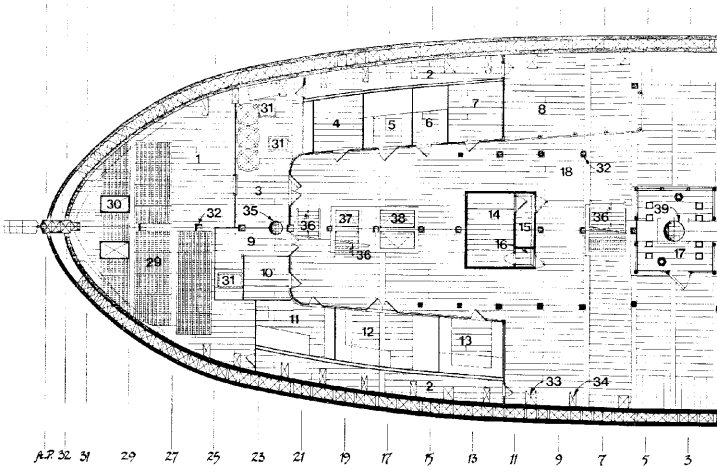
A9 LOWER DECK (1/192 scale)

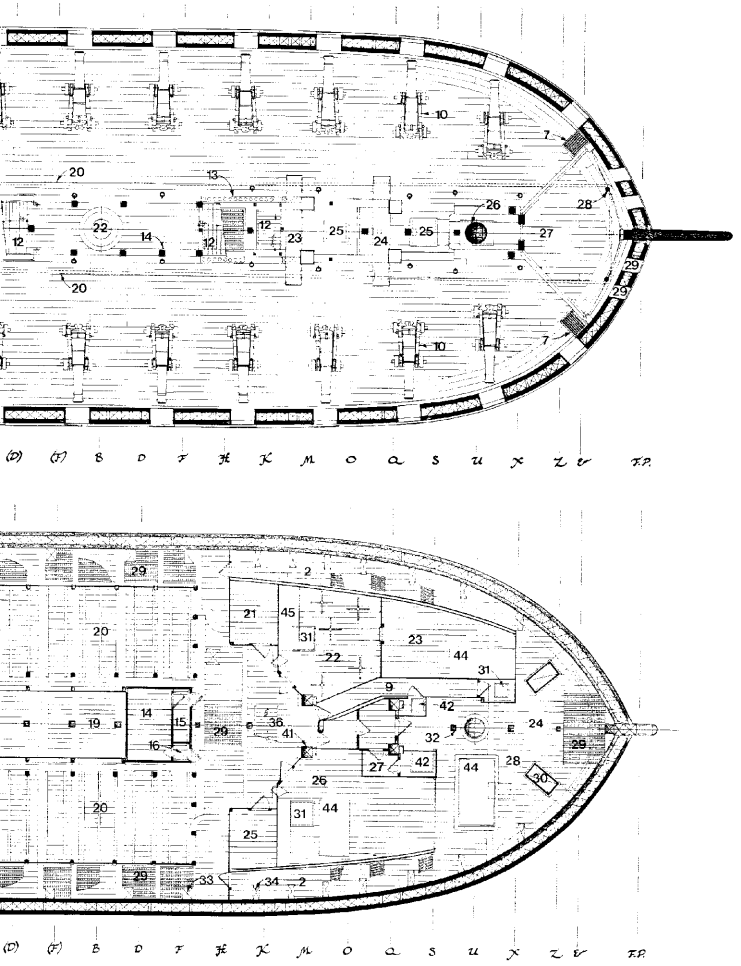
1 Rudder
2 Transom (note iron braces)
3 Stern post
4 Stern port
5 Transom knee
6 Lodging knee
7 Grating (vent trunks)
8 Scuttle
9 Counter timbers over
10 32-pounder gun (long)
11 Mizzen mast
12 Companionway
13 Coaming and shot garland
14 Pillar
15 Main (jeer) capstan
16 Roller fairlead
17 Main (bilge) pumps (note crank handles)
18 Elm tree pump
19 Main mast
20 Messenger (dotted)
21 Main hatch
22 Fore capstan
23 Aft riding bitts
24 Fore riding bitts
25 Scuttle
26 Fore mast
27 Manger
28 Roller for messenger
29 Hawse holes

A9



A10





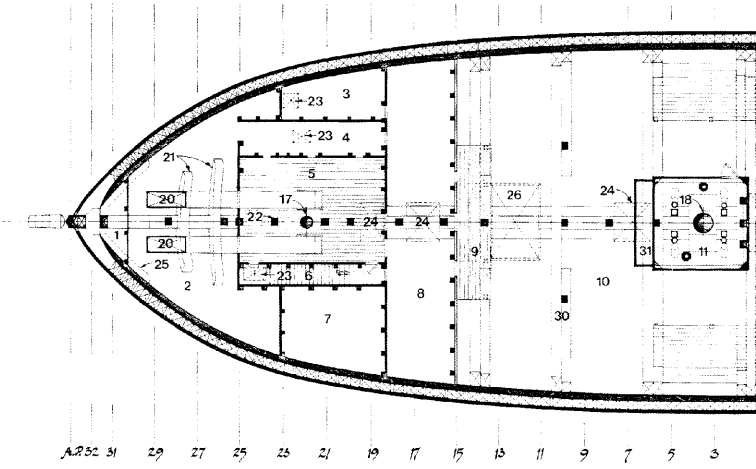
A10 ORLOP DECK (1/192 scale)

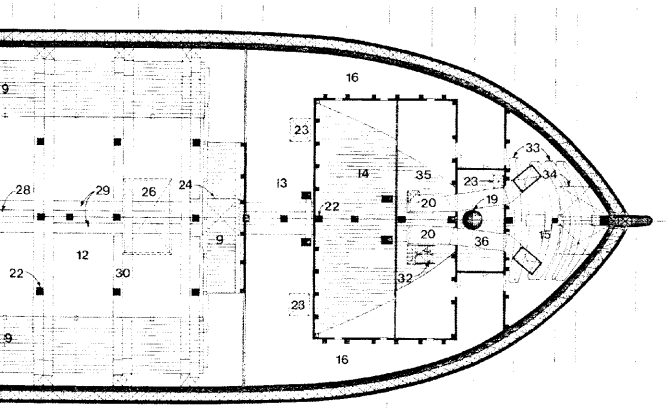
1 Bread room (aft peak)
2 Carpenter's walk
3 Steward's room
4 Purser's cabin
5 Purser's store
6 Marines' clothes store
7 Steward's cabin
8 Midshipmen's berth
9 Passage
10 Dispensary
11 Surgeon's cabin
12 Captain's store
13 Lieutenant's store
14 Hanging magazine
15 Lobby
16 Light box
17 Pump room
18 Cockpit
19 Sail room
20 Cable tier
21 Boatswain's cabin
22 Boatswain's store
23 Sail room
24 Fore peak
25 Carpenter's cabin
26 Carpenter's store
27 Lobby
28 Gunner's store
29 Grating
30 Vent trunk
31 Scuttle
32 Pillar
33 Riders
34 Reverse hanging knee
35 Mizzen mast
36 Companionway
37 Hatch to flour stowage
38 Hatch to spirit room
39 Main mast
40 Main hatch
41 Riding bitts
42 Scuttle to main magazine
44 Rack
45 Locker

A General arrangements

A11 HOLD (1/192 scale)

1 Lady's hole
2 Aft peak
3 Wing space
4 Light space
5 Flour stowage
6 Access space
7 Aft powder room
8 Spirit room
9 Platform
10 Aft hold
11 Hold well (note pump tubes)
12 Main hold
13 Store room
14 Grand magazine
15 Fore peak
16 Wing space
17 Mizzen mast
18 Main mast (note mast step)
19 Fore mast
20 Vent trunks
21 Crutches
22 Pillar
23 Scuttle over
24 Hatch over
25 Stern knee
26 Hanging magazine over
27 Main hatch over
28 Kelson
29 Limber board
30 Riders (8 sets)
31 Shot locker
32 Ladder
33 Breast hooks
34 Gratings over
35 Filling room
36 Light room




16
23
33
34
14
35
23
13
22
20
19
20
36
15
32
23
16
28
29
26
24
9
12
22
30
9
(D)
(F)
B
D
F
H
K
M
O
Q
S
U
X
Z
E
F.P.

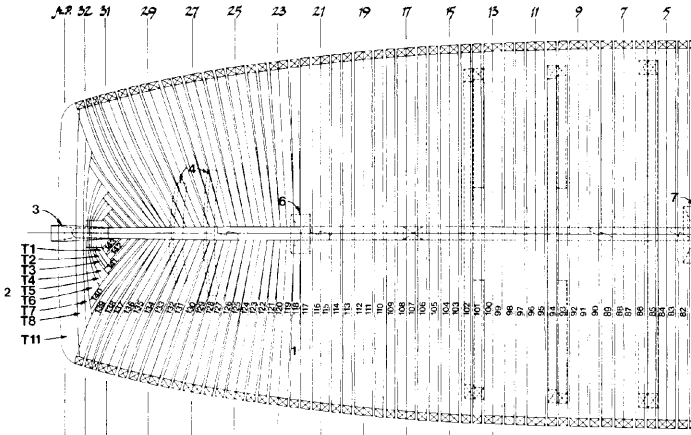
B Hull construction

B1 FRAMING (1/192 scale)

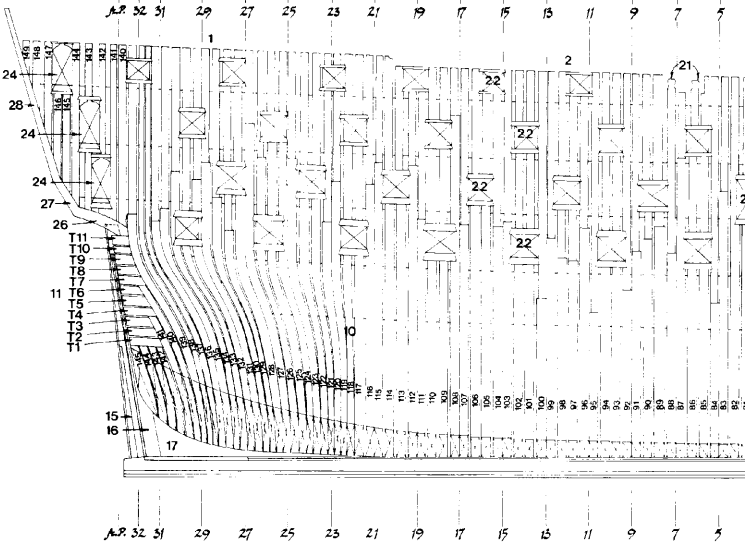
B1/1 Plan view of framing

1 Frames:
Numbers 1 to 6 hawse pieces
Numbers 7 to 24 cant frames (bows)
Numbers 25 to 117 square frames
Numbers 118 to 139 cant frames (stern)
Numbers 140 to 143 fashion and filling pieces
2 Transoms – T1 to T11
3 Stern post
4 Crutches
5 Kelson (note scarphs)
6 Step of the mizzen mast
7 Step of the main mast
8 Step of the fore mast
9 Riders (8 sets)
10 Breast hooks
11 Stemson
12 Apron
13 Stem
14 Stem piece
15 Cutwater

B1/1

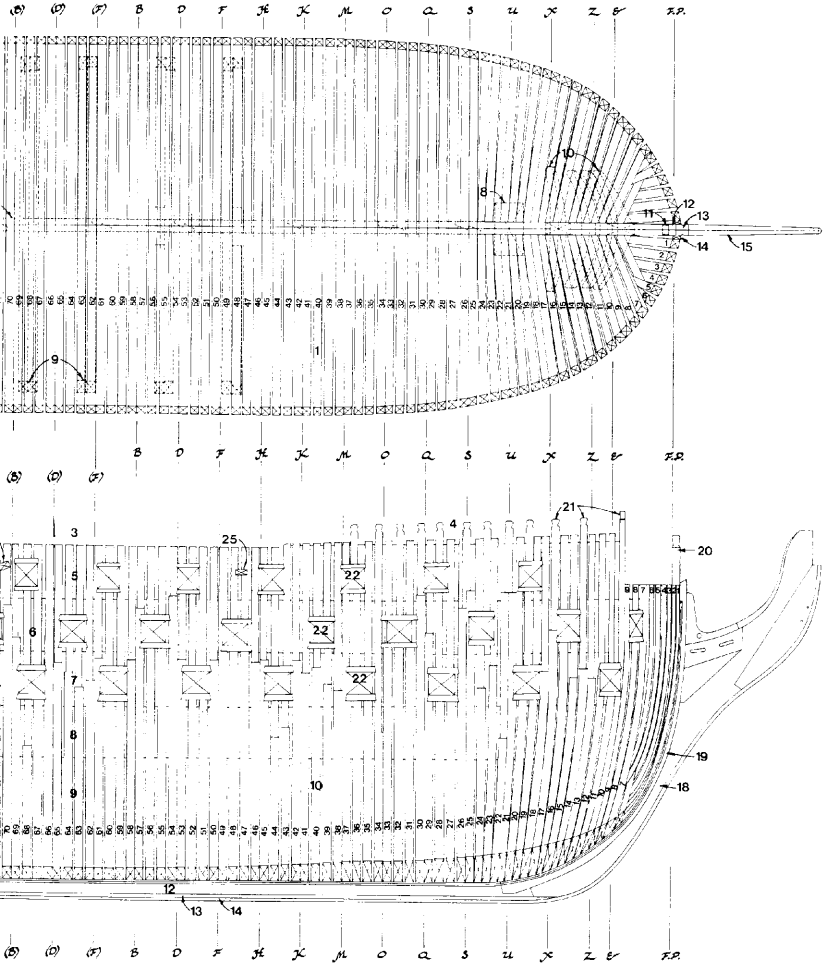


B1/2



B1/2 Profile view of framing

1 Poop deck
2 Quarterdeck
3 Boat booms (waist)
4 Forecastle
5 Upper deck
6 Middle deck
7 Lower deck
8 Orlop deck
9 Hold
10 Frames
11 Transoms (T1 to T11)
12 Keel
13 False keel
14 Sole plate
15 Stern post
16 Inner post
17 Deadwood
18 Cutwater
19 Stem
20 Knighthead (hawse piece number 1)
21 Timber heads
22 Gunports
23 Entry port
24 Doors to quarter galleries
25 Openings for sheaves
26 Lower counter timber
27 Upper counter timber
28 Stern timber


(B) (D) (F) B D F H K M O Q S U X Z E F.P.
8
10
11
12
13
14
15
9
1
B D F H K M O Q S U X Z E F.P.
(B) (D) (F)
3
4
21
25
20
5
22
6
7
8
9
10
19
18
12
13
14
(B) (D) (F) B D F H K M O Q S U X Z E F.P.

B Hull construction

B2 KEEL, STEM AND STERN POST (1/192 scale)

B2/1 Stern view (stern post)
1 Keel
2 Stem post

B2/2 Keel elevation
1 Keel (21in × 21in)
2 False keel (6in thick)
3 Sole plate (4in thick)
4 Vertical scarphs (7 in number)
5 Square frames (over keel – 92 in number)
6 Deadwood forward (for cant frames – 18 in number)
7 Deadwood aft (for cant frames – 20 in number, with 6 filling pieces)
8 Kelson, or Keelson (20in × 20in)
9 Vertical scarph (10 in number)
10 Horizontal scarph
11 Line of limber passage
12 Rabbet
13 Stern post
14 Inner stern post
15 Copper fish plates (3/4in thick)
16 Transoms (1 to 11)
17 Sternson knee
18 Bearding line
19 Boxing
20 Stem
21 Apron
22 Sternson
23 Gripe
24 Knee of the head (lacing)
25 Main piece (note bobstay holes)
26 Chock piece
27 Gammoning piece (note gammoning slots)
28 Gammoning knee (note hole for main stay collar)
29 Gammoning knee extension piece

B2/3 Keel plan
1 Keel (note taper at fore and aft ends)
2 Vertical scarphs
3 Stern post
4 Stem (note rabbet)
5 Apron
6 Sternson
7 Cutwater

B2/4 Bow view (stem)

B3 STERN TRANSOMS (1/192 scale)

B3/1 Transom number 1

B3/2 Transom number 2

B3/3 Transom number 3

B3/3 Transom number 3

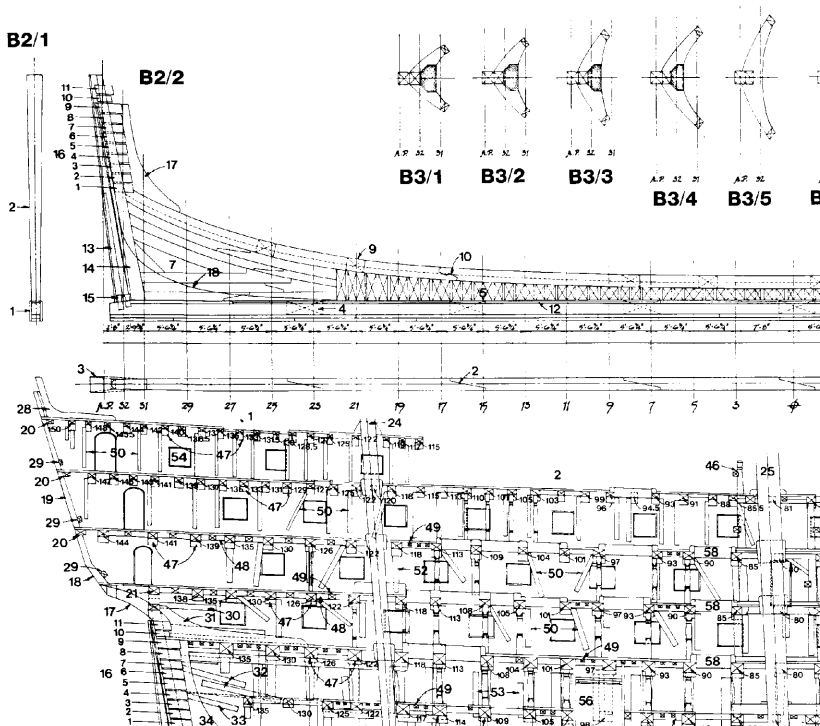
B3/4 Transom number 4

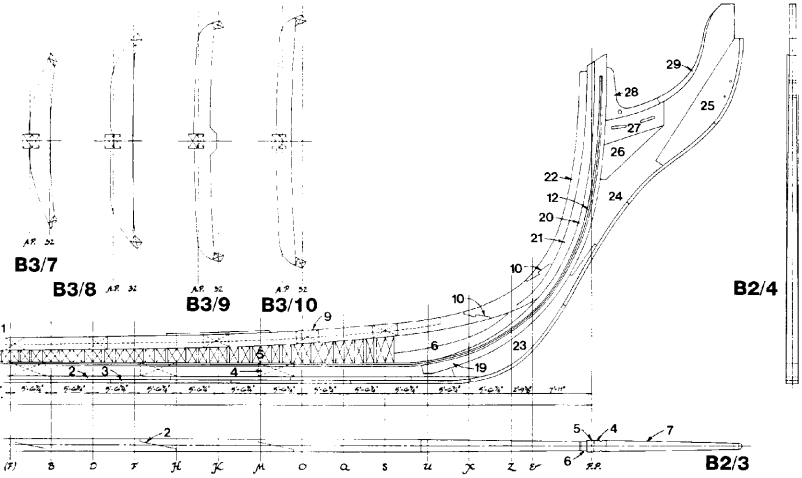
B3/5 Transom number 5

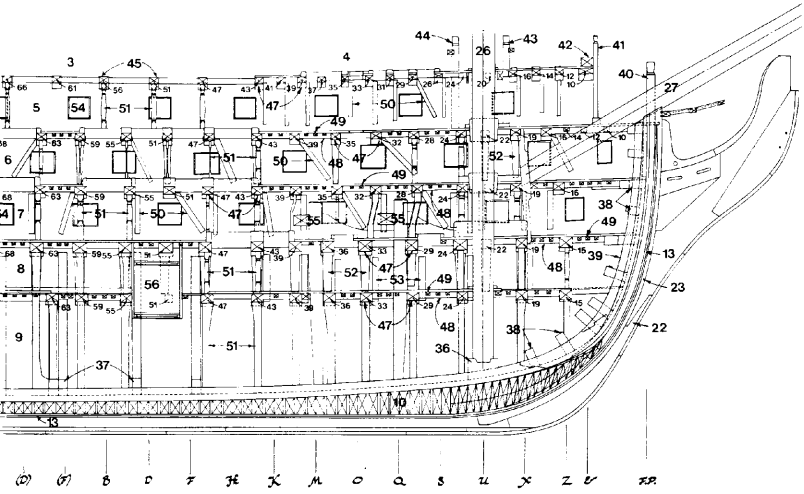
B3/6 Transom number 6

B3/7 Transom number 7

B3/8 Transom number 8







B3/9 Transom number 9

B3/10 Transom number 10

B3/11 Transom number 11 (wing transom)

B4 INBOARD PROFILE: FRAMING (1/192 scale)

1 Poop deck
2 Quarterdeck
3 Boat booms (waist)
4 Forecastle
5 Upper deck
6 Middle deck
7 Lower deck
8 Orlop deck
9 Hold
10 Frames
11 Keel
12 Bearding line
13 Rabbet
14 Kelson
15 Stern post
16 Transoms (1 to 11)
17 Lower counter timber
18 Upper counter timber
19 Stern timber
20 Deck transom
21 Transom
22 Cutwater
23 Stem
24 Mizzen mast
25 Main mast
26 Fore mast
27 Bowsprit
28 Transom knee
29 Tie beam
30 Lodging knee
31 Lower transom knee
32 Quarter knees
33 Stern knee
34 Sternson knee
35 Crutches
36 Mast step
37 Riders (8 sets)
38 Breast hooks
39 Sternson
40 Knighthead
41 Beakhead bulkhead timber
42 Cat tail
43 Fore topsail sheet bitts
44 Main top bowline bitts
45 Skid beams
46 Fore brace bitts
47 Deck beams (numbers correspond to adjacent frames)
48 Fore and aft carlings
49 Athwartships carling
50 Hanging knee (note offset in way of ports)
51 Pillar
52 Chock
53 Reverse knee
54 Gunport
55 Riding bitts
56 Hanging magazine
57 Main hatch
58 Aft hatch

B Hull construction

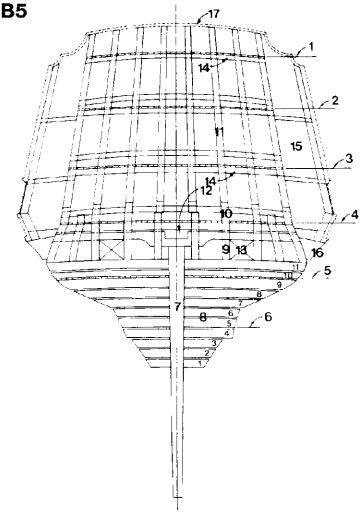
B5 STERN FRAMING (1/192 scale)

1 Poop deck
2 Quarterdeck
3 Upper deck
4 Middle deck
5 Lower deck
6 Orlop deck
7 Stern post
8 Transoms
9 Lower counter timber
10 Upper counter timber
11 Stern timber
12 Open for tiller
13 Open for port
14 Deck transoms
15 Stern galleries
16 Lower gallery support
17 Taffrail

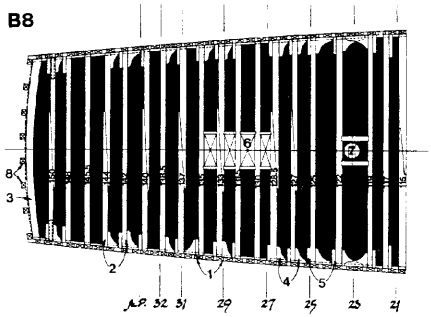
B6 QUARTER GALLERIES (1/192 scale)

1 Poop deck
2 Quarterdeck
3 Upper deck
4 Middle deck
5 Lower deck
6 Orlop deck
7 Gallery deck
8 Keel
9 Stern post
10 Lower gallery support
11 Lower counter timber (beyond)
12 Upper counter timber (beyond)
13 Stern timber
14 Open for window

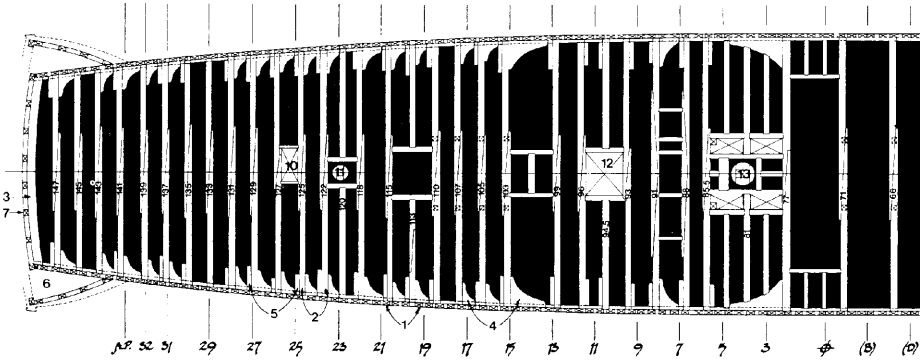
B5



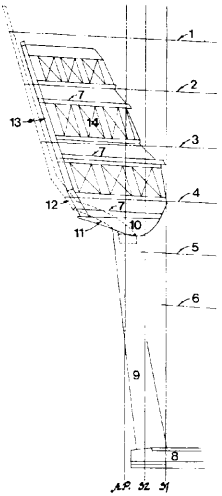
B8



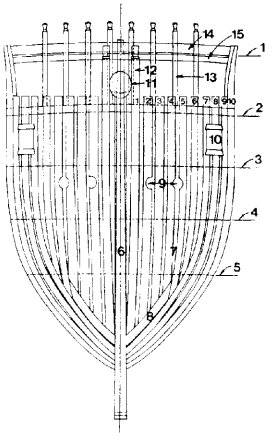
B9

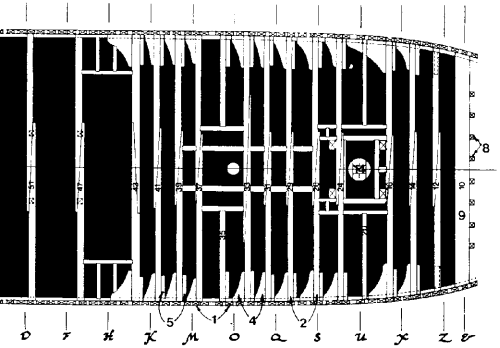


B6



B7





B7 BOW FRAMING (1/192 scale)

1 Forecastle deck
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck
6 Cutwater
7 Frames (1 to 6 are hawse pieces)
8 Filling piece
9 Hawse holes
10 Gunport
11 Bowsprit
12 Knighthead
13 Beakhead bulkhead timbers (note timber heads)
14 Cat tail
15 Cat beam

B8 POOP DECK FRAMING PLAN (1/192 scale)

1 Frames
2 Deck beams – mean dimensions 9in wide by 6in deep approximately (numbers correspond to adjacent frame numbers)
3 Deck transom
4 Lodging knee
5 Hanging knee
6 Open for skylight
7 Mizzen mast
8 Stern timber

B9 QUARTERDECK FRAMING PLAN (1/192 scale)

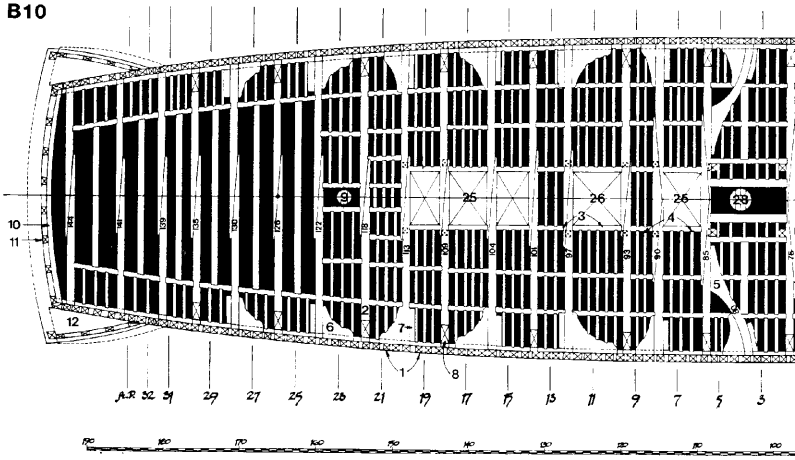
1 Frames
2 Deck beams – mean dimensions 10in wide by 8in deep approximately (numbers correspond to adjacent frame numbers)
3 Deck transom
4 Lodging knee
5 Hanging knee
6 Quarter gallery
7 Stern timber
8 Beakhead bulkhead timbers
9 Cat beam
10 Open for companionway
11 Mizzen mast
12 Open for main companionway
13 Main mast
14 Fore mast

B Hull construction

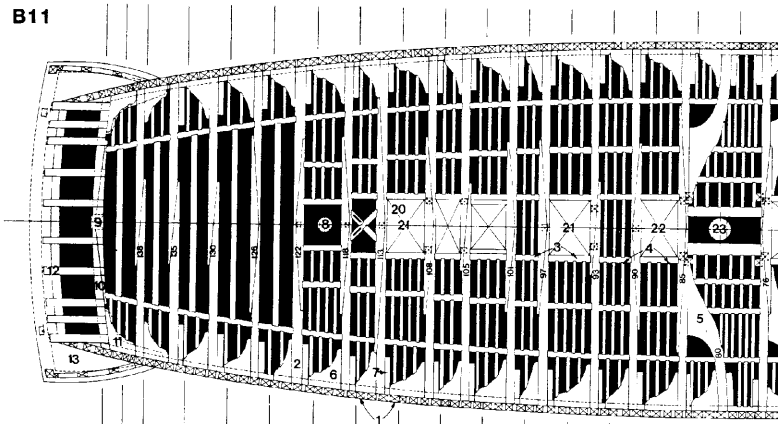
B10 UPPER DECK FRAMING PLAN (1/192 scale)

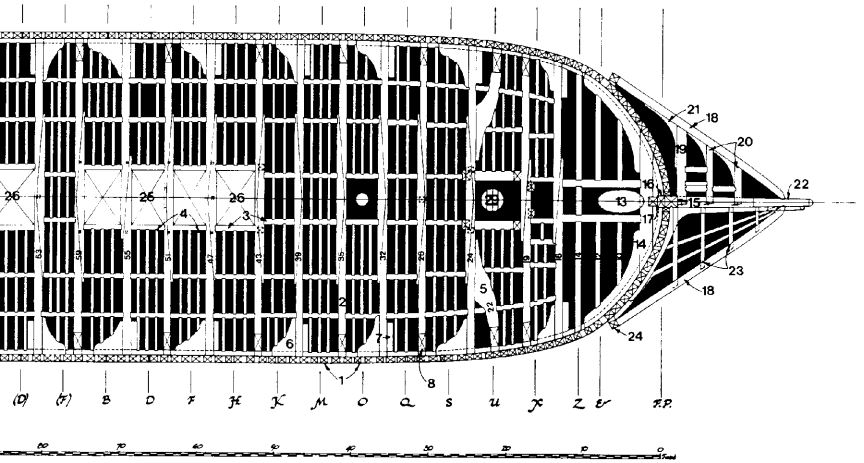
1 Frames
2 Deck beams – mean dimensions 12in wide by 10in deep approximately (numbers correspond to adjacent frame numbers)
3 Fore and aft carlings – mean dimensions 8in wide by 7in deep approximately
4 Athwartship carlings – mean dimensions 4½in wide by 4in deep approximately
5 Shaped half beams
6 Lodging knee
7 Hanging knee
8 Chock (under beam)
9 Mizzen mast
10 Deck transom
11 Stern timber
12 Quarter gallery
13 Bowsprit
14 Breast hook
15 Stem
16 Apron
17 Stemson
18 Main rail
19 Head beam
20 Cross beam
21 Knee
22 Cutwater
23 Head timbers (with middle and lower rails)
24 Head of main rail
25 Open for grating
26 Open for companionway
27 Main hatch
28 Main mast
29 Fore mast

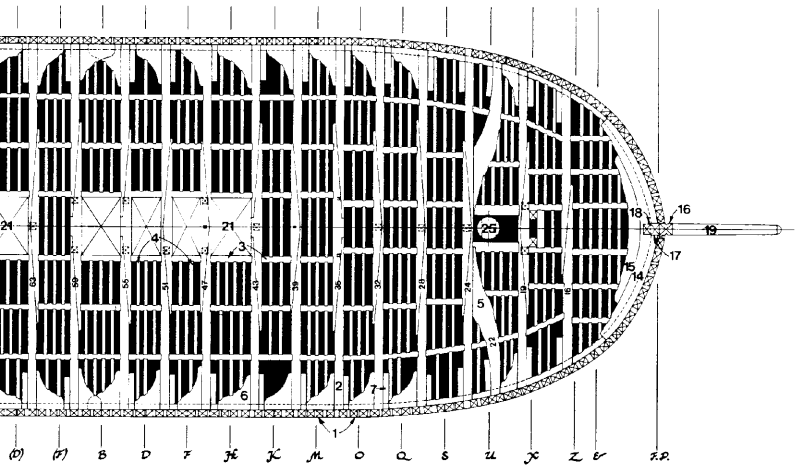
B10



B11







B11 MIDDLE DECK FRAMING PLAN (1/192 scale)

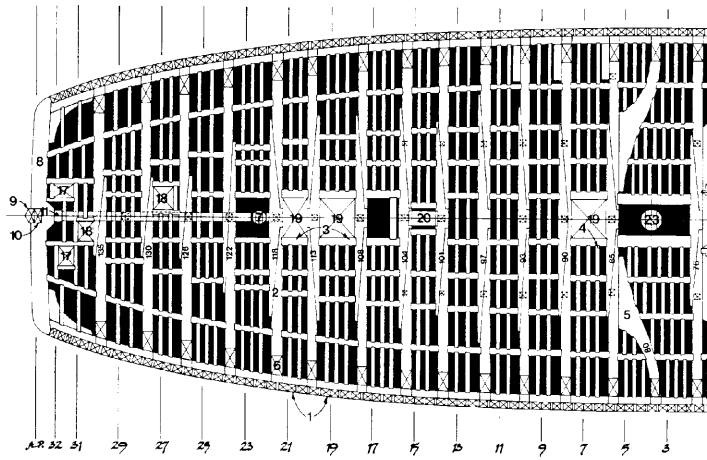
1 Frames
2 Deck beams – mean dimensions 14in wide by 12in deep approximately (numbers correspond to adjacent frame numbers)
3 Fore and aft carlings – mean dimensions 10in wide by 8in deep approximately
4 Athwartship carlings – mean dimensions 5in wide by 4in deep approximately
5 Shaped half beams
6 Lodging knee
7 Hanging knee
8 Mizzen mast
9 Stern post
10 Transom
11 Transom knee
12 Lower counter timbers
13 Quarter galleries
14 Breast hook
15 Breast hook knee
16 Stem
17 Apron
18 Stemson
19 Cutwater
20 Cross members for tiller rope sheaves
21 Open for companionway
22 Aft hatch
23 Main mast
24 Main hatch
25 Fore mast

B Hull construction

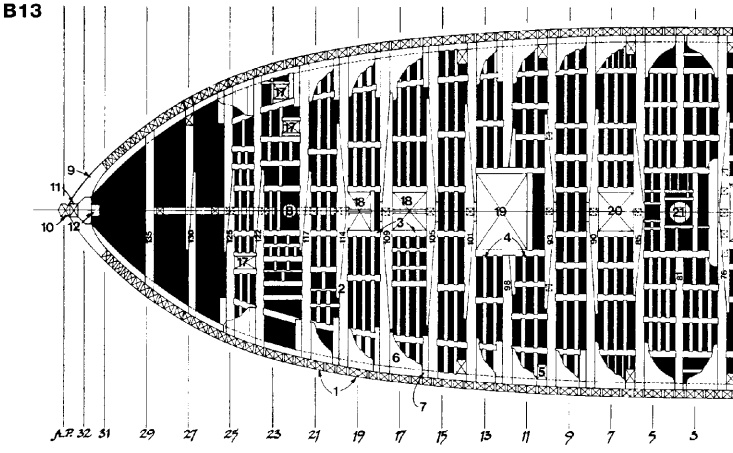
B12 LOWER DECK FRAMING PLAN (1/192 scale)

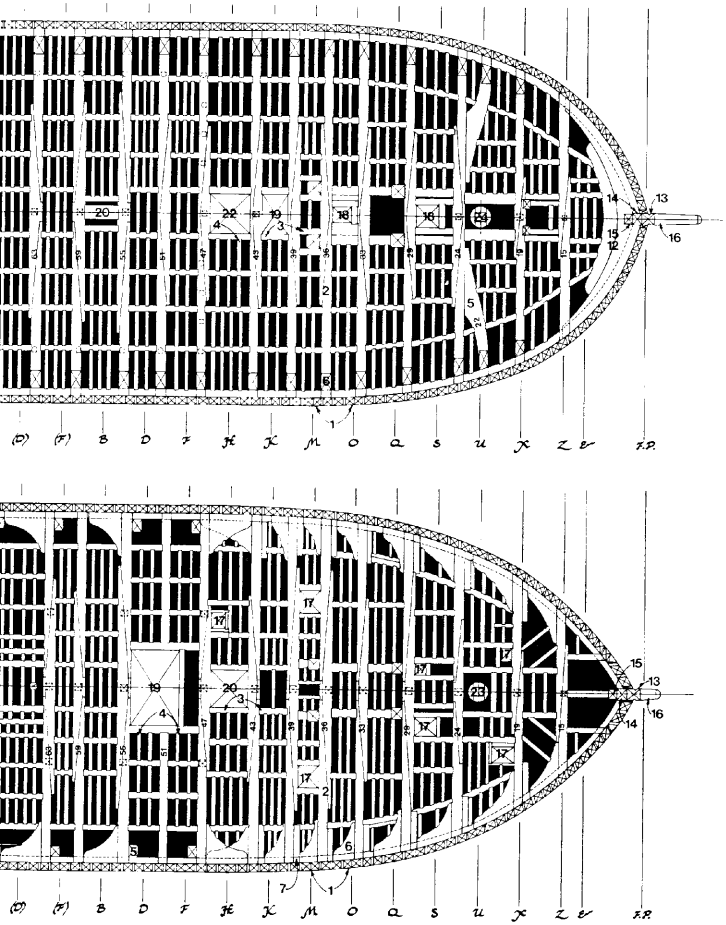
1. Frames
2. Deck beams – mean dimensions 15in wide by 16½in deep approximately (numbers correspond to adjacent frame numbers)
3. Fore and aft carlings – mean dimensions 10in wide by 8in deep approximately
4. Athwartship carlings – mean dimensions 6in wide by 5in deep approximately
5. Shaped half beams
6. Chock (under beam)
7. Mizzen mast
8. Transom number 9
9. Stern post
10. Inner stern post
11. Sternson knee
12. Breast hook
13. Stem
14. Apron
15. Stemson
16. Cutwater
17. Open for vent trunk
18. Open for scuttle
19. Open for companionway
20. Capstan support
21. Main hatch
22. Open for grating
23. Main mast
24. Fore mast

B12



B13





B13 ORLOP DECK FRAMING PLAN (1/192 scale)

1. Frames
2. Deck beams – mean dimensions 15in wide by 14in deep approximately (numbers correspond to adjacent frame numbers)
3. Fore and aft carlings – mean dimensions 10in wide by 8in deep approximately
4. Athwartship carlings – mean dimensions 6in wide by 4in deep approximately
5. Riders
6. Lodging knee
7. Reverse hanging knee
8. Mizzen mast
9. Transom number 4
10. Stern post
11. Inner stern post
12. Sternson knee
13. Stem
14. Apron
15. Sternson
16. Cutwater
17. Open for scuttle
18. Hatch
19. Open for hanging magazine
20. Open for grating
21. Main mast
22. Main hatch
23. Fore mast

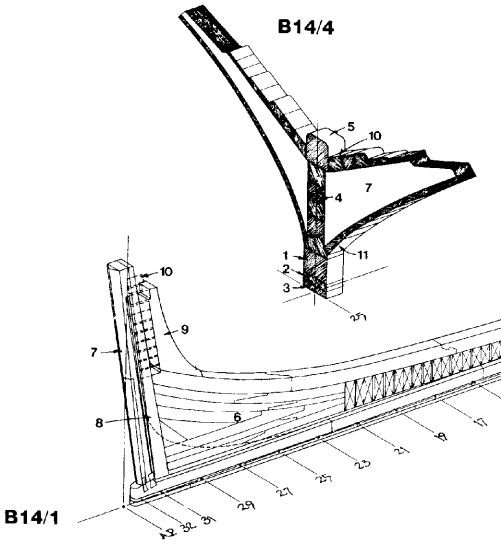
B14 ISOMETRIC SHOWING KEEL CONSTRUCTION (no scale)

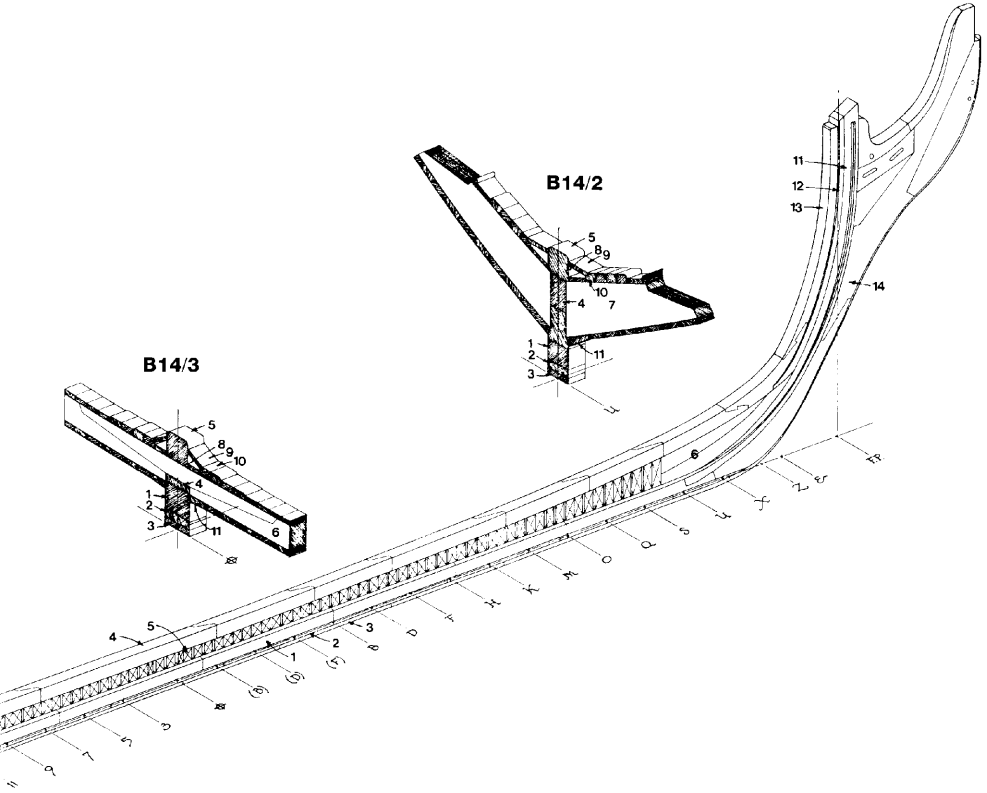
B14/1 Keel, stem and stern post
1 Keel
2 False keel
3 Sole plate
4 Kelson (note scarphs)
5 Frames
6 Deadwood
7 Stern post
8 Inner stern post
9 Sternson knee
10 Location of transoms
11 Sterns
12 Apron
13 Stemson
14 Cutwater

B14/2 Detail at Station 'U'

B14/3 Detail at Station ⊕

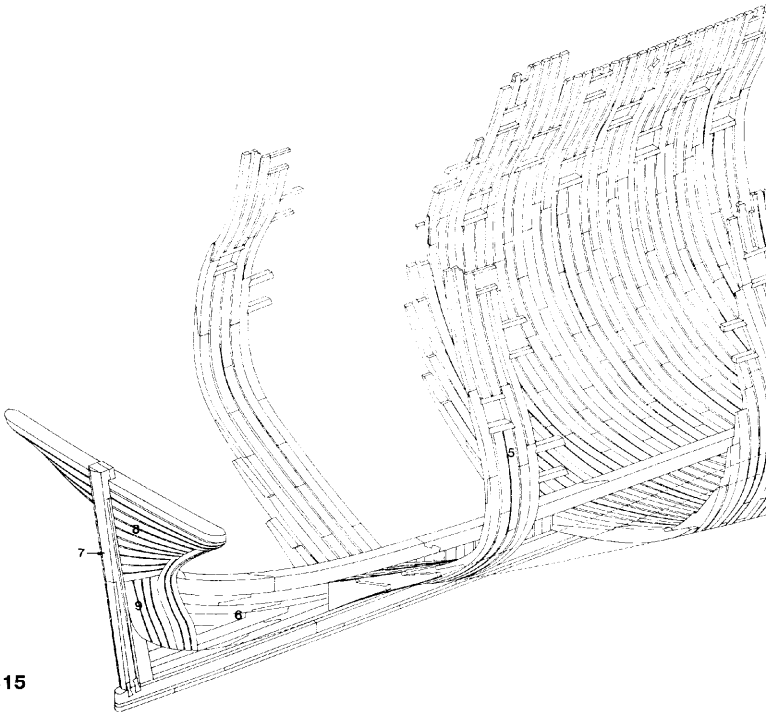
B14/4 Detail at Station '25'
1 Keel
2 False keel
3 Sole plate
4 Deadwood
5 Kelson
6 Frame (floor)
7 Cant frame (first futtock)
8 Limber passage
9 Limber strake
10 Limber board
11 Garboard strake



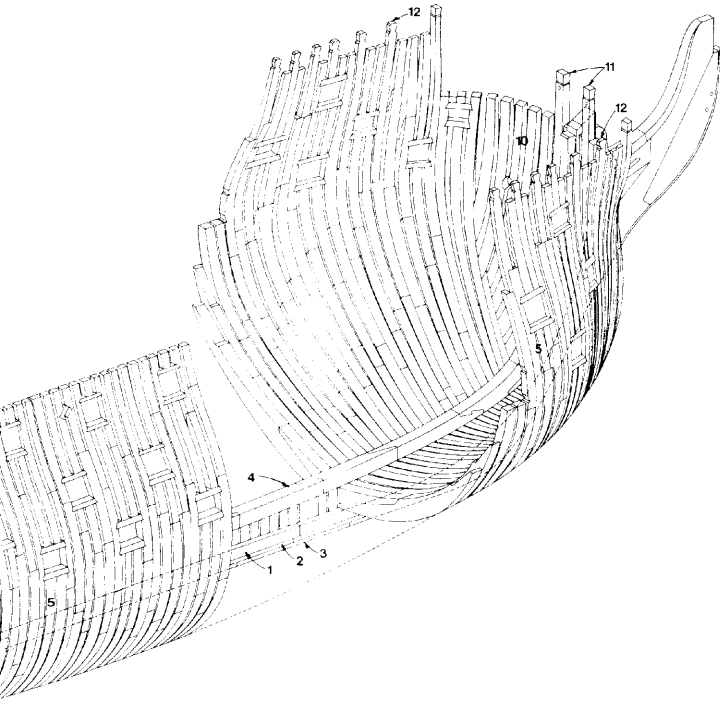

B14/2
B14/3
11
12
13
14
6
4
5
1
2
3
8
9
10
7
11

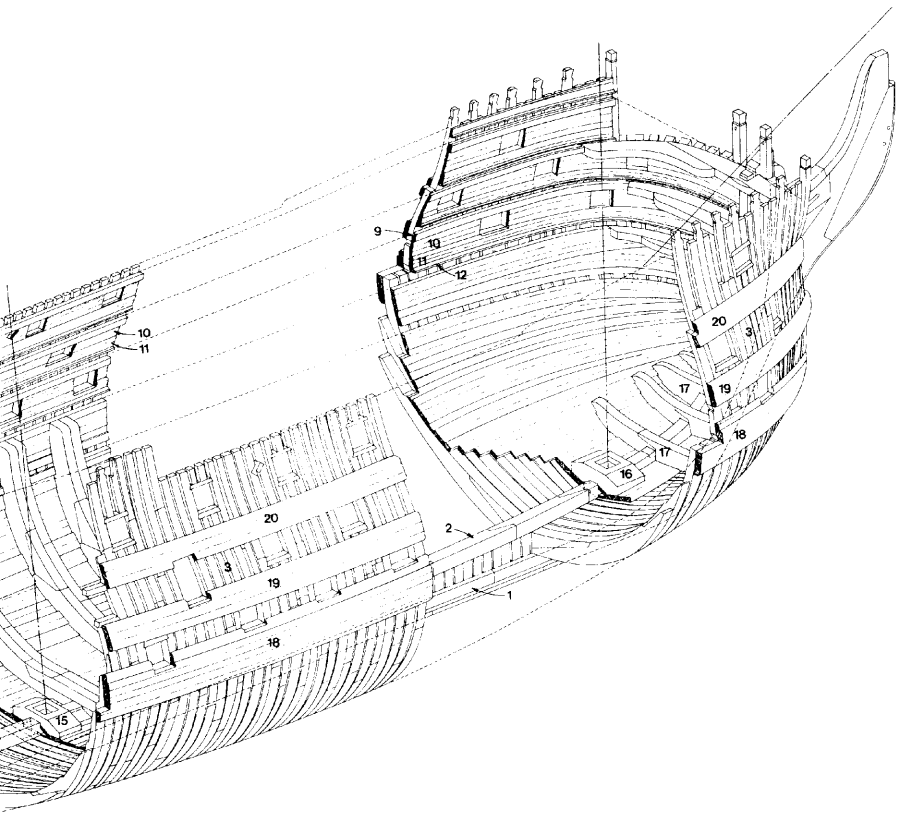
B15 ISOMETRIC SHOWING FRAMING (no scale)

1 Keel
2 False keel
3 Sole plate
4 Kelson
5 Frames
6 Deadwood
7 Stern post
8 Transoms (11 in number)
9 Fashion pieces
10 Hawse pieces
11 Knightheads
12 Timber heads



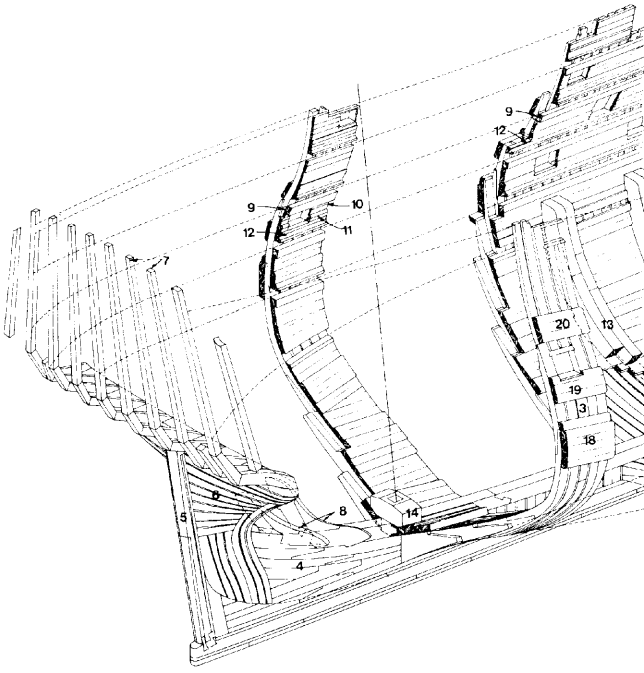
B15

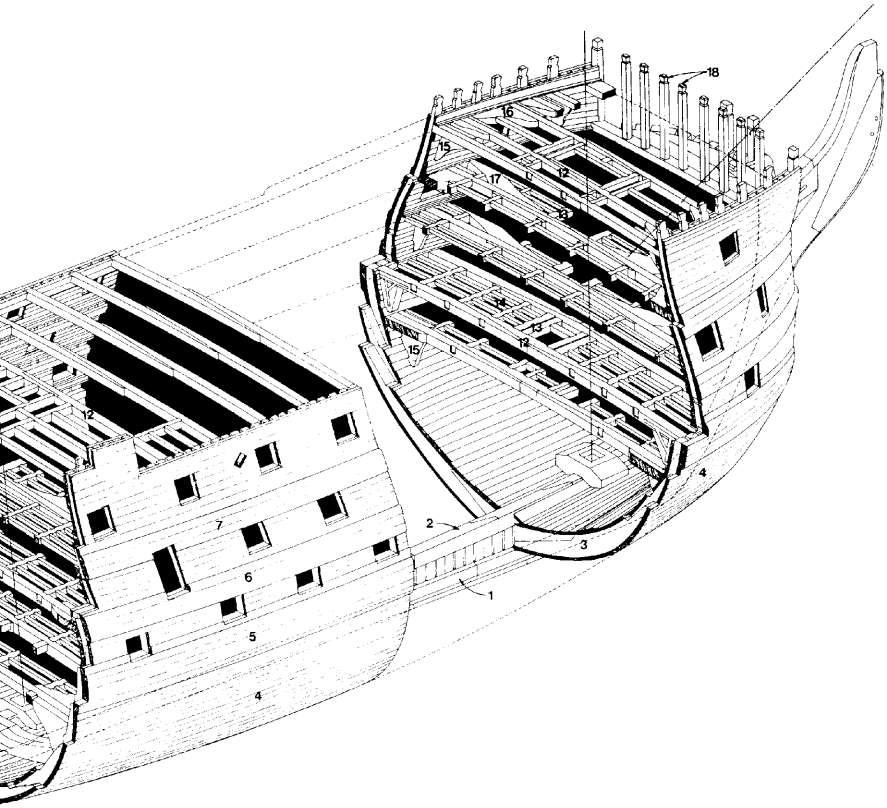

12
11
12
10
5
4
1
2
3
5


9
10
11
12
20
3
17
19
18
16
2
1
15

B16 ISOMETRIC SHOWING WALES AND PLANKING (no scale)

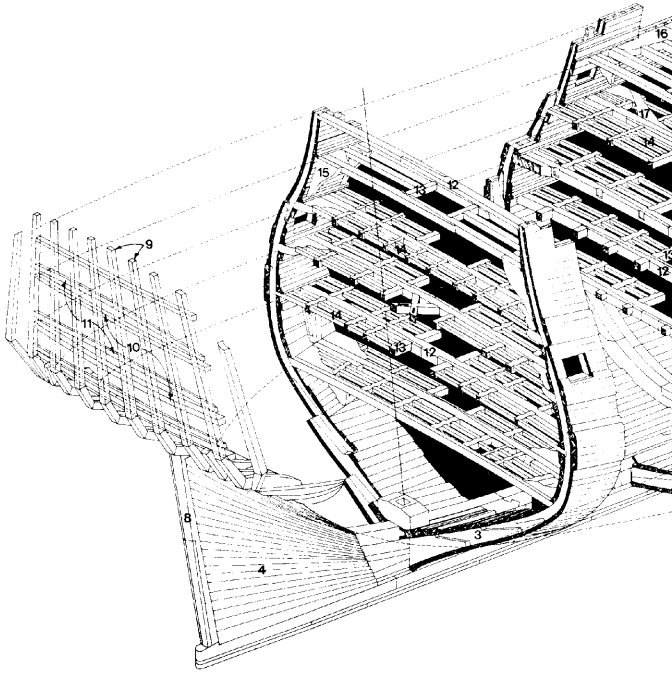
1 Keel
2 Kelson
3 Frames
4 Deadwood
5 Stern post
6 Transoms
7 Stern timbers
8 Crutches
9 Beam shelf
10 Inner lining
11 Stringers
12 Waterway plank
13 Riders
14 Step of mizzen mast
15 Step of main mast
16 Step of fore mast
17 Breast hooks
18 Lower wale
19 Middle wale
20 Upper wale

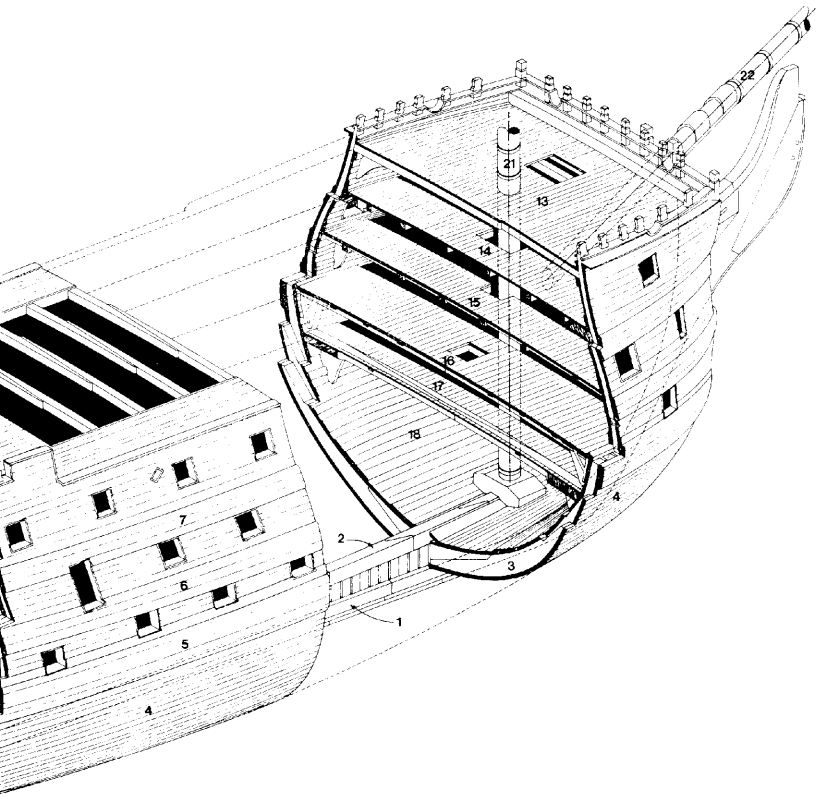



18
16
15
17
12
13
14
15
12
12
7
6
5
4
2
3
1
4

B17 ISOMETRIC SHOWING BEAMS
(no scale)

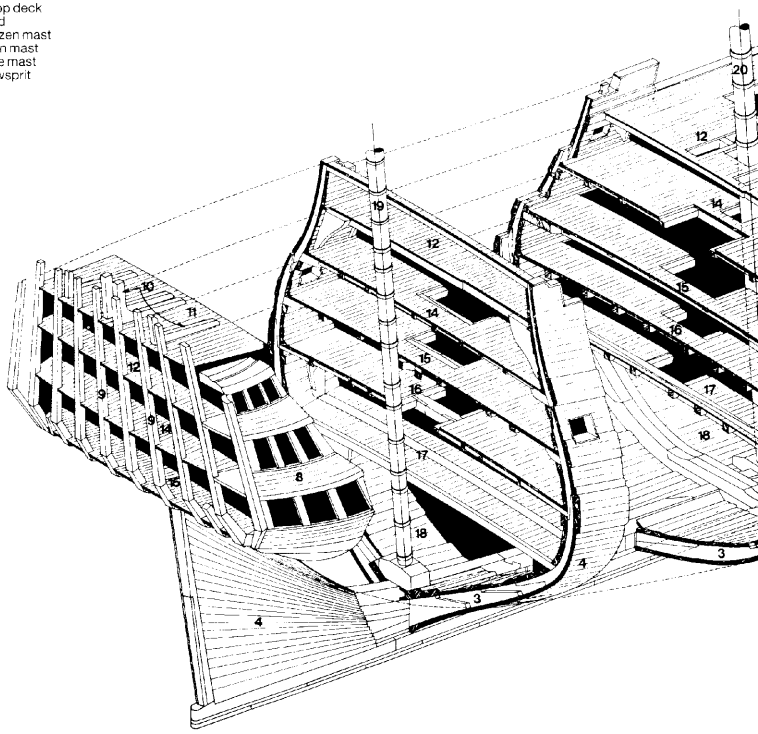
1 Keel
2 Kelson
3 Frames
4 External planking
5 Lower wale
6 Middle wale
7 Upper wale
8 Stern post
9 Stern timbers
10 Deck transoms
11 Tie beams
12 Deck beams
13 Fore and aft carlings
14 Athwartship carlings
15 Hanging knee
16 Lodging knee
17 Shaped half beams
18 Beakhead bulkhead timbers



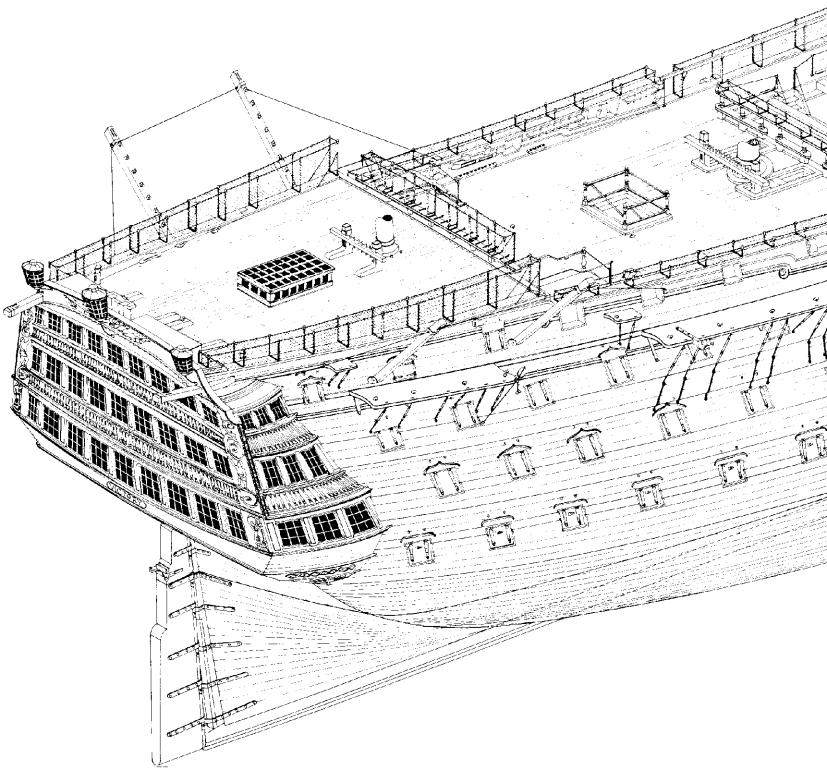

22
21
13
14
15
16
17
18
4
2
3
1
7
6
5
4

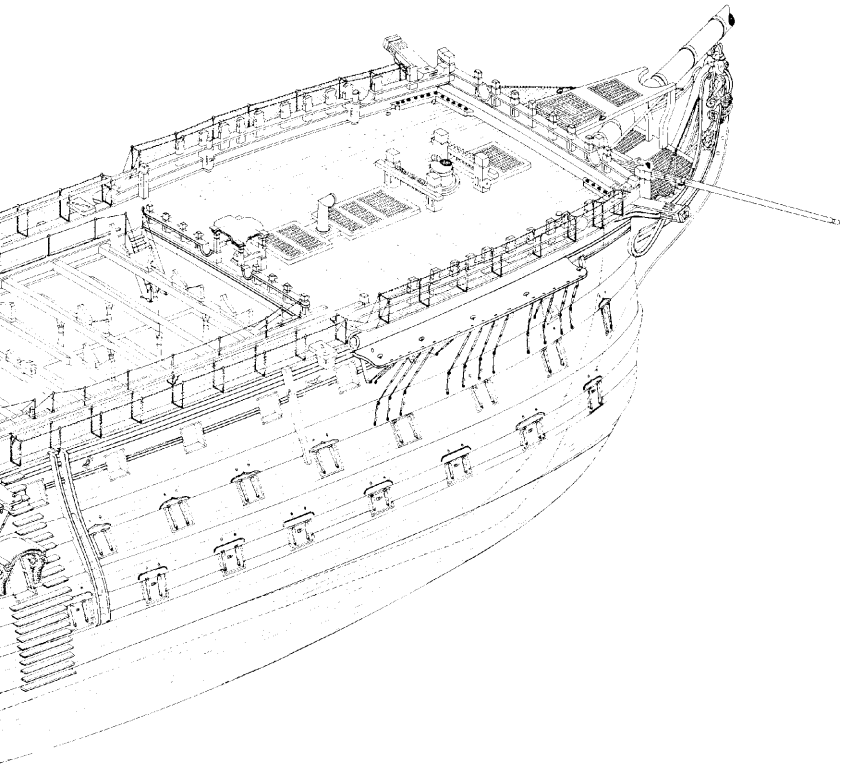
B18 ISOMETRIC SHOWING DECKS (no scale)

1 Keel
2 Kelson
3 Frames
4 External planking
5 Lower wale
6 Middle wale
7 Upper wale
8 Quarter galleries
9 Stern timbers
10 Transom knees
11 Poop deck
12 Quarterdeck
13 Forecastle
14 Upper deck
15 Middle deck
16 Lower deck
17 Orlop deck
18 Hold
19 Mizzen mast
20 Main mast
21 Fore mast
22 Bowsprit



B19 ISOMETRIC OF THE COMPLETED HULL
(no scale)

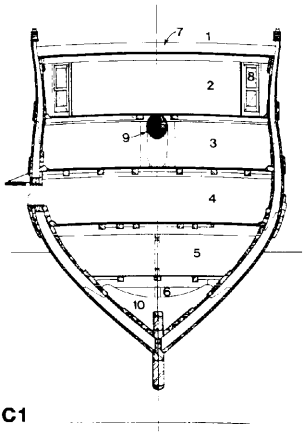




C Sections – internal arrangements

C1 CROSS SECTION AT '&' LOOKING AFT (1/192 scale)

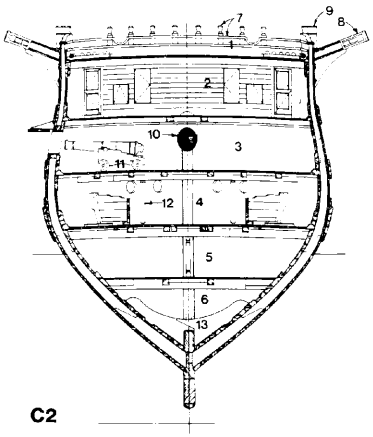
1 Forecastle
2 Upper deck
3 Middle deck (sick bay)
4 Lower deck
5 Orlop deck (fore peak)
6 Hold (fore peak)
7 Cat tail
8 Roundhouse door
9 Bowsprit
10 Breast hook



C1

C2 CROSS SECTION AT 'Z' LOOKING FORWARD (1/192 scale)

1 Forecastle
2 Upper deck (beakhead bulkhead)
3 Middle deck
4 Lower deck (manger)
5 Orlop deck (fore peak)
6 Hold (fore peak)
7 Rail with timber heads
8 Cathead
9 Head of main rail
10 Bowsprit
11 24-pounder gun (long)
12 Roller for messenger
13 Breast hook



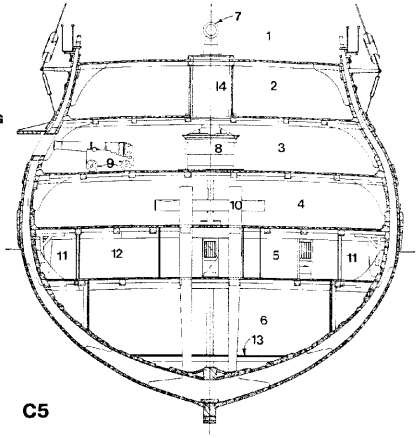
C2

C3 CROSS SECTION AT 'X' LOOKING AFT (1/192 scale)

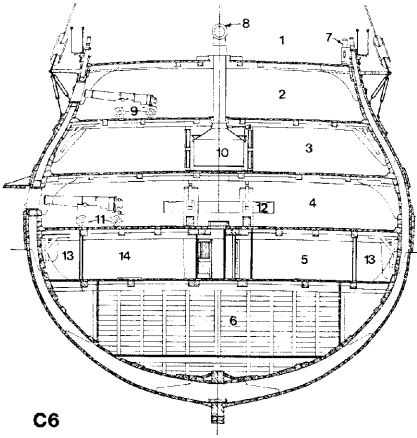
1 Forecastle
2 Upper deck
3 Middle deck (sick bay)
4 Lower deck
5 Orlop deck (fore peak)
6 Hold (fore peak)
7 Kevel
8 Fore topsail sheet bitts
9 68-pounder carronade
10 Fore mast
11 12-pounder gun (long)
12 Bowsprit
13 32-pounder gun (long)
14 Manger
15 Vent trunk

C4 CROSS SECTION AT 'S' LOOKING AFT (1/192 scale)

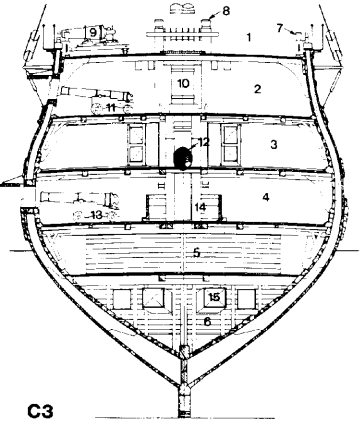
1 Forecastle
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (sail room)
6 Hold (main magazine)
7 12-pounder gun (long)
8 Galley stove
9 32-pounder gun (long)
10 Riding bitts
11 Gunner's store
12 Carpenter's walk
13 Ladder
14 Vent trunk



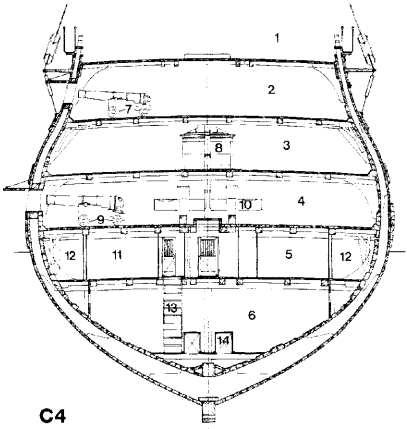
C5



C6



C3



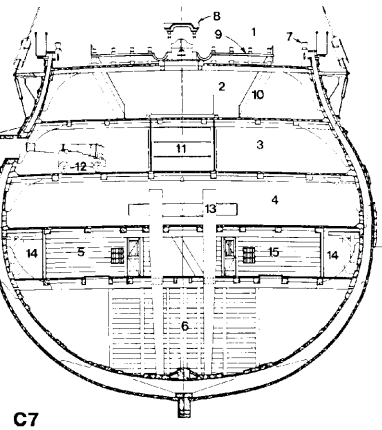
C4

C5 CROSS SECTION AT 'Q' LOOKING AFT (1/192 scale)

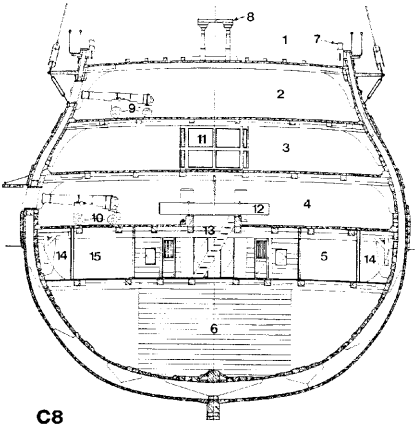
1 Forecastle
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (sail room)
6 Hold (main magazine)
7 Galley stove chimney
8 Galley stove
9 24-pounder gun (long)
10 Fore riding bitts
11 Carpenter's walk
12 Gunner's store
13 Pallating flat
14 Steam trunk

C6 CROSS SECTION AT 'O' LOOKING AFT (1/192 scale)

1 Forecastle
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (boatswain's store)
6 Hold (main magazine)
7 Kevel
8 Galley stove chimney
9 12-pounder gun (long)
10 Galley stove
11 32-pounder gun (long)
12 Riding bitts
13 Carpenter's walk
14 Carpenter's store



C7



C8

C7 CROSS SECTION AT 'M' LOOKING AFT (1/192 scale)

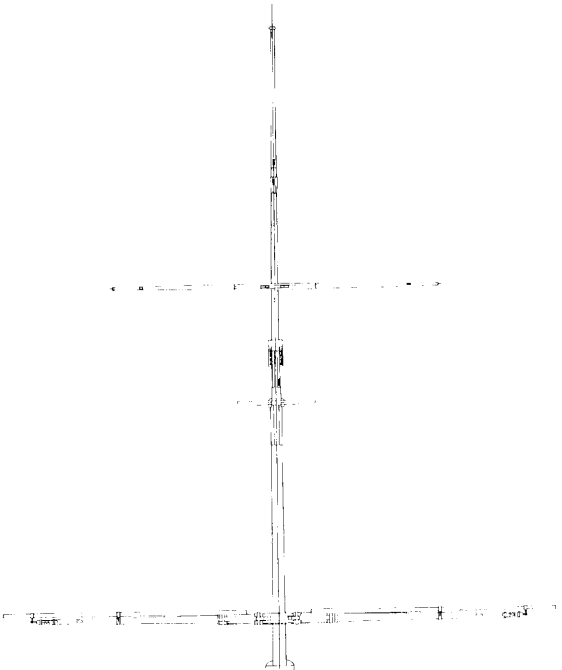
1 Forecastle
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (carpenter's store)
6 Hold
7 Kevel
8 Belfry
9 Rail
10 Ladder
11 Galley
12 24-pounder gun (long)
13 Aft riding bitts
14 Carpenter's walk
15 Boatswain's store

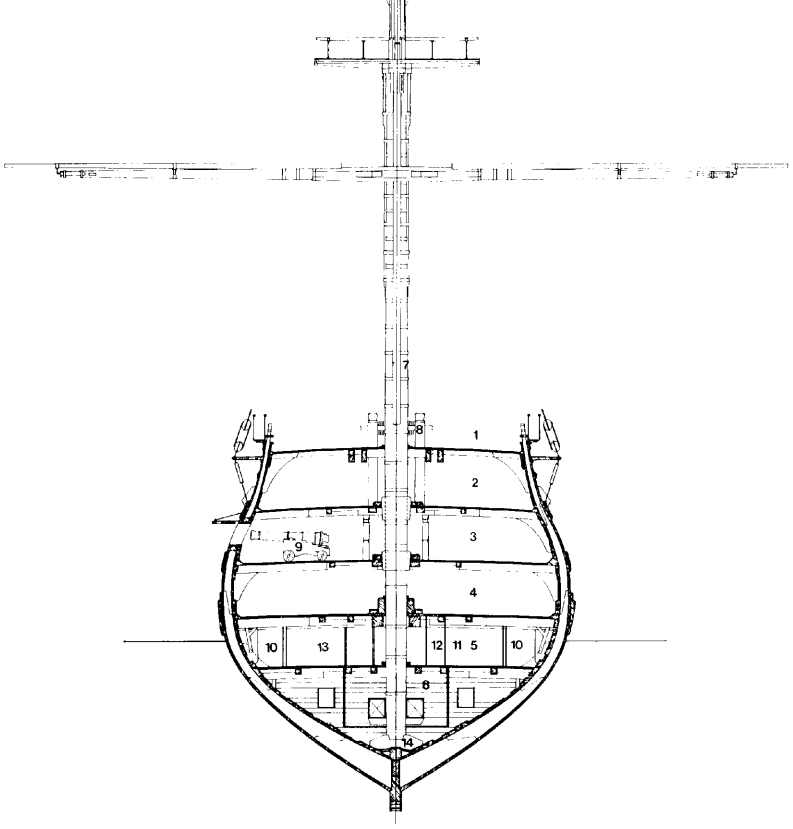
C8 CROSS SECTION AT 'K' LOOKING FORWARD (1/192 scale)

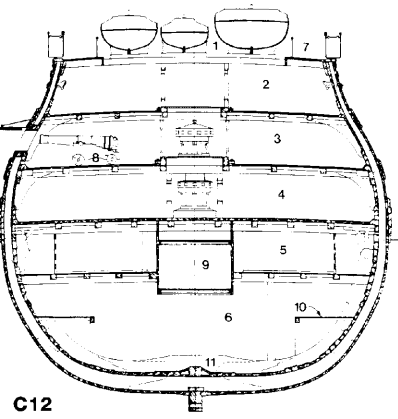
1 Forecastle
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (carpenter's cabin)
6 Hold
7 Kevel
8 Belfry
9 12-pounder gun (long)
10 32-pounder gun (long)
11 Galley
12 Riding bitts
13 Companionway
14 Carpenter's walk
15 Boatswain's cabin

C9 CROSS SECTION AT 'U' (FORE MAST) LOOKING AFT (1/192 scale)

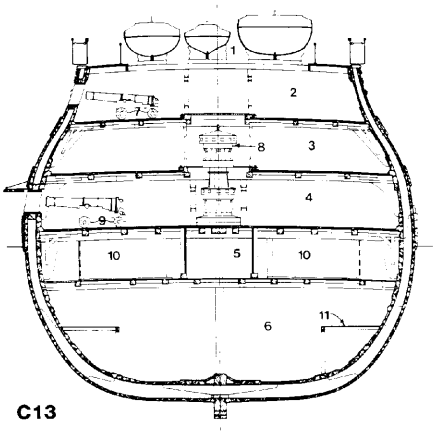
1. Forecastle
2. Upper deck
3. Middle deck
4. Lower deck
5. Orlop deck
6. Hold
7. Fore mast
8. Main top bowline bitts
9. 24-pounder gun (long)
10. Carpenter's walk
11. Sail room
12. Passage
13. Gunner's stores
14. Mast step




7
8
1
2
3
9
4
10
13
12
11
5
10
6
14



C12



C13

C14 CROSS SECTION AT '(F)' LOOKING AFT (1/192 scale)

1 Boat booms (waist)
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (sail room)
6 Hold
7 Gangway
8 Companionway
9 24-pounder gun (long)
10 Cable tier
11 Platform
12 Riders

C15 CROSS SECTION AT '(D)' LOOKING AFT (1/192 scale)

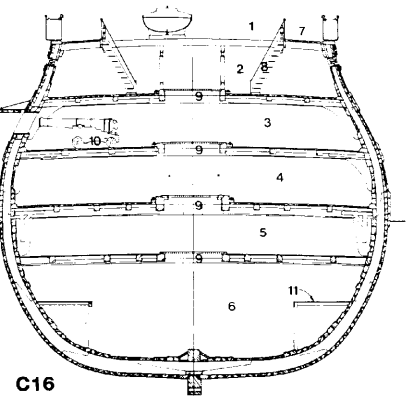
1 Boat booms (waist)
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (sail room)
6 Hold
7 12-pounder gun (long)
8 Companionway
9 32-pounder gun (long)
10 Cable tier
11 Platform
12 Riders

C16 CROSS SECTION AT '(B)' LOOKING AFT (1/192 scale)

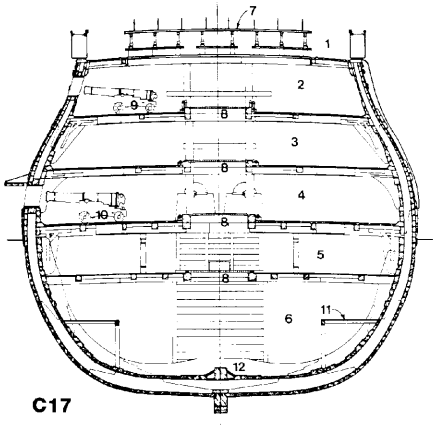
1 Boat booms (waist)
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck
6 Hold
7 Gangway
8 Ladder
9 Main hatch
10 24-pounder gun (long)
11 Platform

C17 CROSS SECTION AT '⊕' LOOKING AFT (1/192 scale)

1 Boat booms (waist)
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck
6 Hold
7 Rail
8 Main hatch
9 12-pounder gun (long)
10 32-pounder gun (long)
11 Platform
12 Riders



C16



C17

C Sections – internal arrangements

C10 CROSS SECTION AT 'H' LOOKING FORWARD (1/192 scale)

1 Boat booms (waist)
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck
6 Hold
7 Belfry
8 Rail
9 Ladder
10 Companionway
11 24-pounder gun (long)
12 Platform

C11 CROSS SECTION AT 'F' LOOKING AFT (1/192 scale)

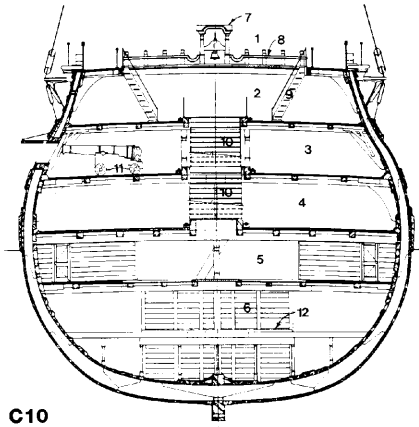
1 Boat booms (waist)
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (cable tier)
6 Hold
7 Gangway
8 34ft launch
9 28ft pinnace
10 32ft barge
11 12-pounder gun (long)
12 Grating
13 32-pounder gun (long)
14 Lobby
15 Light box
16 Platform

C12 CROSS SECTION AT 'D' LOOKING AFT (1/192 scale)

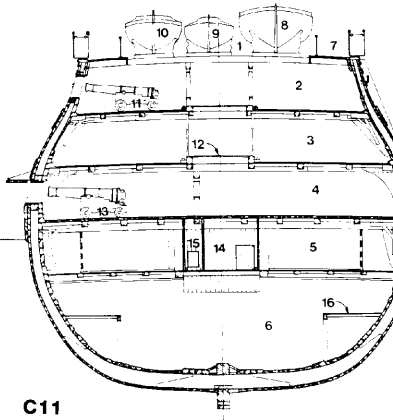
1 Boat booms (waist)
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (cable tier)
6 Hold
7 Gangway
8 24-pounder gun (long)
9 Hanging magazine
10 Platform
11 Riders

C13 CROSS SECTION AT 'B' LOOKING AFT (1/192 scale)

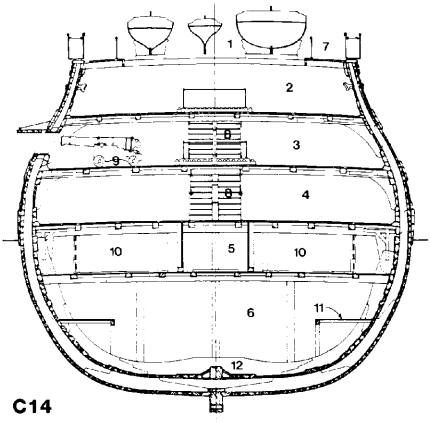
1 Boat booms (waist)
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (sail room)
6 Hold
7 12-pounder gun (long)
8 Fore capstan
9 32-pounder gun (long)
10 Cable tier
11 Platform



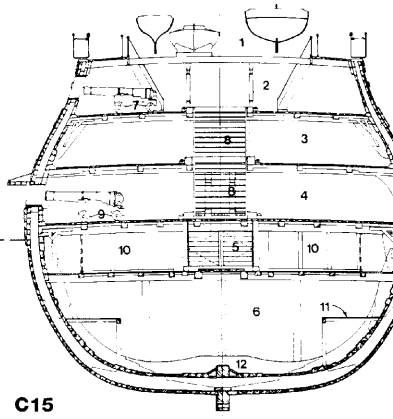
C10



C11



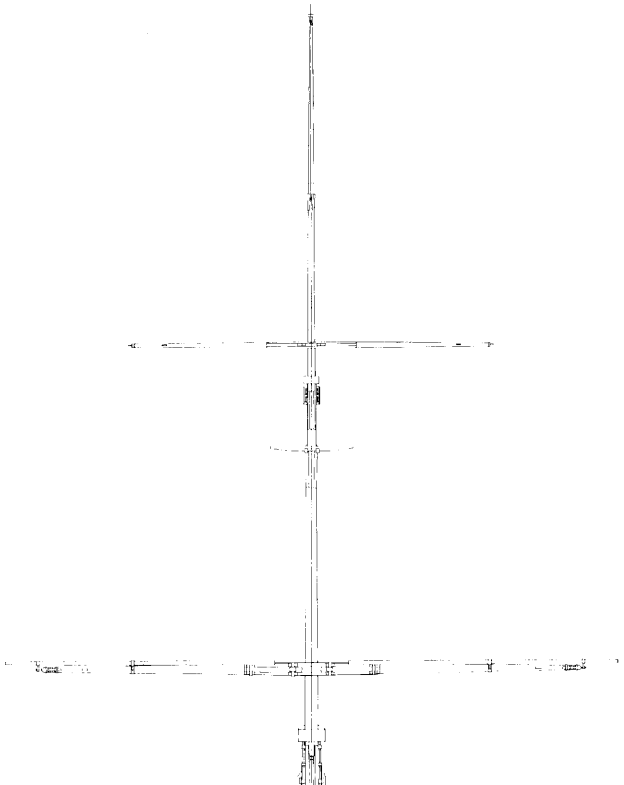
C14

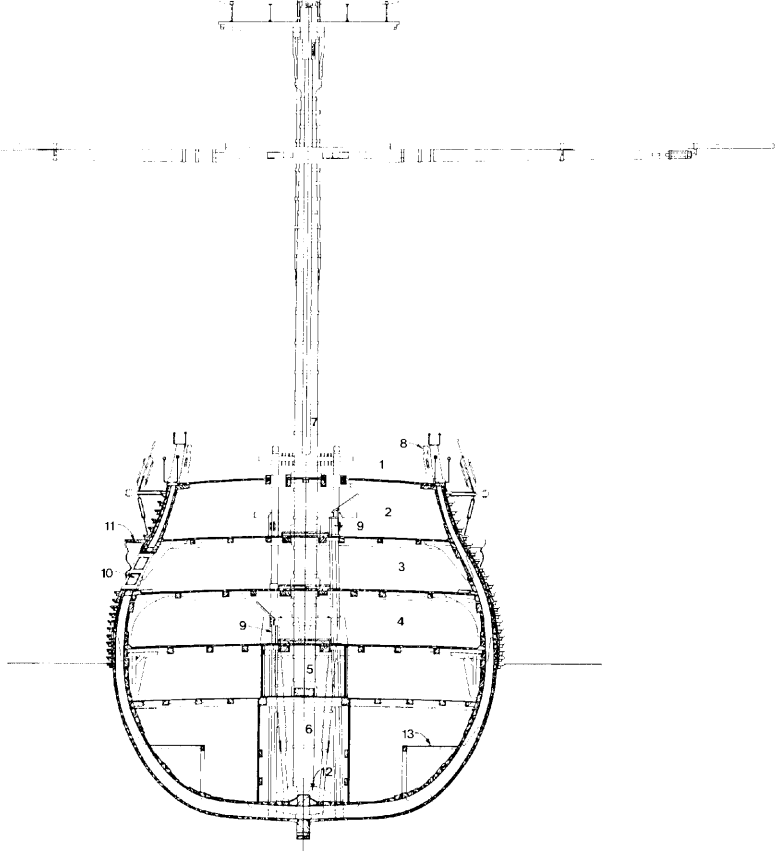


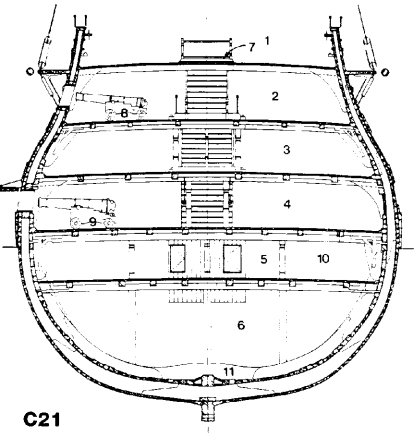
C15

C18 CROSS SECTION AT '3' (MAIN MAST) LOOKING AFT (1/192 scale)

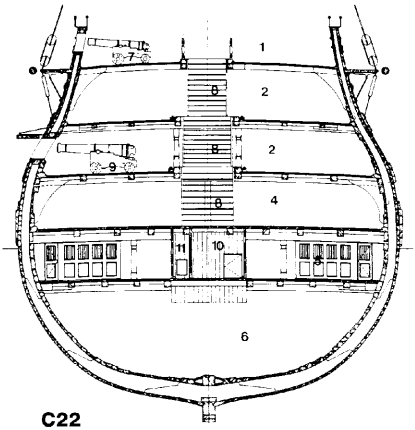
1. Quarterdeck
2. Upper deck
3. Middle deck
4. Lower deck
5. Orlop deck (pump room)
6. Hold (pump well)
7. Main mast
8. Kevel
9. Elm tree pump
10. Entry port
11. Entry port canopy
12. Mast step
13. Platform



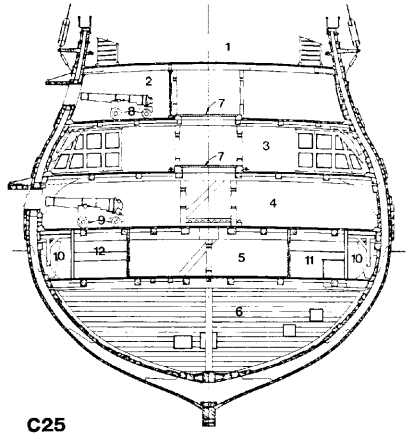

7
8
1
2
9
11
10
3
9
4
5
6
13
12



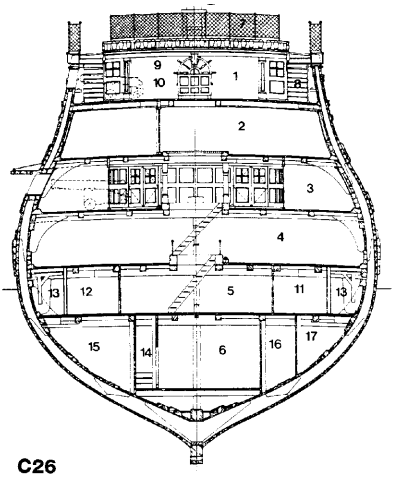
C21



C22



C25



C26

C23 CROSS SECTION AT '13' LOOKING AFT (1/192 scale)

1 Quarterdeck
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck
6 Hold
7 12-pounder gun (long)
8 32-pounder gun (long)
9 Carpenter's walk
10 Steward's cabin
11 Hanging magazine
12 Lieutenant's store
13 Platform
14 Riders

C24 CROSS SECTION AT '15' LOOKING AFT (1/192 scale)

1 Quarterdeck
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck
6 Hold
7 12-pounder gun (short)
8 24-pounder gun (long)
9 Main (jeer) capstan
10 Carpenter's walk
11 Marines' clothes store
12 Captain's store

C25 CROSS SECTION AT '17' LOOKING AFT (1/192 scale)

1 Quarterdeck
2 Upper deck (admiral's sleeping cabin)
3 Middle deck
4 Lower deck
5 Orlop deck
6 Hold (spirit room)
7 Grating
8 12-pounder gun (long)
9 32-pounder gun (long)
10 Carpenter's walk
11 Purser's store
12 Captain's store

C26 CROSS SECTION AT '19' LOOKING AFT (1/192 scale)

1 Quarterdeck
2 Upper deck (admiral's sleeping quarters)
3 Middle deck (officer's cabin)
4 Lower deck
5 Orlop deck
6 Hold (flour storage)
7 Rail (with hammock cranes and netting – note fire buckets)
8 Ladder
9 Steering wheel
10 Binnacle
11 Purser's cabin
12 Captain's store
13 Carpenter's walk
14 Access space
15 Aft powder room
16 Light space
17 Wing space

C Sections – internal arrangements

C19 CROSS SECTION AT '5' LOOKING AFT (1/192 scale)

1 Quarterdeck
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (pump room)
6 Hold (pump well)
7 Fore brace bitts
8 12-pounder gun (long)
9 32-pounder gun (long)
10 Main (bilge) pumps
11 Platform
12 Riders

C20 CROSS SECTION AT '7' LOOKING AFT (1/192 scale)

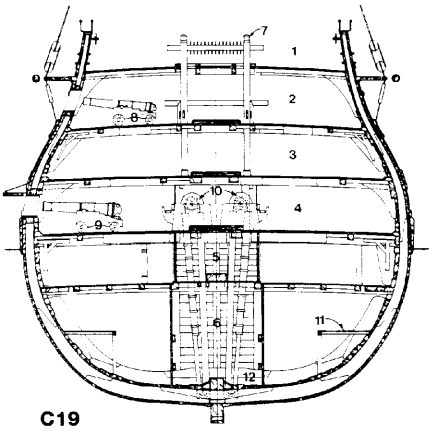
1 Quarterdeck
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck
6 Hold
7 Aft hatch
8 24-pounder gun (long)
9 Companionway
10 Midshipmen's berth

C21 CROSS SECTION AT '9' LOOKING AFT (1/192 scale)

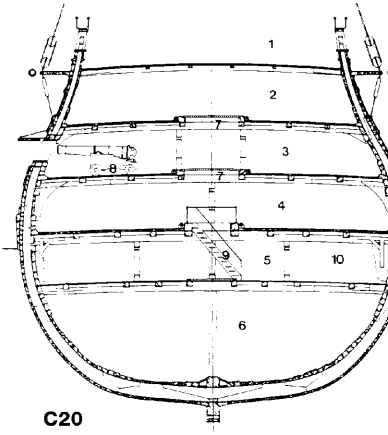
1 Quarterdeck
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck
6 Hold
7 Main companionway
8 12-pounder gun (long)
9 32-pounder gun (long)
10 Midshipmen's berth
11 Riders

C22 CROSS SECTION AT '11' LOOKING AFT (1/192 scale)

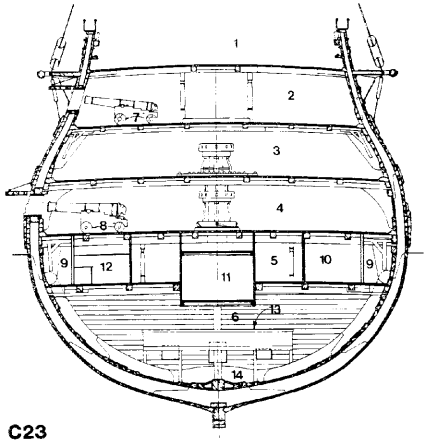
1 Quarterdeck
2 Upper deck
3 Middle deck
4 Lower deck
5 Orlop deck (midshipmen's berth)
6 Hold
7 12-pounder gun (short)
8 Main companionway
9 24-pounder gun (long)
10 Lobby
11 Light box



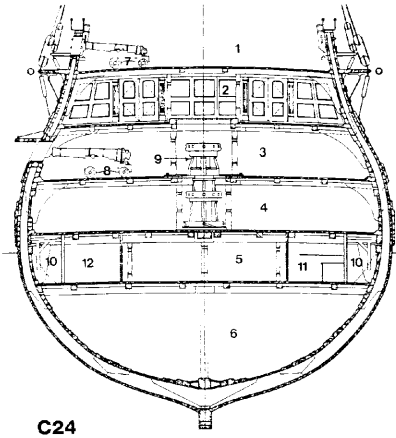
C19



C20



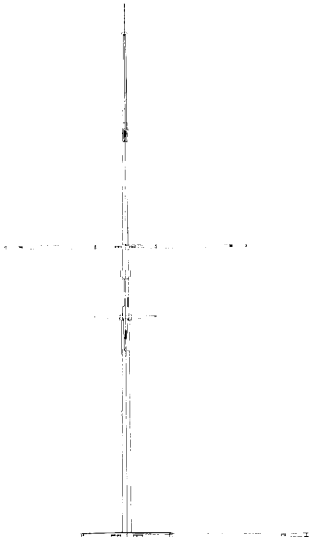
C23

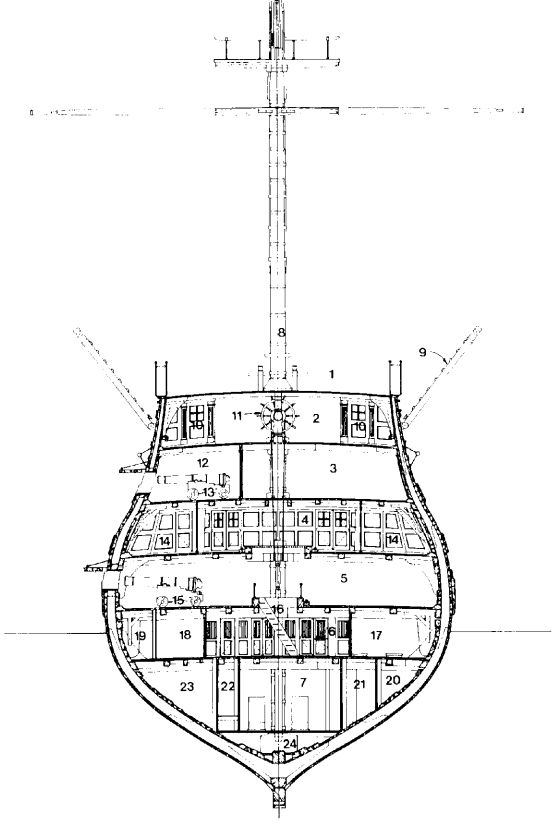


C24

C27 CROSS SECTION AT '21' (MIZZEN MAST) LOOKING AFT (1/192 scale)

1 Poop deck
2 Quarterdeck
3 Upper deck
4 Middle deck
5 Lower deck
6 Orlop deck
7 Hold (flour storage)
8 Mizzen mast
9 Quarter davit
10 Coach house
11 Steering wheel
12 Admiral's sleeping cabin
13 12-pounder gun (long)
14 Officer's cabin
15 32-pounder gun (long)
16 Companionway
17 Purser's cabin
18 Surgeon's cabin
19 Carpenter's walk
20 Wing space
21 Light space
22 Access space
23 Aft powder room
24 Mast step

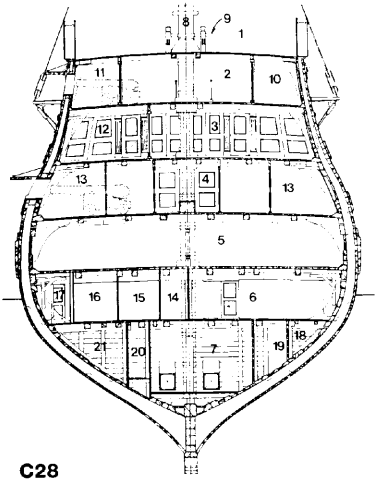



8
9
1
11
2
10
10
12
3
13
4
14
14
5
15
16
19
18
6
17
23
22
7
21
20
24

C Sections – internal arrangements

C28 CROSS SECTION AT '23' LOOKING AFT (1/192 scale)

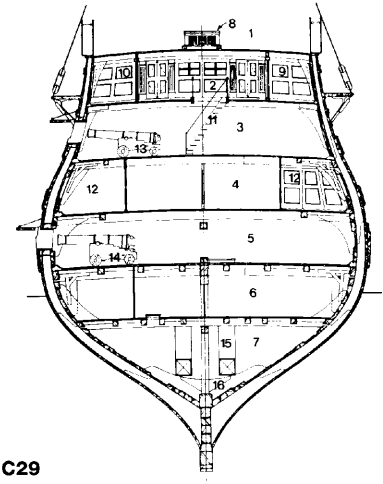
1 Poop deck
2 Quarterdeck
3 Upper deck
4 Middle deck (pantry)
5 Lower deck
6 Orlop deck (steward's room)
7 Hold (flour storage)
8 Mizzen mast
9 Mizzen topsail sheet bitts
10 Master's cabin
11 Secretary's cabin
12 Admiral's sleeping cabin
13 Officer's cabin
14 Passage
15 Dispensary
16 Surgeon's cabin
17 Carpenter's walk
18 Wing space
19 Light space
20 Access space
21 Aft powder room



C28

C29 CROSS SECTION AT '25' LOOKING AFT (1/192 scale)

1 Poop deck
2 Quarterdeck
3 Upper deck (admiral's dining cabin)
4 Middle deck (wardroom)
5 Lower deck (gunroom)
6 Orlop deck (bread room)
7 Hold (aft peak)
8 Skylight
9 Master's cabin
10 Secretary's cabin
11 Companionway
12 Officer's cabin
13 12-pounder gun (long)
14 32-pounder gun (long)
15 Vent trunk
16 Crutch



C29

C30 CROSS SECTION AT '27' LOOKING AFT (1/192 scale)

1 Poop deck
2 Quarterdeck (captain's dining cabin)
3 Upper deck (admiral's dining cabin)
4 Middle deck (wardroom)
5 Lower deck (gunroom)
6 Orlop deck (bread room)
7 Hold (aft peak)
8 Skylight
9 Captain's sleeping cabin
10 12-pounder gun (long)
11 Officer's cabin
12 Vent trunk
13 Crutches

C31 CROSS SECTION AT '29' LOOKING AFT (1/192 scale)

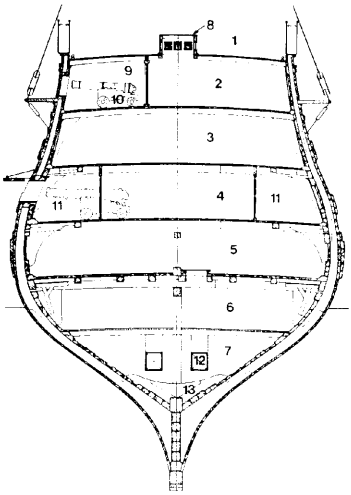
1 Poop deck
2 Quarterdeck (captain's dining cabin)
3 Upper deck (admiral's dining cabin)
4 Middle deck (wardroom)
5 Lower deck (gunroom)
6 Orlop deck (bread room)
7 Hold (aft peak)
8 Skylight
9 Captain's sleeping cabin
10 Officer's cabin
11 32-pounder gun (long)
12 Tiller
13 Quarter knees
14 Vent trunk

C32 CROSS SECTION AT '31' LOOKING AFT (1/192 scale)

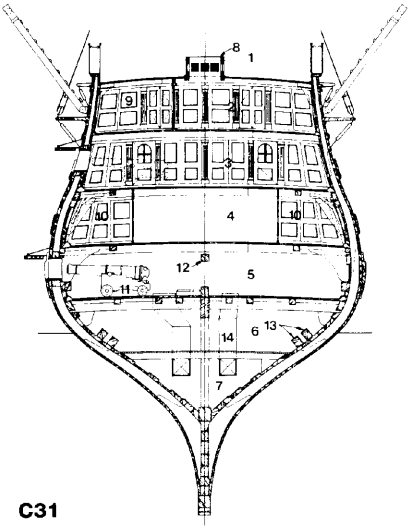
1 Poop deck
2 Quarterdeck (captain's day cabin)
3 Upper deck (admiral's day cabin)
4 Middle deck (wardroom)
5 Lower deck (gunroom)
6 Orlop deck (bread room)
7 Hold (lady's hole)
8 Officer's cabin
9 Passage
10 Lodging knee
11 Tiller
12 Transom knee
13 Quarter knees
14 Vent trunk
15 Sternson knee

C33 CROSS SECTION AT '32' LOOKING AFT (1/192 scale)

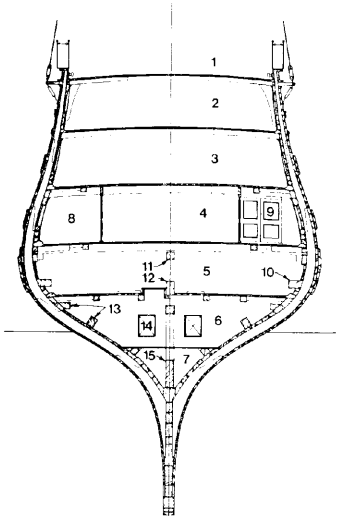
1 Poop deck
2 Quarterdeck (captain's day cabin)
3 Upper deck (admiral's day cabin)
4 Middle deck (wardroom)
5 Lower deck (gunroom)
6 Quarter galleries
7 Frame
8 Transoms
9 Filling pieces
10 Deadwood
11 Keel



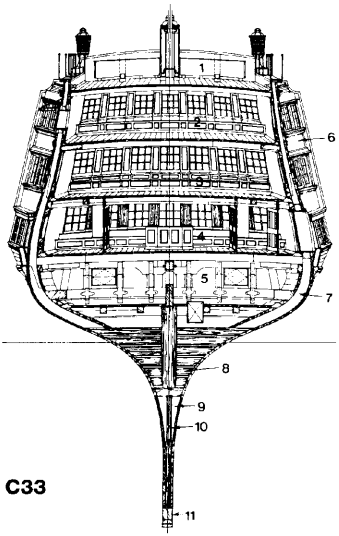
C30



C31



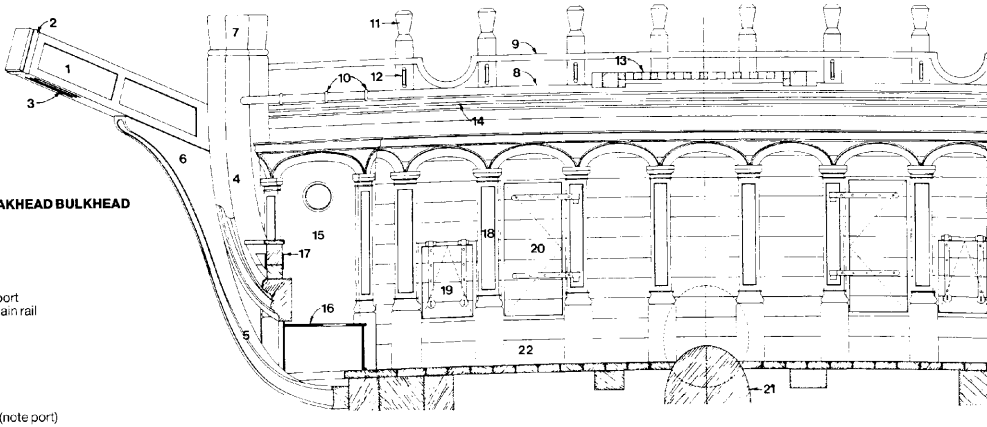
C32



C33

D External details

D1



D1 VIEW OF BEAKHEAD BULKHEAD (1/48 scale)

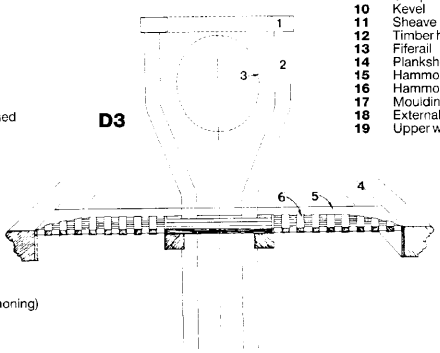
1 Cathead
2 Iron band
3 Sheaves
4 Main rail
5 Ekeing rail
6 Cathead support
7 Head of the main rail
8 Plank sheer
9 Fiferail
10 Iron rings
11 Timber head
12 Sheave
13 Gangboards
14 Moulding
15 Roundhouse (note port)
16 Stool
17 False rail
18 Decorative pilaster with arched mouldings
19 Port
20 Door
21 Bowsprit
22 Collar beam

D2 SECTION THROUGH BEAKHEAD (1/48 scale)

1 Forecastle deck
2 Upper deck
3 Cathead
4 Head of the main rail
5 Timber head (with sheave)
6 Fiferail
7 Planksheer (note iron rings)
8 Gangboards
9 Moulding
10 Beakhead bulkhead
11 Roundhouse
12 Decorative pilaster with arched moulding
13 Collar beam
14 Cat beam
15 Cat-tail
16 Shot garland
17 Snatch block
18 Main rail
19 Knighthead
20 Stool
21 Boomkin
22 Netting
23 Stanchion and rail
24 False rail
25 Line of bowsprit (note gammoning)
26 Gangboard pillar
27 Stem
28 Cross beam
29 Grating
30 Beakhead timber

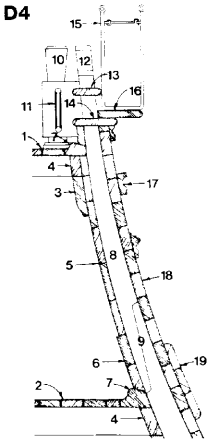
D3 DETAIL OF GANGBOARDS (MARINES' WALK) (1/48 scale)

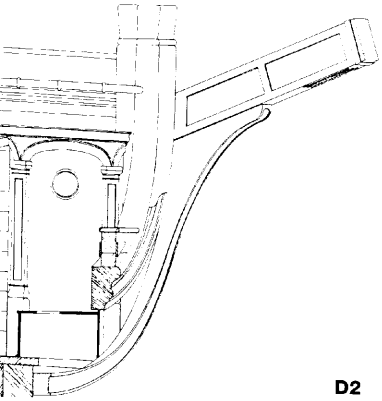
1 Gangboards
2 Gangboard pillars
3 Line of bowsprit
4 Main rail
5 Cross beam
6 Grating

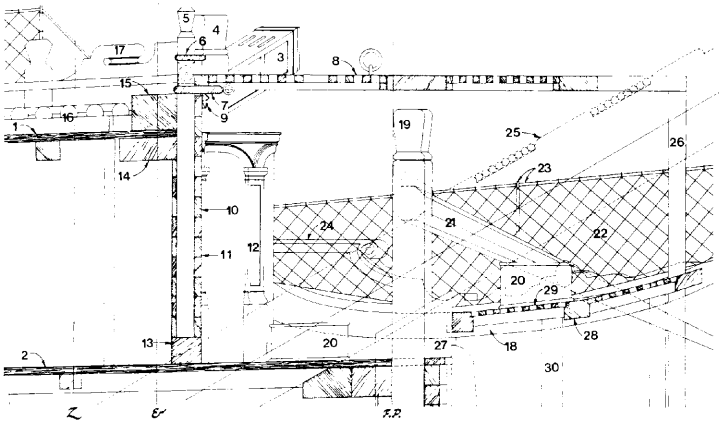


D4 RAIL DETAIL AT STATION 'X' (1/48 scale)

1 Forecastle deck
2 Upper deck
3 Beam shelf
4 Packing
5 Inner lining
6 Stringers
7 Waterway plank
8 Frame
9 Scarph
10 Kevel
11 Sheave
12 Timber head
13 Fiferail
14 Planksheer
15 Hammock crane
16 Hammock crane plank
17 Moulding
18 External planking
19 Upper wale

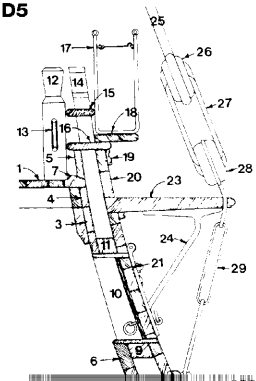






D2

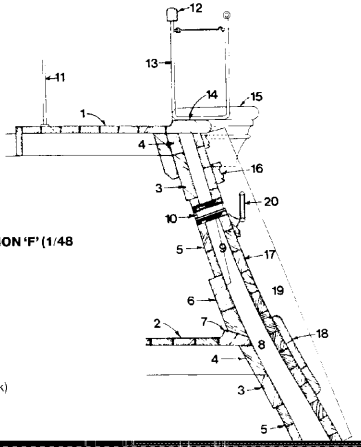
D5



D5 RAIL DETAIL AT STATION 'Q' (1/48 scale)

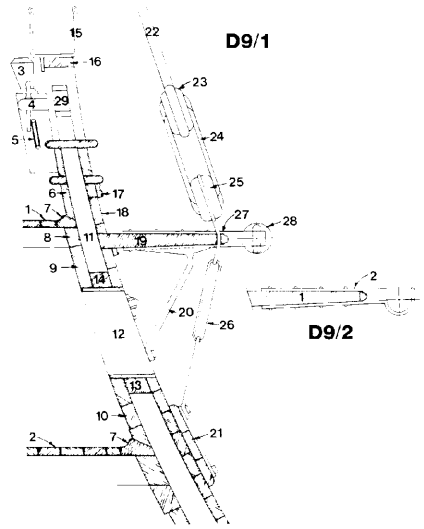
1 Forecastle deck
2 Upper deck
3 Beam shelf
4 Packing
5 Inner lining
6 Stringers
7 Waterway plank
8 Frame
9 Port sill
10 Gunport
11 Port lintel
12 Kevel
13 Sheave
14 Timber head
15 Fiferail
16 Plank sheer
17 Hammock crane
18 Hammock crane plank
19 Moulding
20 External planking
21 Gunport lid
22 Upper wale

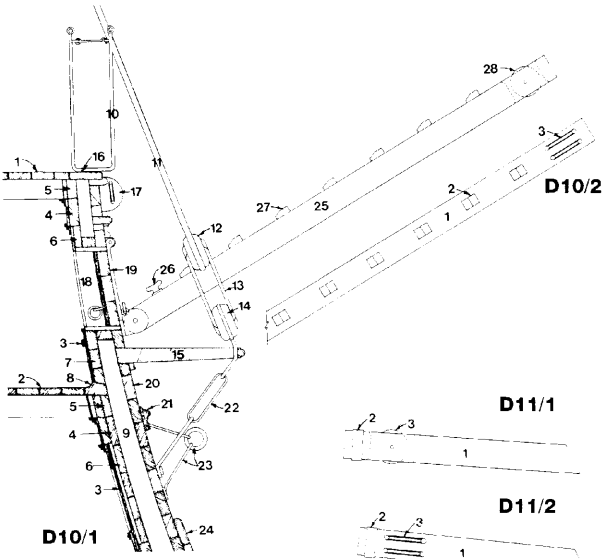
D6



D6 RAIL DETAIL AT STATION 'F' (1/48 scale)

1 Boat booms (gangway)
2 Upper deck
3 Beam shelf
4 Packing
5 Inner lining
6 Stringers
7 Waterway plank
8 Frame
9 Scarph
10 Sheave (for main sail tack)
11 Rail stanchion
12 Rail
13 Hammock crane





D9 RAIL DETAIL AT STATION '7' (1/48 scale)

D9/1 Section

1 Quarterdeck
2 Upper deck
3 Kevel
4 Pinrail and belaying pin
5 Sheave
6 Inner lining
7 Waterway plank
8 Packing
9 Beam shelf
10 Stringers
11 Frame
12 Gunport
13 Port sill
14 Port lintel
15 Hammock crane
16 Planksheer
17 Moulding
18 External planking
19 Main channel
20 Channel support bracket
21 Upper wale
22 Main mast shroud
23 Shroud deadeye
24 Lanyard
25 Chain deadeye
26 Main shroud chain
27 Studding sail boom bracket
28 Main lower studding sail boom (with goose neck)
29 Timber head

D9/2 Detail of studding sail boom support (1/48 scale)

1 Main channel
2 Main studding sail boom bracket

D10 RAIL DETAIL AT STATION '25' (1/48 scale)

D10/1 Section

1 Poop deck
2 Quarterdeck
3 Cabin panneling
4 Beam shelf
5 Packing
6 Inner lining
7 Stringers
8 Waterway plank
9 Frame
10 Hammock crane
11 Mizzen shroud
12 Shroud deadeye
13 Lanyard
14 Chain deadeye
15 Mizzen channel
16 Planksheer
17 'D' Block (for crossjack lifts)
18 Gunport
19 Port lid
20 External planking
21 Moulding
22 Mizzen shroud chain
23 Bracket and ring for main sheet block
24 Upper wale
25 Quarter davit
26 Cleat
27 Foothold cleat
28 Sheave

D10/2 Plan of quarter davit (1/48 scale)

1 Quarter davit (10in square)
2 Foothold cleat
3 Sheaves

D11 STERN DAVIT (1/48 scale)

D11/1 Elevation

1 Stern davit
2 Iron band
3 Sheave

D11/2 Plan

1 Stern davit
2 Iron band
3 Sheave

E Fittings

E1 FORE MAST HULL FITTINGS (1/48 scale)

E1/1 Plan of fore mast at forecastle deck

1 Fore mast
2 Mast coat
3 Main top bowline bitts
4 Fore topsail sheet bitts
5 Belaying pins
6 Sheave

E1/2 Elevation of fore mast at forecastle level

1 Forecastle deck
2 Upper deck
3 Fore mast (note boarding pikes)
4 Mast coat
5 Main top bowline bitts
6 Fore topsail sheet bitts
7 Belaying pin
8 Sheave
9 Deck beams
10 Mast hoop
11 Bitt pin

E2 BELFRY DETAILS (1/48 scale)

E2/1 Plan of belfry

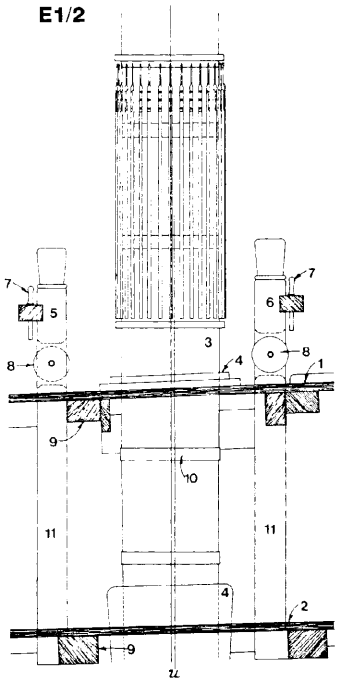
1 Line of canopy over
2 Pillar
3 Cross bar
4 Bell crank
5 Rail
6 Post
7 Knee

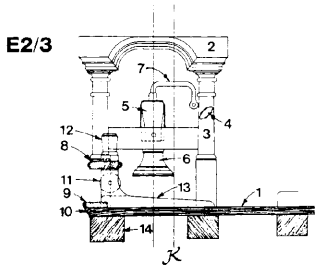
E2/2 Elevation of belfry (looking forward)

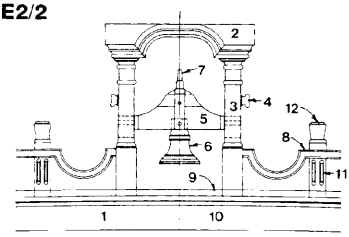
1 Deck beam
2 Canopy
3 Pillar
4 Cleat
5 Cross bar
6 Bell
7 Bell crank
8 Rail
9 Lining plank
10 Moulding
11 Sheave
12 Post

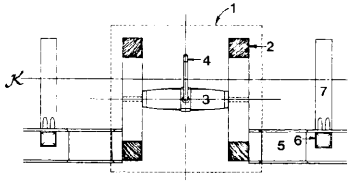
E2/3 Elevation of belfry (looking to port)

1 Forecastle deck
2 Canopy
3 Pillar
4 Cleat
5 Cross bar
6 Bell
7 Bell crank
8 Rail
9 Lining plank
10 Moulding
11 Sheave
12 Post (note timber head)
13 Knee
14 Deck beam









E3 MAIN MAST HULL FITTINGS (1/48 scale)

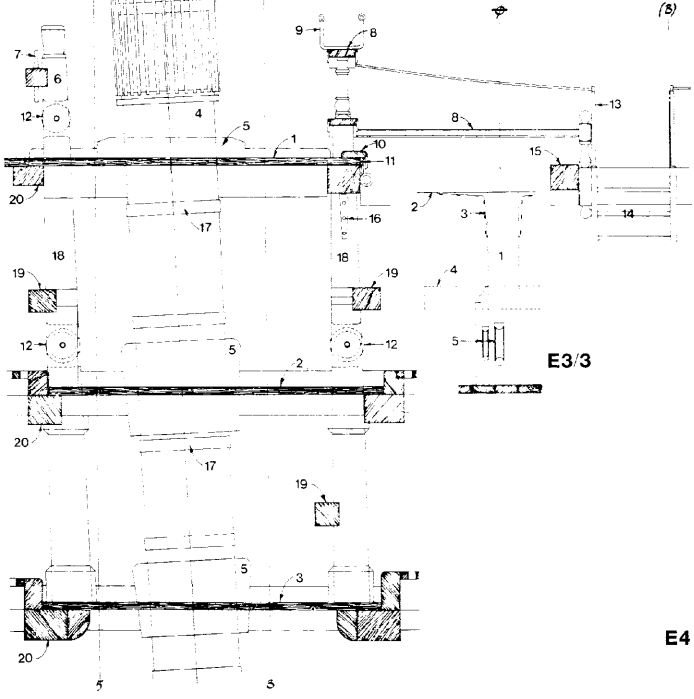
E3/1 Plan of main mast at quarterdeck
1 Main mast
2 Mast coat
3 Coaming
4 Open (for rigging)
5 Fore brace bitts
6 Belaying pins
7 Sheaves
8 Rail
9 Hammock crane

E3/2 Elevation of main mast and break of quarterdeck
1 Quarterdeck
2 Upper deck
3 Lower deck
4 Main mast (note boarding pikes)
5 Mast coat
6 Fore brace bitts
7 Belaying pin
8 Rail
9 Hammock crane
10 Lining plank
11 Moulding
12 Sheave
13 Stanchion
14 Ladder
15 Skid beam
16 Iron knee
17 Mast hoop
18 Bitt pin
19 Cross piece
20 Deck beam

E3/3 View of sheaves
1 Bitt pin
2 Deck beam
3 Iron knee
4 Cross piece
5 Sheaves

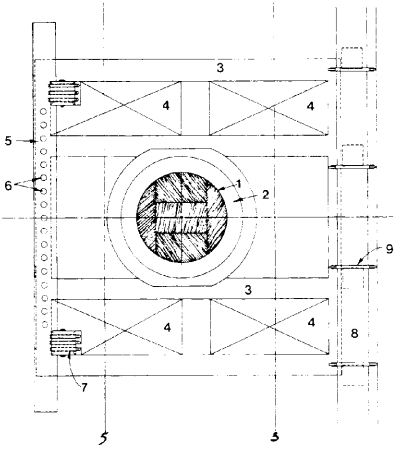
E4 DETAIL OF MAIN COMPANIONWAY (1/48 scale)
1 Quarterdeck
2 Upper deck
3 Coaming and trim
4 Deck beam
5 Rail
6 Balluster
7 Ladder
8 Stanchion

E3/2

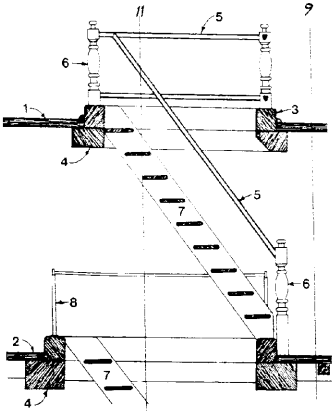


E3/3

E3/1



E4



E Fittings

E5 HAWSE HOLE DETAILS (1/96 scale)

E5/1 Plan of stem at lower deck
1 Stem
2 Apron
3 Stemson
4 Frames
5 Breast hook
6 Iron knee
7 Hawse holes (1ft 8in diam)
8 Hawse hold covers
9 Roller
10 Messenger

E5/2 Section at stem
1 Middle deck
2 Lower deck
3 Frames
4 Breast hook
5 Breast hook (note iron knee)
6 Hawse holes
7 Roller (7in diam) – note iron plates set into deck hook and deck
8 Messenger

E6 RIDING BITTS (1/96 scale)

E6/1 Plan
1 Horizontal baulk
2 Bitt pins
3 Knee
4 Messenger

E6/2 Side view
1 Middle deck
2 Lower deck
3 Deck beam
4 Carlings
5 Horizontal baulk
6 Bitt pins
7 Knee
8 Messenger
9 4in diam hole for stopper cable

E6/3 View of aft riding bitts

E6/4 View of fore riding bitts
1 Lower deck
2 Deck beam
3 Carling
4 Bitt pins (1ft 8in square)
5 Horizontal baulk (14ft 6in long, 2ft 1in wide, 1ft 6in deep)
6 Knee
7 Messenger

E7 DETAILS OF FORE CAPSTAN (1/96 scale)

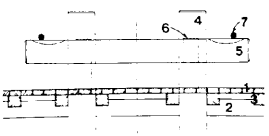
E7/1 Sections of fore capstan on lower deck

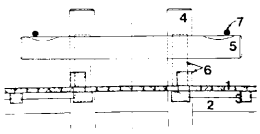
E7/2 Elevation of fore capstan
1 Upper deck
2 Middle deck
3 Lower deck
4 Removable cover
5 Drumhead (with holes for bars)
6 Whelps
7 Grating
8 Barrel (with muntins)
9 Trundlehead (with holes for bars)
10 Plinth

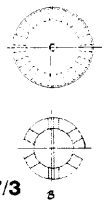
E7/3 Sections of fore capstan on middle deck

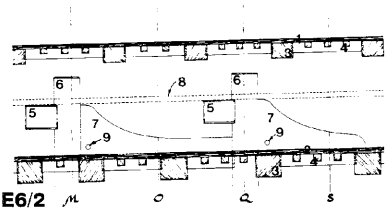
E8 MAIN HATCH DETAILS (1/96 scale)

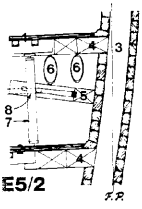
E8/1 Plan of main hatch
1 Main hatch with grating
2 Coaming
3 Open for hawse cable
4 Compressor
5 Iron knee
6 Pillar

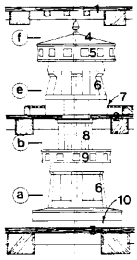


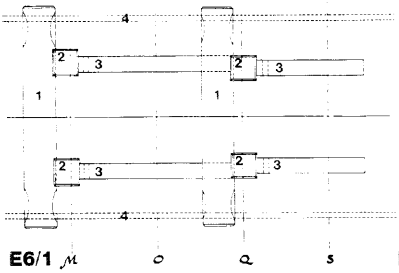


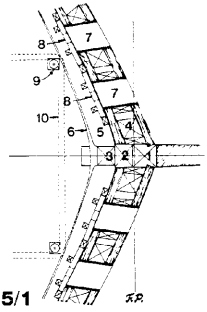


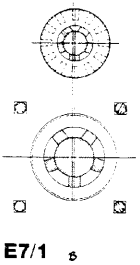


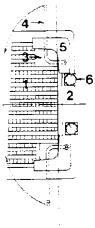


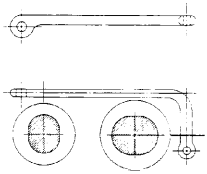


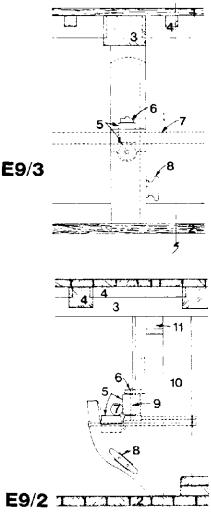


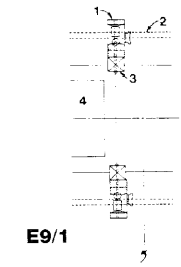


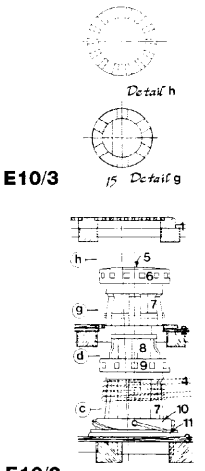


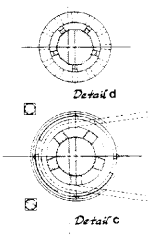


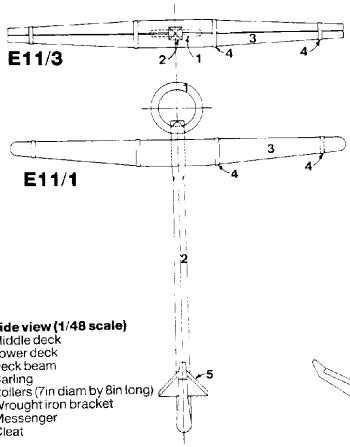


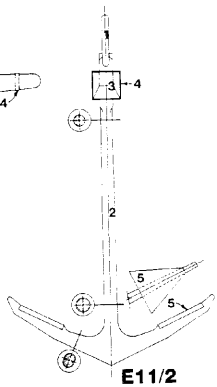


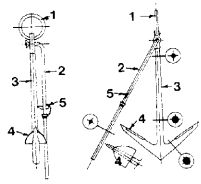












E8/2 E8/3 Compressor details, plan and elevation (1/32 scale)
Two thus located at underside of main hatch, lower deck

E9 ROLLER FAIRLEAD DETAILS

E9/1 Plan (1/96 scale)
1 Roller fairlead
2 Messenger
3 Pillar
4 Companionway

E9/2 Front view (1/48 scale)
1 Middle deck
2 Lower deck
3 Deck beam
4 Carlings
5 Rollers
6 Wrought iron bracket
7 Messenger
8 Cleat
9 Bolts (1in diam)
10 Pillar
11 Open

E9/3 Side view (1/48 scale)
1 Middle deck
2 Lower deck
3 Deck beam
4 Carling
5 Rollers (7in diam by 8in long)
6 Wrought iron bracket
7 Messenger
8 Cleat

E10 DETAILS OF MAIN CAPSTAN (1/96 scale)

E10/1 Sections of main capstan on lower deck

E10/2 View of main capstan
1 Upper deck
2 Middle deck
3 Lower deck
4 Messenger
5 Cap
6 Drumhead (with holes for bars)
7 Whelps
8 Barrel (with muntins)
9 Trundlehead (with holes for bars)
10 Pawl head (with pawls)
11 Wheel (plinth)

E10/3 Sections of main capstan on middle deck

E11 BOWER AND SHEET ANCHORS (1/96 scale)
Two thus – Sheet
Two thus – Bower
Weight: 8400 pounds

E11/1 Side elevation

E11/2 Front elevation
1 Ring
2 Shank
3 Stock
4 Iron band
5 Palm

E11/3 Top view
1 Ring (dotted)
2 Shank
3 Stock
4 Iron bands

E12 KEDGE ANCHOR (1/48 scale)
One thus on mizzen channel, starboard

E12/1 Front elevation

E12/2 Side elevation
1 Ring
2 Stock
3 Shank
4 Palm
5 Forelock

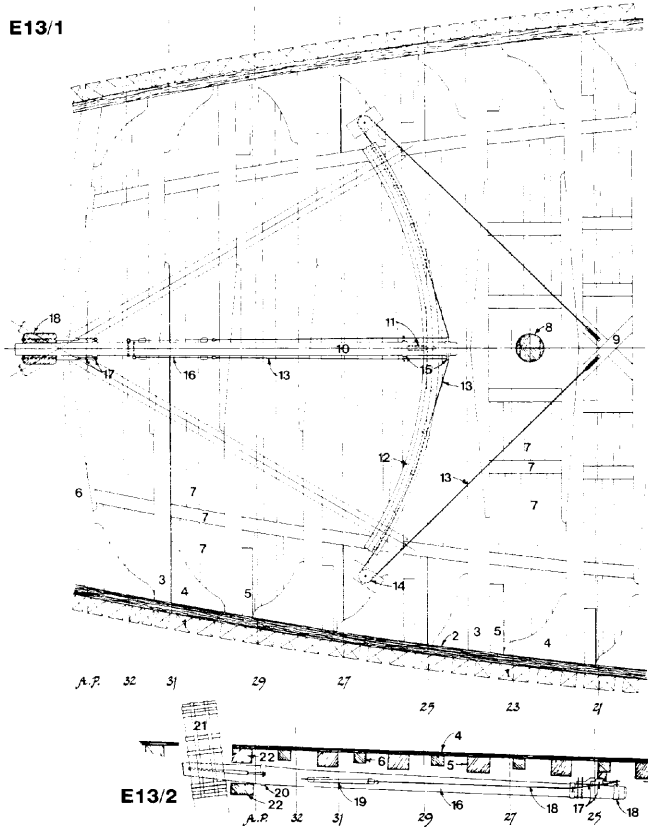
E13 STEERING DETAILS

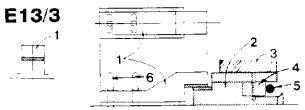
E13/1 Reflected plan of middle deck (1/96 scale)

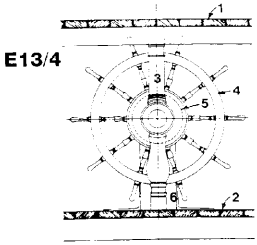
1 Frames
2 Beam shelf
3 Deck beam
4 Lodging knee
5 Hanging knee
6 Transom
7 Carlings
8 Mizzen mast
9 Cross members for sheaves
10 Tiller
11 Goose neck over
12 Tiller sweep (note rollers)
13 Tiller rope
14 Sheave
15 Iron band with hoops
16 Tensioning tackles
17 Iron band and bolts
18 Rudder head

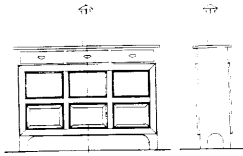
E13/2 Section at middle line showing wheel, tiller and steering mechanism (1/96 scale)

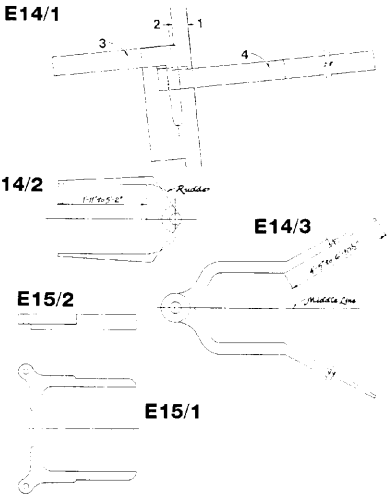
1 Poop deck
2 Quarterdeck
3 Upper deck
4 Middle deck
5 Deck beams
6 Carlings
7 Pillar
8 Steering wheel
9 Barrel
10 Stanchion
11 Iron knee
12 Slots with sliding covers
13 Tiller ropes
14 Grating
15 Sheave (in cross member)
16 Tiller
17 Tiller sweep and goose neck
18 Iron bands with hoops
19 Tensioning tackles
20 Iron band and bolts
21 Rudder head (note iron bands)
22 Transoms











E13/3 Details of iron goose neck and section of tiller sweep (1/32 scale)
1 Goose neck
2 Tiller sweep
3 Carling
4 Lignum vitae roller
5 Tiller rope
6 Bolts

E13/4 View of steering wheel (1/48 scale)
1 Poop deck
2 Quarterdeck
3 Pillar
4 Wheel
5 Line of barrel
6 Stanchion and iron knee beyond

E13/5 Front and side view of binnacle (1/48 scale)

E14 PINTLE AND GUDGEON (1/32 scale)

E14/1 Details of pintle and gudgeon
1 Stern post
2 Rudder
3 Pintle
4 Gudgeon

E14/2 Plan of pintle

E14/3 Plan of gudgeon

E15 SPECTACLE PLATE (1/32 scale)

E15/1 Plan of spectacle plate

E15/2 Elevation of spectacle plate

E16 STERN LANTERN (1/32 scale)
One thus on middle line

E16/1 Plan

E16/2 Side view

E16/3 Stern view

E17 STERN LANTERN (1/32 scale)
Two thus at ship's side

E17/1 Plan

E17/2 Side view

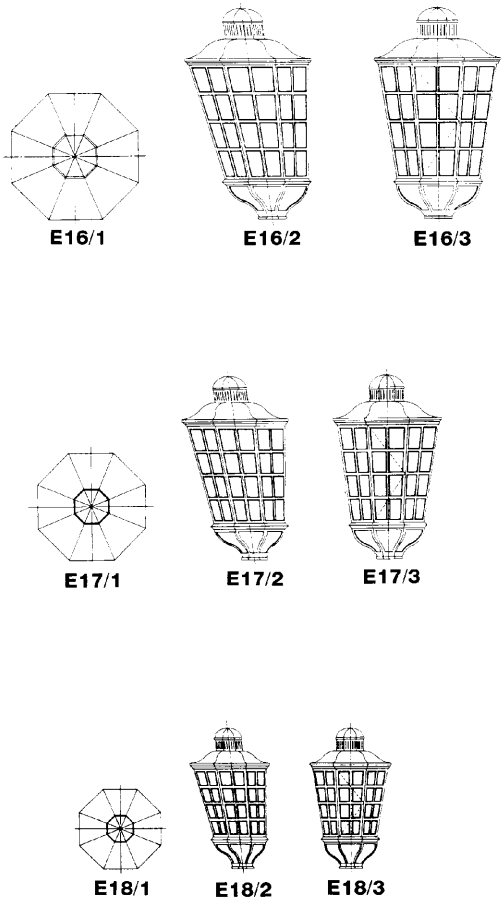
E17/3 Stern view

E18 ADMIRAL'S LANTERN (1/32 scale)
One thus on main top

E18/1 Plan

E18/2 Side view

E18/3 Stern view

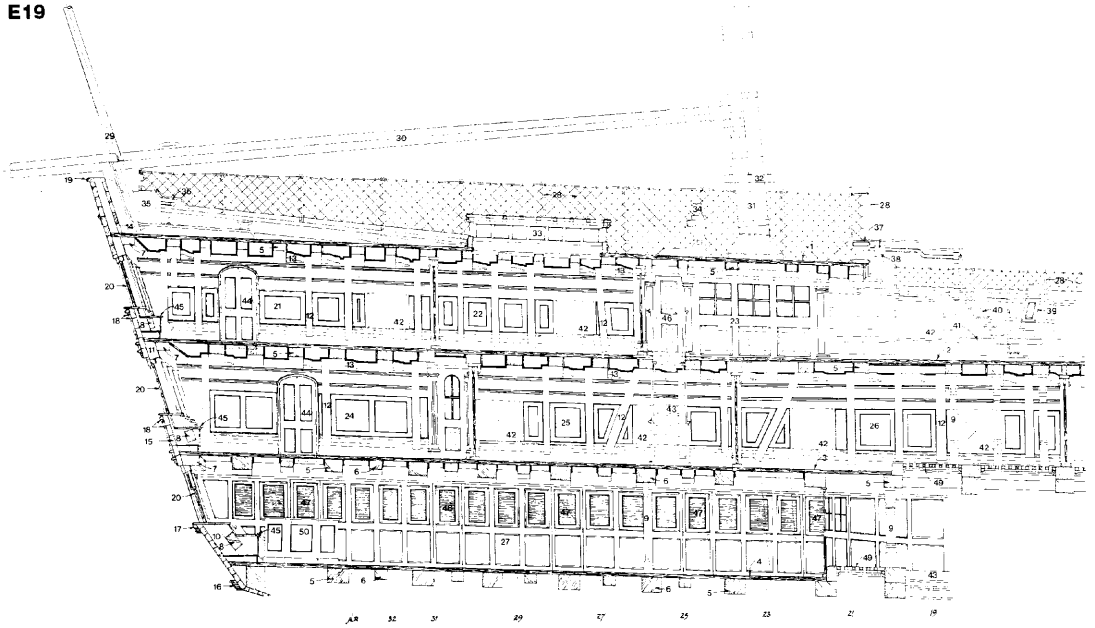


E Fittings

E19 DETAILS OF STERN CABINS (1/96 scale)

1 Poop deck
2 Quarterdeck
3 Upper deck
4 Middle deck
5 Deck beam
6 Carling
7 Deck transom
8 Tie beam
9 Pillar
10 Upper counter timber
11 Stern timber
12 Hanging knee
13 Lodging knee
14 Transom knee
15 External planking
16 Lower counter rail
17 Upper counter rail
18 Balusters and mouldings
19 Taffrail
20 Stern windows
21 Captain's day cabin
22 Captain's dining cabin
23 Coach house
24 Admiral's day cabin
25 Admiral's dining cabin
26 Secretary's cabin
27 Wardroom
28 Hammock cranes and netting
29 Ensign staff
30 Driver boom
31 Mizzen mast
32 Pinrail
33 Skylight
34 Mizzen topsail sheet bitts
35 Flag locker
36 Snatch block
37 Rail
38 Fire bucket
39 Kevel
40 Ladder
41 Shot garland
42 Gunport
43 Companionway
44 Door to quarter gallery
45 Bench
46 Door to coach house
47 Door to officer's cabin
48 Door to passage
49 Grating
50 Cover for rudder head

E19



E20 34ft LAUNCH (1/192 scale)

E20/1 Plan

E20/2 Outboard profile

E20/3 Section

E20/4 Stern

E20/5 Body profile

E20/6 Bow

E21 32ft BARGE (1/192 scale)

E21/1 Plan

E21/2 Outboard profile

E21/3 Section

E21/4 Stern

E21/5 Body profile

E21/6 Bow

E22 28ft PINNACE (1/192 scale)

E22/1 Plan

E22/2 Outboard profile

E22/3 Section

E22/4Stern

E22/5 Body profile

E22/6 Bows

E23 18ft CUTTER (1/192 scale)

E23/1 Plan

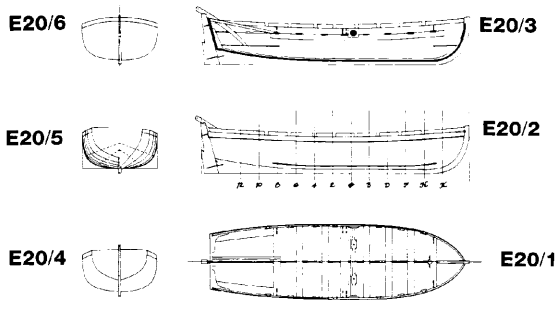
E23/2 Outboard profile

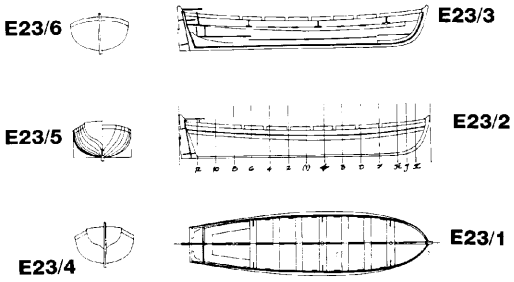
E23/3 Section

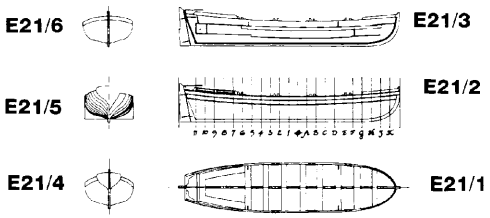
E23/4 Stern

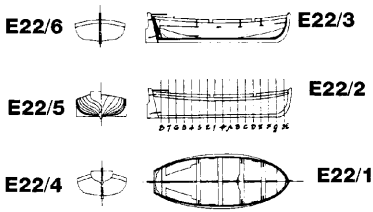
E23/5 Body profile

E23/6 Bow









F Armament

F1 12-POUNDER LONG GUN
Thirty thus on upper deck
Weight: 3475 pounds
Bore: 4.403 inches

F1/1 Plan (1/48 scale)
1 Barrel
2 Carriage sides (or brackets)
3 Truck
4 Cap square
5 Loops
6 Steps of carriage
7 Pommelion
8 Breech
9 Vent
10 Muzzle
11 Reinforcing ring
12 Astragal

F1/2 Side view (1/48 scale)
1 Barrel
2 Carriage sides (or brackets)
3 Pommelion with breeching ring
4 Breech
5 Vent
6 Muzzle
7 Reinforcing ring
8 Astragal
9 Trunnion
10 Trucks
11 Chock
12 Loops
13 Steps of carriage
14 Cap square (with eyebolt and joint bolt)
15 Bed bolt
16 Transom bolt

F1/3 Section (1/48 scale)

F1/4 Carriage plan (1/48 scale)
1 Carriage side (or bracket)
2 Truck
3 Axle
4 Transom
5 Rear axletree
6 Chock
7 Stool bed
8 Bed bolt
9 Transom bolt
10 Loops
11 Cap square

F1/5 Muzzle view (1/48 scale)

F1/6 Breech view (1/48 scale)

F2 12-POUNDER MEDIUM GUN (1/48 scale)
Two thus on forecastle

F2/1 Plan

F2/2 Side view

F2/3 Section

F3 12-POUNDER SHORT GUN (1/48 scale)
Twelve thus on quarterdeck

F3/1 Plan

F3/2 Side view

F3/3 Section

F4 24-POUNDER LONG GUN (1/48 scale)
Twenty-eight thus on middle deck
Weight: 5000 pounds
Bore: 5.547 inches

F4/1 Plan

F4/2 Side view

F4/3 Section

F4/4 Carriage plan of 32- and 24-pounders

F4/5 Muzzle view of 32- and 24-pounders

F4/6 Breech view of 32- and 24-pounders

F5 32-POUNDER LONG GUN (1/48 scale)
Thirty thus on lower deck
Weight: 5600 pounds
Bore: 6.105 inches

F5/1 Plan

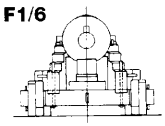
F5/2 Side view

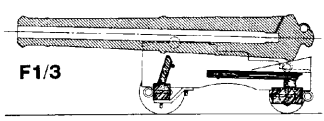
F5/3 Section

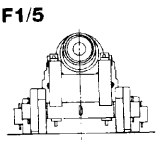
F6 68-POUNDER CARRONADE
Two thus on forecastle
Weight: 3000 pounds
Bore: 8.25 inches

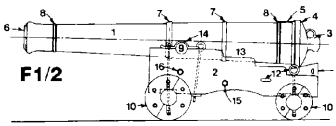
F6/1 Plan (1/48 scale)
1 Barrel
2 Muzzle
3 Reinforcing ring
4 Sight
5 Vent
6 Breech
7 Pommelion
8 Elevating screw
9 Eyes for traversing tackles
10 Breeching rings
11 Eye for outhaul tackle
12 Carriage
13 Sliding Bed
14 Deck block

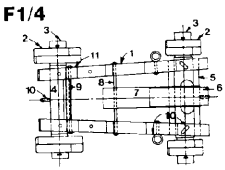
F6/2 Side view (1/48 scale)
1 Barrel
2 Muzzle
3 Pommelion and ring
4 Elevating screw
5 Breech
6 Vent
7 Sight
8 Reinforcing ring
9 Eyes for traversing tackles
10 Breeching ring
11 Eye for outhaul tackle
12 Chock
13 Trunnion and bearing
14 Carriage
15 Sliding bed
16 Deck block
17 Truck

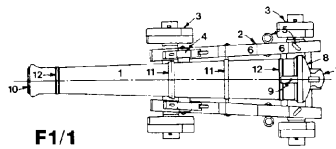


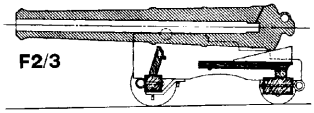


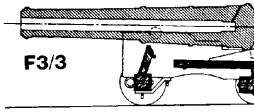


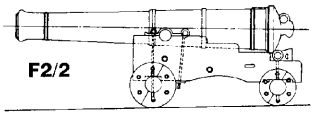


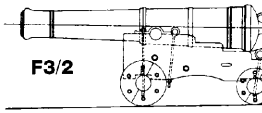


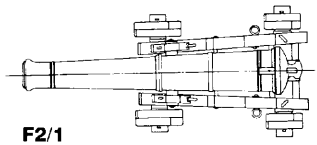


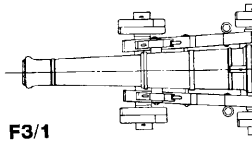


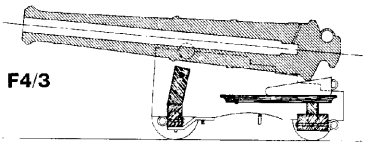




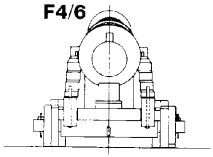




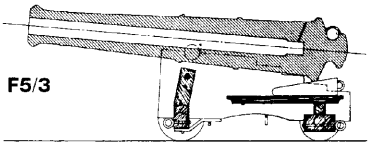




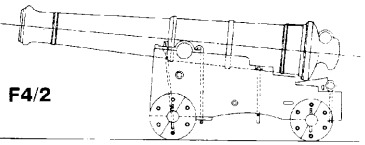
F4/3



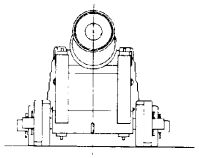
F4/6



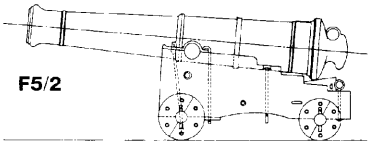
F5/3



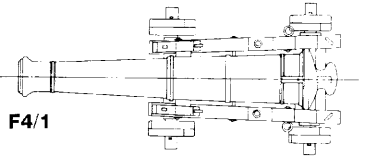
F4/2



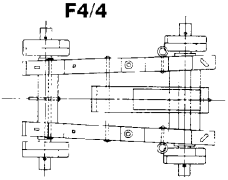
F4/5



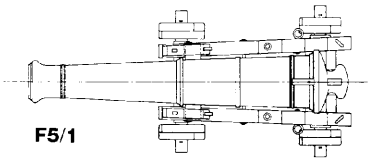
F5/2



F4/1



F4/4



F5/1

F6/3 Carriage plan (1/48 scale)

1 Carriage
2 Sliding bed
3 Dock block (with pivot pin)
4 Plate for elevating screw
5 Chock
6 Trunnion bearing
7 Trucks below
8 Recoil guide slot
9 Breeching ring
10 Eyes for traversing tackles
11 Eyes for outhaul tackles

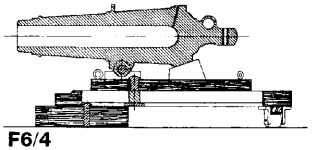
F6/4 Section (1/48 scale)

F6/5 Muzzle view (1/48 scale)

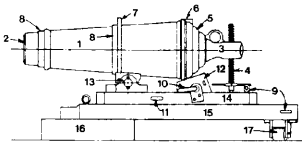
F6/6 Breech view (1/48 scale)

F6/7 Detail of carriage (1/48 scale)

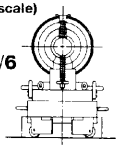
F6/7



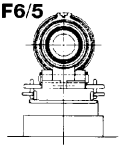
F6/4



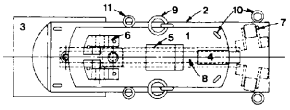
F6/2



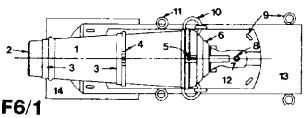
F6/6



F6/5



F6/3



F6/1

G Masts and yards

G1 BOWSPRIT ASSEMBLY

G1/1 Elevation (1/192 scale)

G1/2 Plan (1/192 scale)

G1/3 Port bee block (1/96 scale)

G1/4 Bee block detail (1/96 scale)

G1/5 Plan of bees (1/96 scale)

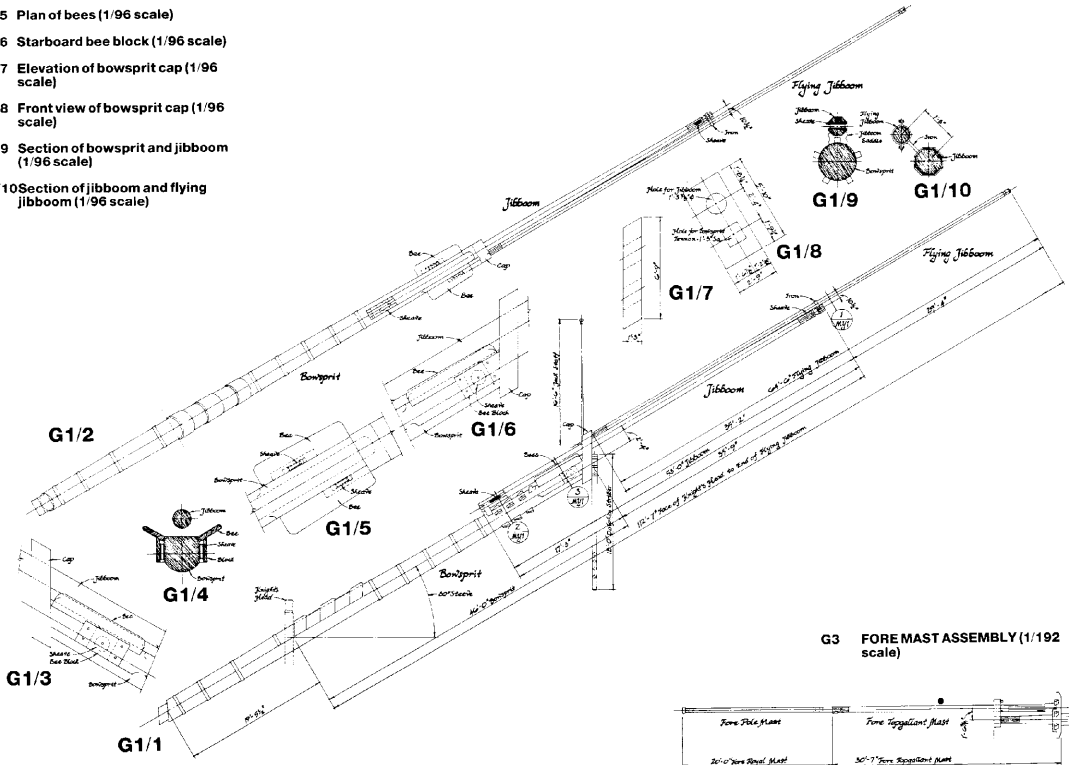
G1/6 Starboard bee block (1/96 scale)

G1/7 Elevation of bowsprit cap (1/96 scale)

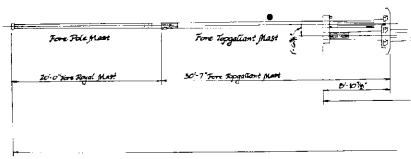
G1/8 Front view of bowsprit cap (1/96 scale)

G1/9 Section of bowsprit and jibboom (1/96 scale)

G1/10 Section of jibboom and flying jibboom (1/96 scale)



G3 FORE MAST ASSEMBLY (1/192 scale)



G2 **BOWSPRIT AND YARDS (1/192 scale)**

G2/1 **Bowsprit**

G2/2 **Jibboom**

G2/3 **Flying jibboom**

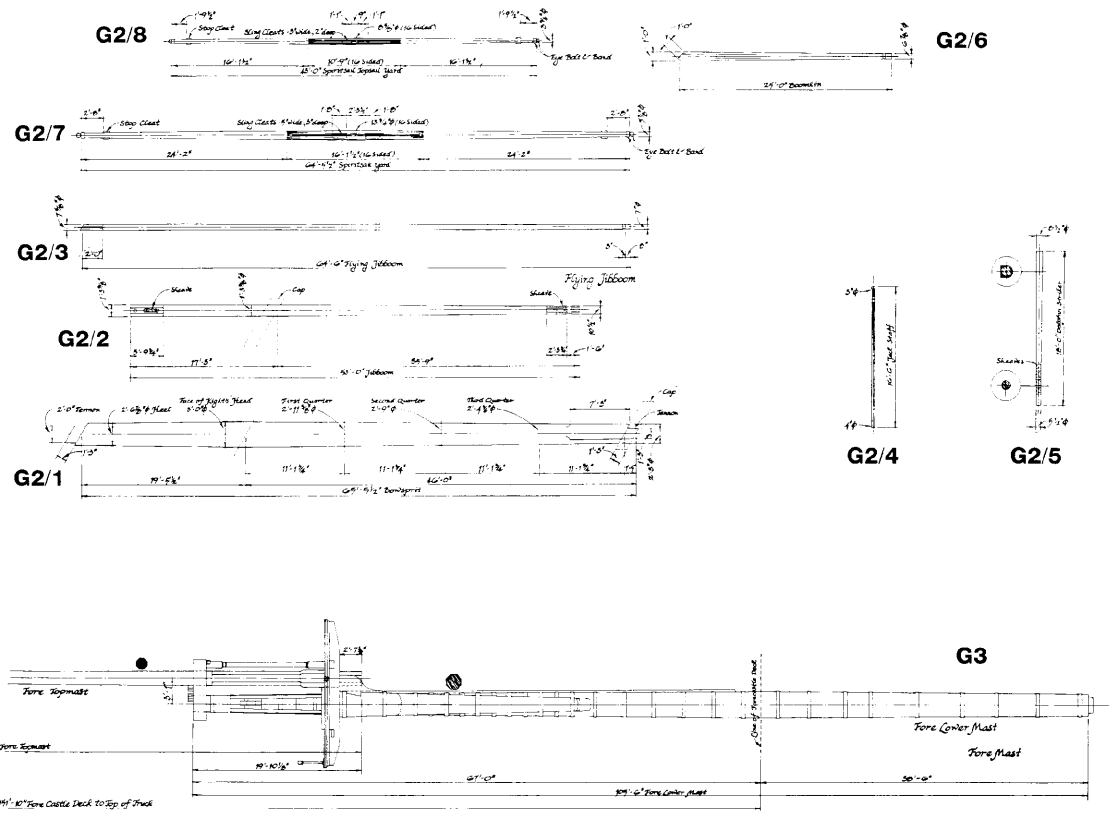
G2/4 **Jack staff**

G2/5 **Dolphin striker**

G2/6 **Boomkin**

G2/7 **Spiritsail yard**

G2/8 **Spiritsail topsail yard**



G Masts and yards

G4 FORE MAST AND YARDS (1/192 scale)

G4/1 Fore lower mast–side elevation

G4/2 Fore lower mast–front elevation

G4/3 Fore topmast

G4/4 Fore topgallant and pole mast

G4/5 Fore yard

G4/6 Fore topmast yard

G4/7 Fore topgallant yard

G4/8 Fore lower studding sail boom

G5 FORE TOP (1/192 scale)

G5/1 Plan of fore top

G5/2 Plan of fore top trees

G5/3 Plan and elevation of fore lower tressle trees (1/96 scale)

G5/4 Plan and elevation of fore lower cross tree (fore) (1/96 scale)

G5/5 Plan and elevation of fore lower cross tree (aft) (1/96 scale)

G5/6 Plan and elevation of fore lower fid (1/96 scale)

G6 FORE TOPMAST TOP (1/96 scale)

G6/1 Plan of fore topmast top

G6/2 Plan and elevation of fore top tressle trees

G6/3 Plan and elevation of fore top cross trees

G7 FORE LOWER MAST CAP (1/96 scale)

G7/1 Plan

G7/2 Side elevation

G7/3 Front elevation

G8 FORE TOPMAST CAP (1/96 scale)

G8/1 Plan

G8/2 Front elevation

G8/3 Side elevation

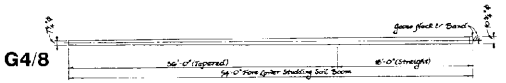
G9 TOP DETAILS (TYPICAL)

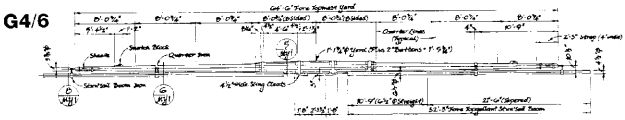
G9/1 Elevation of top (1/96 scale)

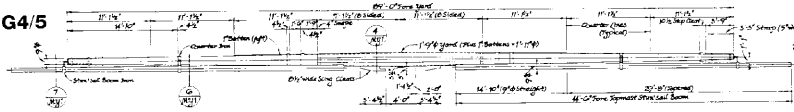
G9/2 Half-section of top (1/48 scale)

G9/3 Detail of top rail (1/48 scale)

G10 TYPICAL LOWER MAST DETAILS (1/96 scale)







G11 TYPICAL TOPMAST DETAILS (1/96 scale)
Note: Dimensions given are for fore mast

G12 TYPICAL TOPGALLANT AND POLE MAST DETAILS (1/96 scale)

G13 TYPICAL YARD DETAILS (1/48 scale)

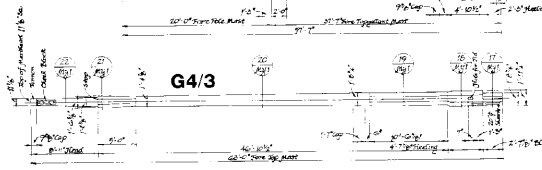
G13/1 Main yard

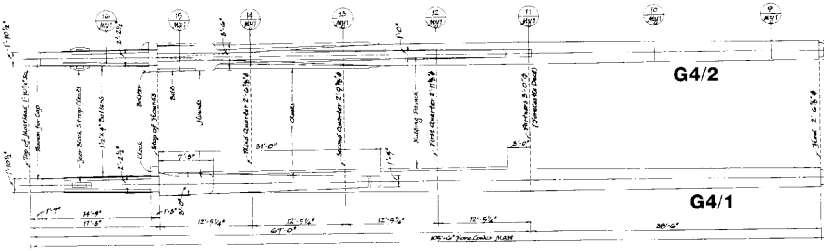
G13/2 Topmast yard

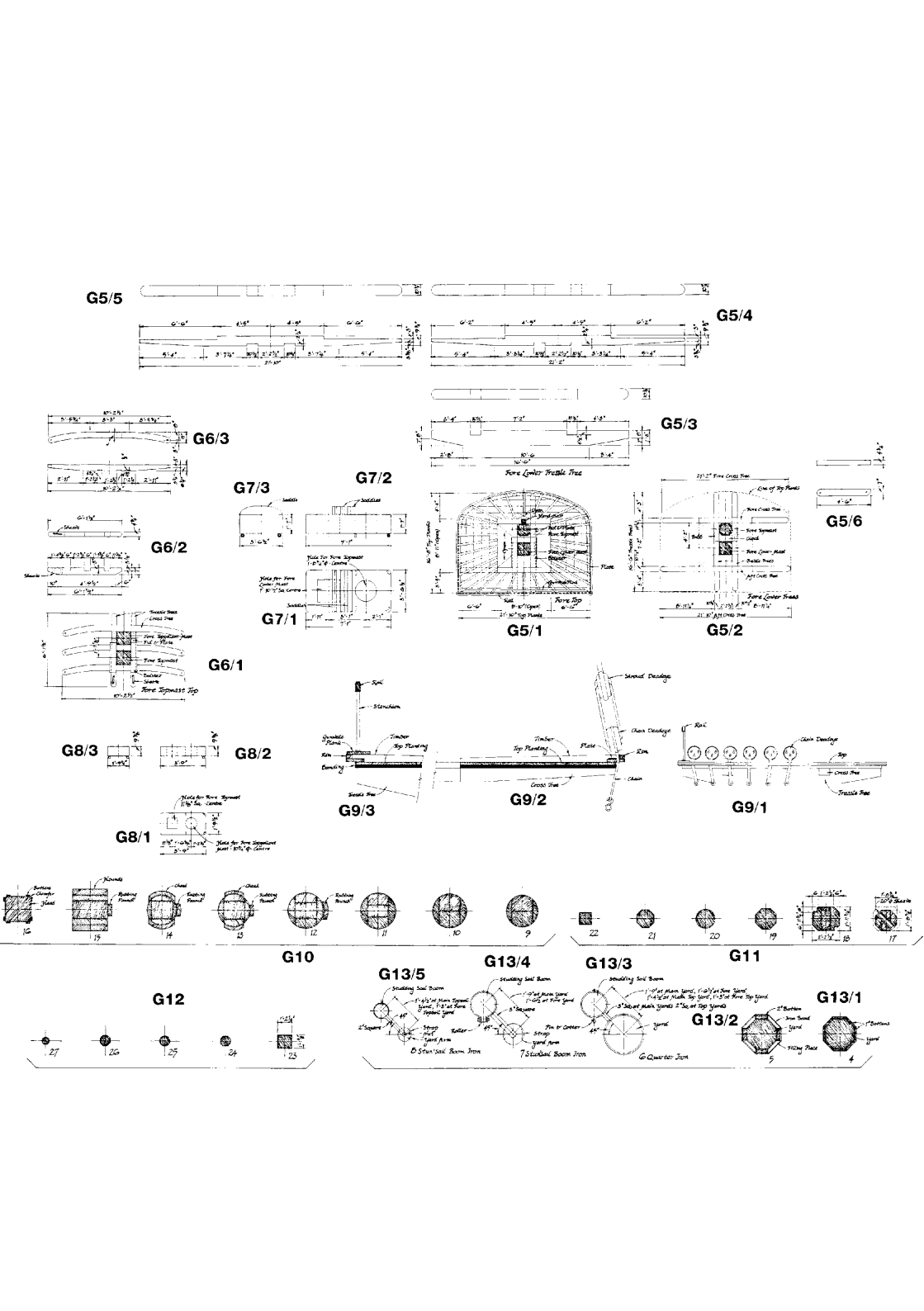
G13/3 Quarter iron

G13/4 Studding sail boom iron – main yard

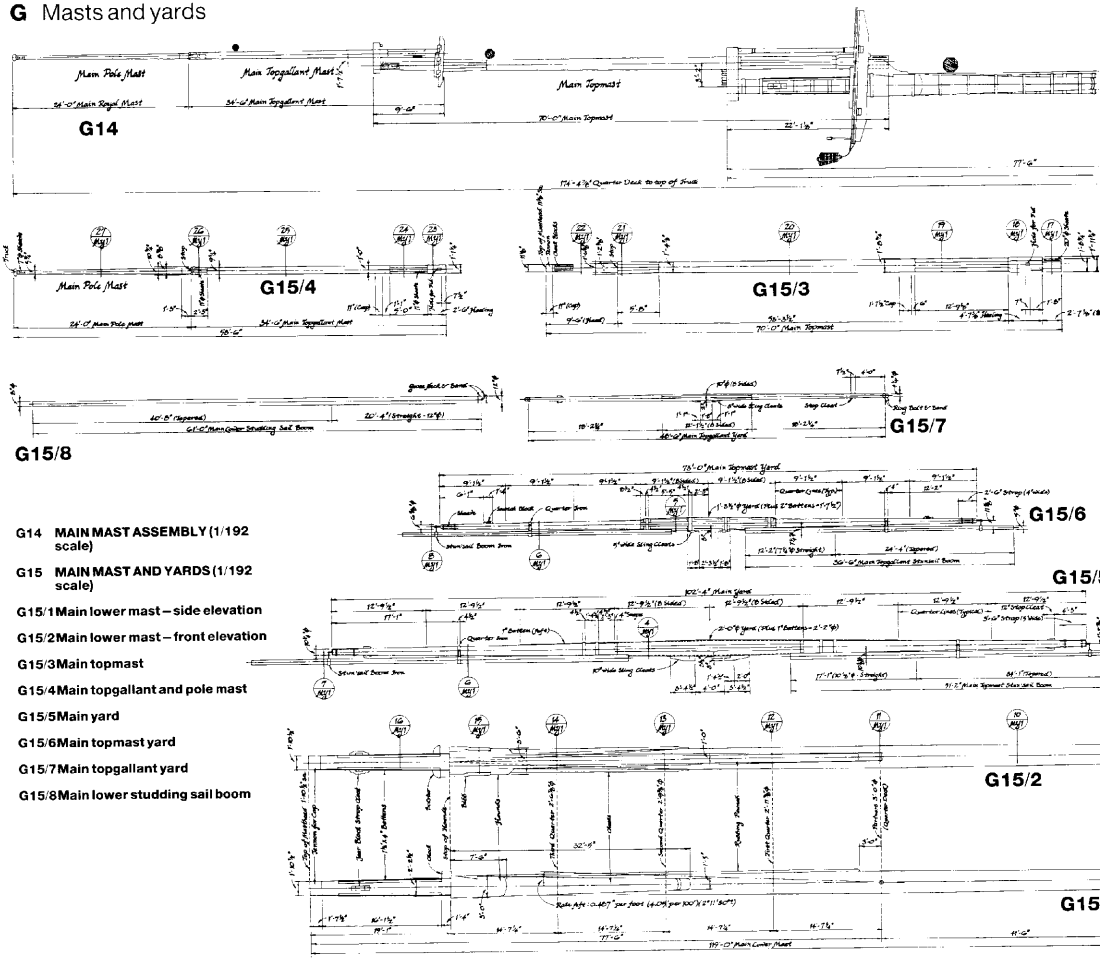
G13/5 Studding sail boom iron – topmast yard






G5/5
G5/4
G6/3
G5/3
G7/3
G7/2
G5/6
G6/2
G7/1
G5/1
G5/2
G6/1
G8/3
G8/2
G9/3
G9/2
G9/1
G8/1
G10
G11
G12
G13/5
G13/4
G13/3
G13/2
G13/1

G Masts and yards



G14 **MAIN MAST ASSEMBLY (1/192 scale)**

G15 **MAIN MAST AND YARDS (1/192 scale)**

G15/1 **Main lower mast – side elevation**

G15/2 **Main lower mast – front elevation**

G15/3 **Main topmast**

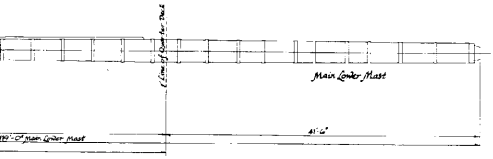
G15/4 **Main topgallant and pole mast**

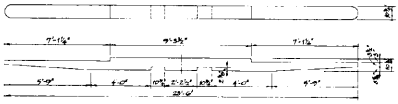
G15/5 **Main yard**

G15/6 **Main topmast yard**

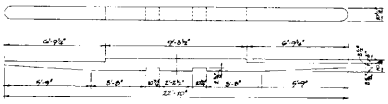
G15/7 **Main topgallant yard**

G15/8 **Main lower studding sail boom**

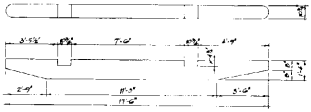




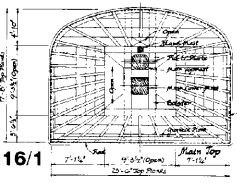
G16/5



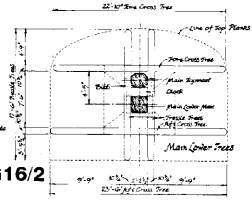
G16/4



G16/3



G16/1



G16/2

G16 MAIN TOP (1/192 scale)

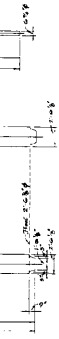
G16/1 Plan of main top

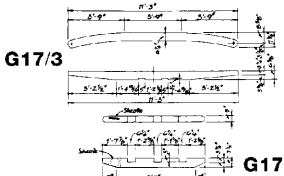
G16/2 Plan of main top trees

G16/3 Plan and elevation of main lower tressle trees (1/96 scale)

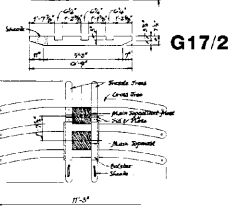
G16/4 Plan and elevation of main lower cross tree (fore) (1/96 scale)

G16/5 Plan and elevation of main lower cross tree (aft) (1/96 scale)





G17/3



G17/2

G17/1

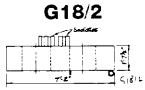
G17 MAIN TOPMAST TOP (1/96 scale)

G17/1 Plan of main topmast top

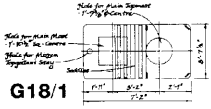
G17/2 Plan and elevation of main top tressle trees

G17/3 Plan and elevation of main top cross trees

G18/3



G18/2



G18/1

G18 MAIN LOWER MAST CAP (1/96 scale)

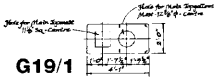
G18/1 Plan

G18/2 Side elevation

G18/3 Front elevation

G19/3

G19/2



G19/1

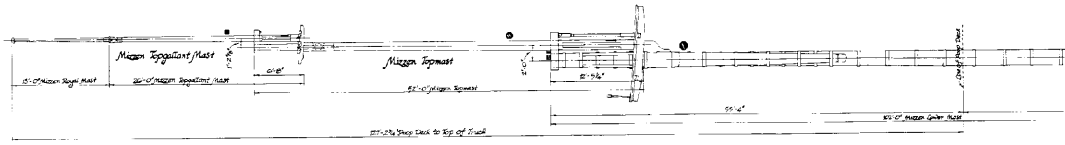
G19 MAIN TOPMAST CAP (1/96 scale)

G19/1 Plan

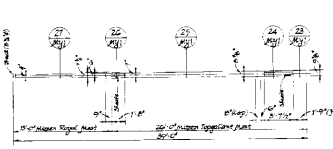
G19/2 Side elevation

G19/3 Front elevation

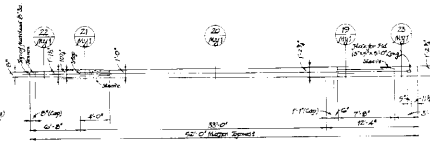
G Masts and yards



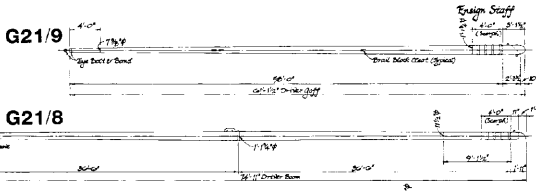
G20



G21/4



G21/3



G21/9

G21/8

G21/7

G21/6

G21/5

G20 **MIZZEN MAST ASSEMBLY** (1/192 scale)

G21 **MIZZEN MAST AND YARDS** (1/192 scale)

G21/1 Mizzen lower mast – side elevation

G21/2 Mizzen lower mast – front elevation

G21/3 Mizzen topmast

G21/4 Mizzen topgallant and pole mast

G21/5 Cross jack yard

G21/6 Mizzen topmast yard

G21/7 Mizzen topgallant yard

G21/8 Driver boom

G21/9 Driver gaff

G22 **MIZZEN TOP** (1/192 scale)

G22/1 Plan of mizzen top

G22/2 Plan of mizzen top trees

G22/3 Plan and elevation of mizzen lower tressle trees (1/96 scale)

G22/4 Plan and elevation of mizzen cross tree (fore) (1/96 scale)

G22/5 Plan and elevation of mizzen cross tree (aft) (1/96 scale)

G23 **MIZZEN TOPMAST TOP** (1/96 scale)

G23/1 Plan of mizzen topmast top

G23/2 Plan and elevation of mizzen top tressle trees

G23/3 Plan and elevation of mizzen top cross trees

G23/4 Plan and elevation of mizzen top centre cross tree

G24 **MIZZEN LOWER MAST CAP** (1/96 scale)

G24/1 Plan

G24/2 Side elevation

G24/3 Front elevation

G25 **MIZZEN TOPMAST CAP** (1/96 scale)

G25/1 Plan

G25/2 Side elevation

G25/3 Front elevation

G26 **DETAILS OF DRIVER BOOM JAWS** (1/48 scale)

G26/1 Plan

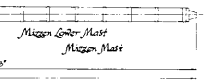
G26/2 Elevation

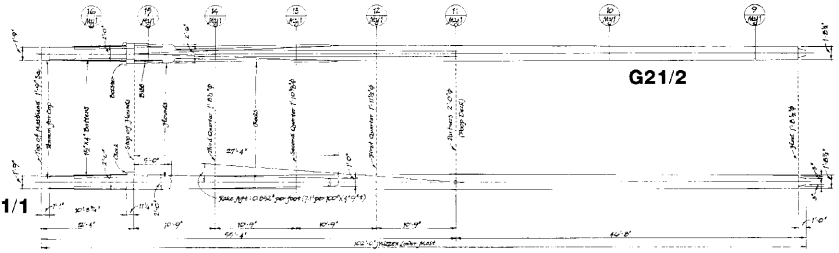
G27 **DETAIL OF DRIVER GAFF JAWS** (1/48 scale)

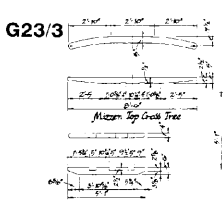
G27/1 Plan

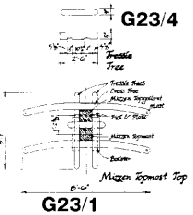
G27/2 Elevation

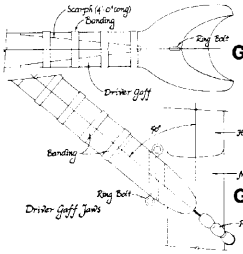
G28 **ENSIGN STAFF** (1/192 scale)

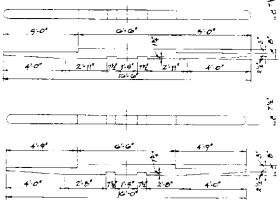

Mizzen Lower Mast
Mizzen Mast

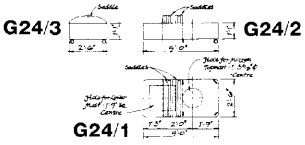

G21/2
G21/1

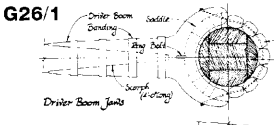

G23/3
Mizzen Top Crosstree
G23/2

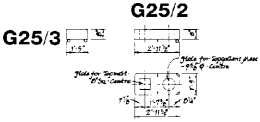

G23/4
Mizzen Topmast Top
G23/1

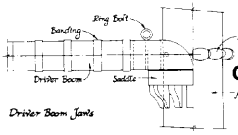

Scarph (4'-0" long)
Bending
Ring Bolt
G27/1
Driver Gaff
Hounds
Bending
Mizzen Mast
Ring Bolt
Driver Gaff Jaw's
Parrel
G27/2

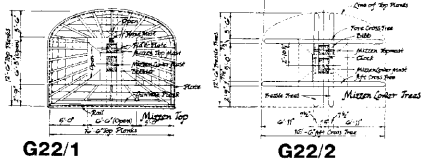

G22/5
G22/4
G22/3

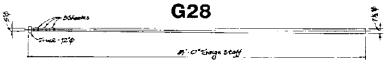

G24/3
G24/2
G24/1


G26/1
Driver Boom
Bending
Saddle
Ring Bolt
Parrel
Mizzen Mast
Scarph (4'-0" long)
Driver Boom Jaws


G25/2
G25/3
G25/1

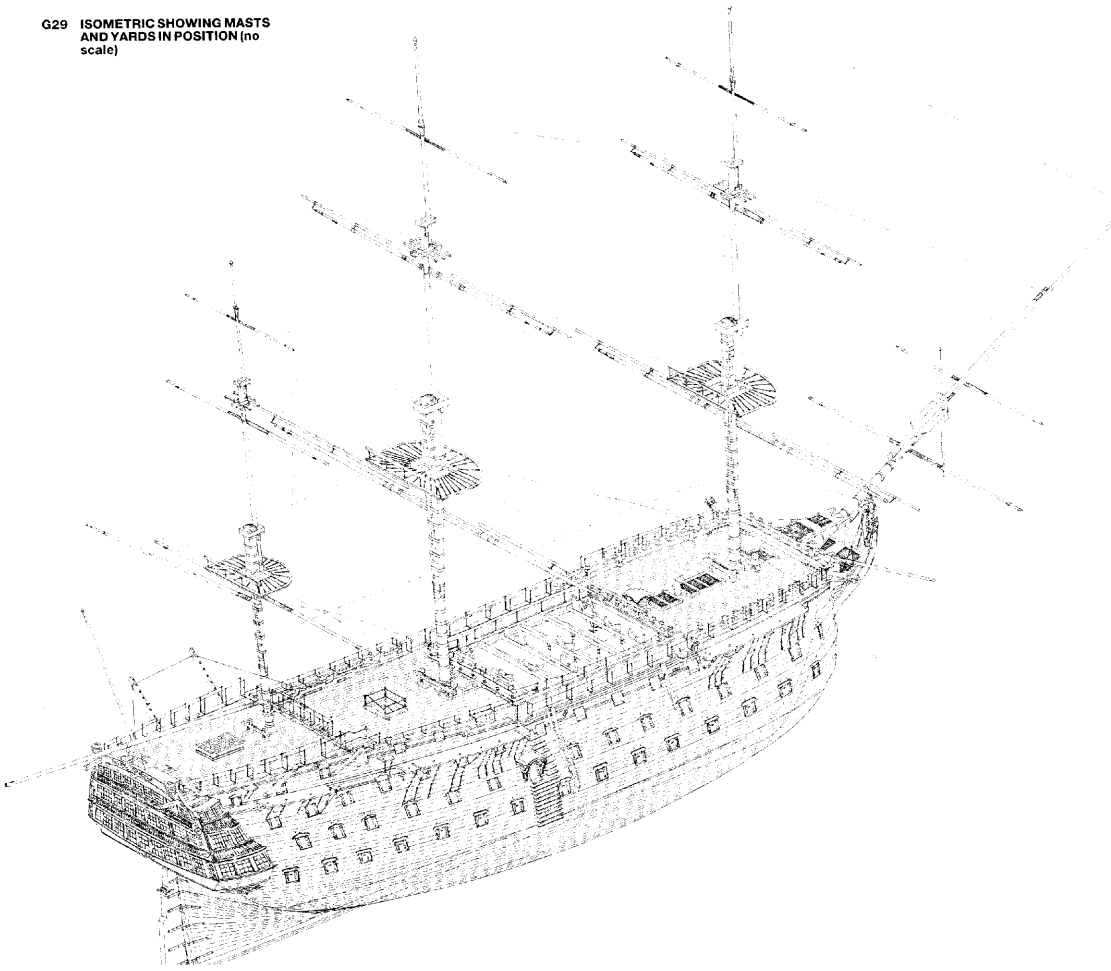

Bending
Ring Bolt
Parrel
Driver Boom
Saddle
G26/2
Mizzen Mast
Driver Boom Jaws


Mizzen Top
G22/1
G22/2


G28

G Masts and yards

G29 ISOMETRIC SHOWING MASTS AND YARDS IN POSITION (no scale)

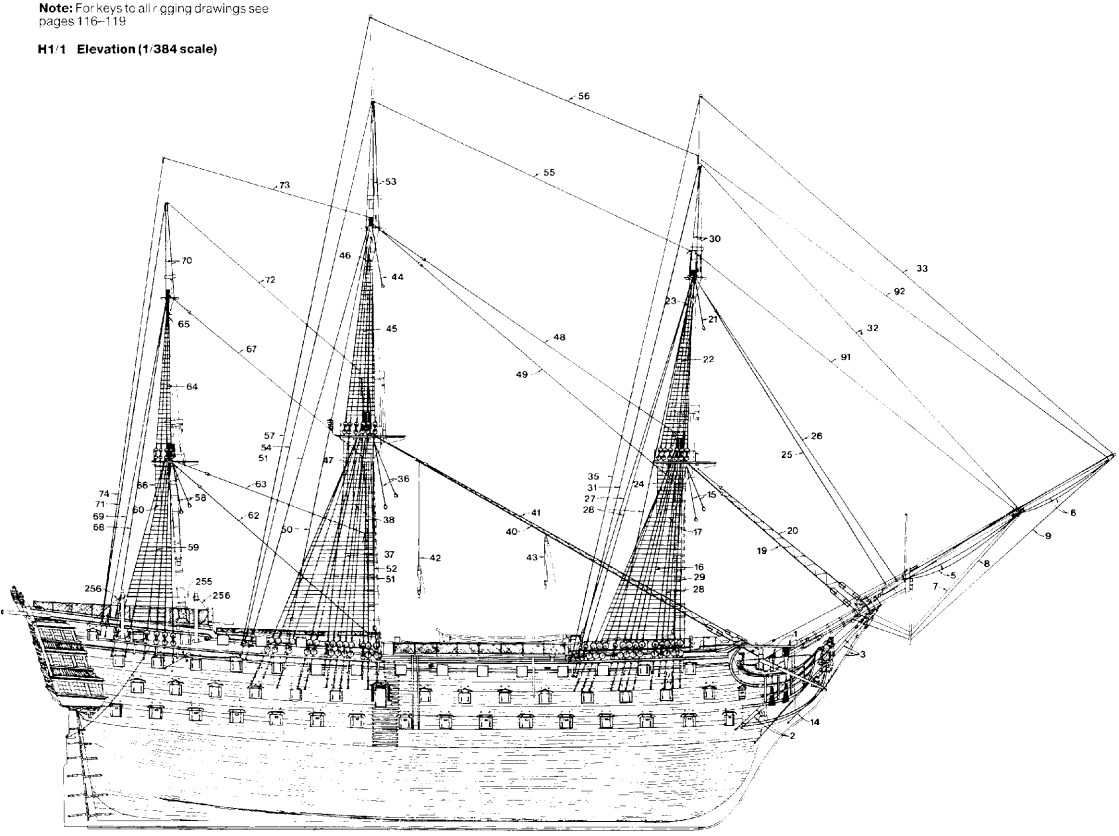


H Rigging

H1 STANDING RIGGING

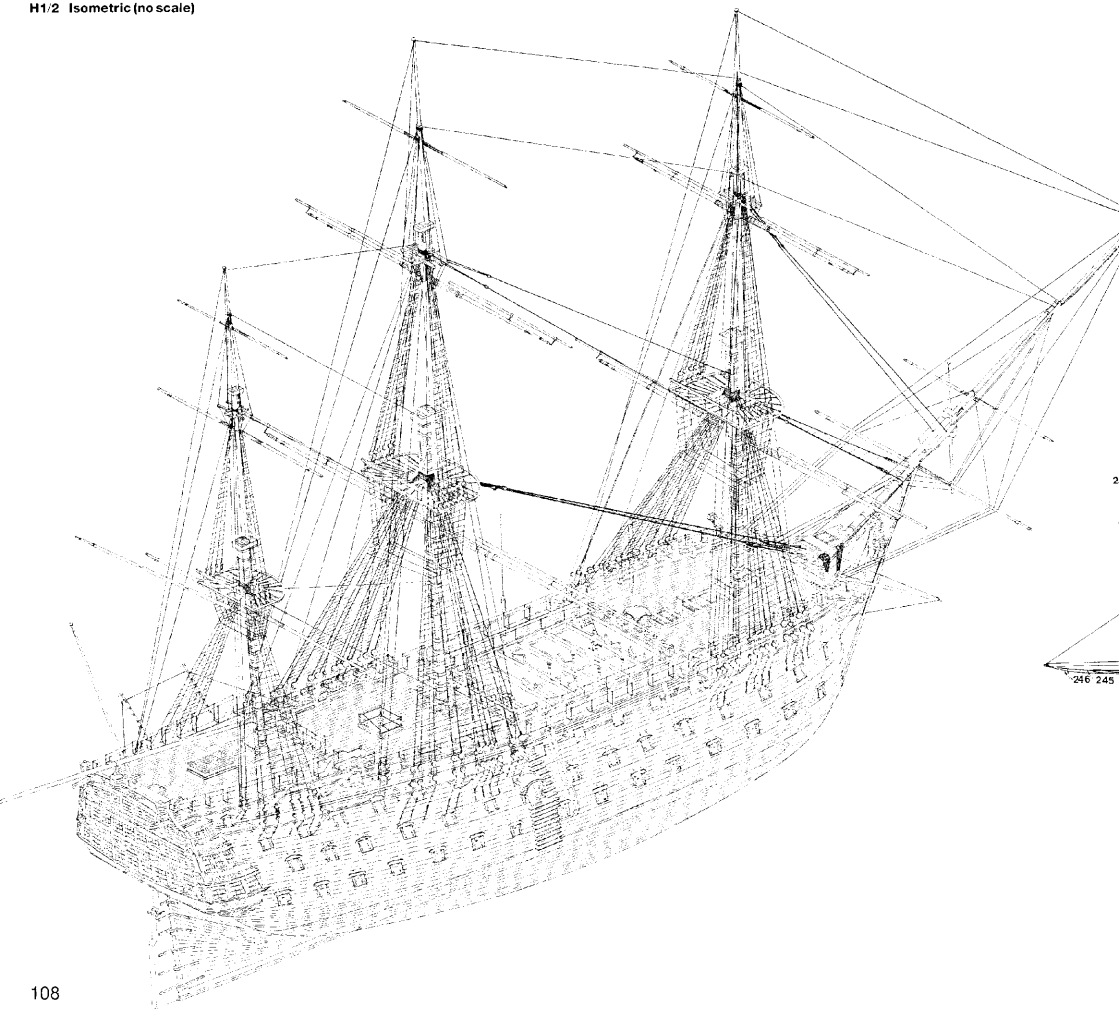
Note: For keys to all rigging drawings see pages 116–119

H1/1 Elevation (1/384 scale)



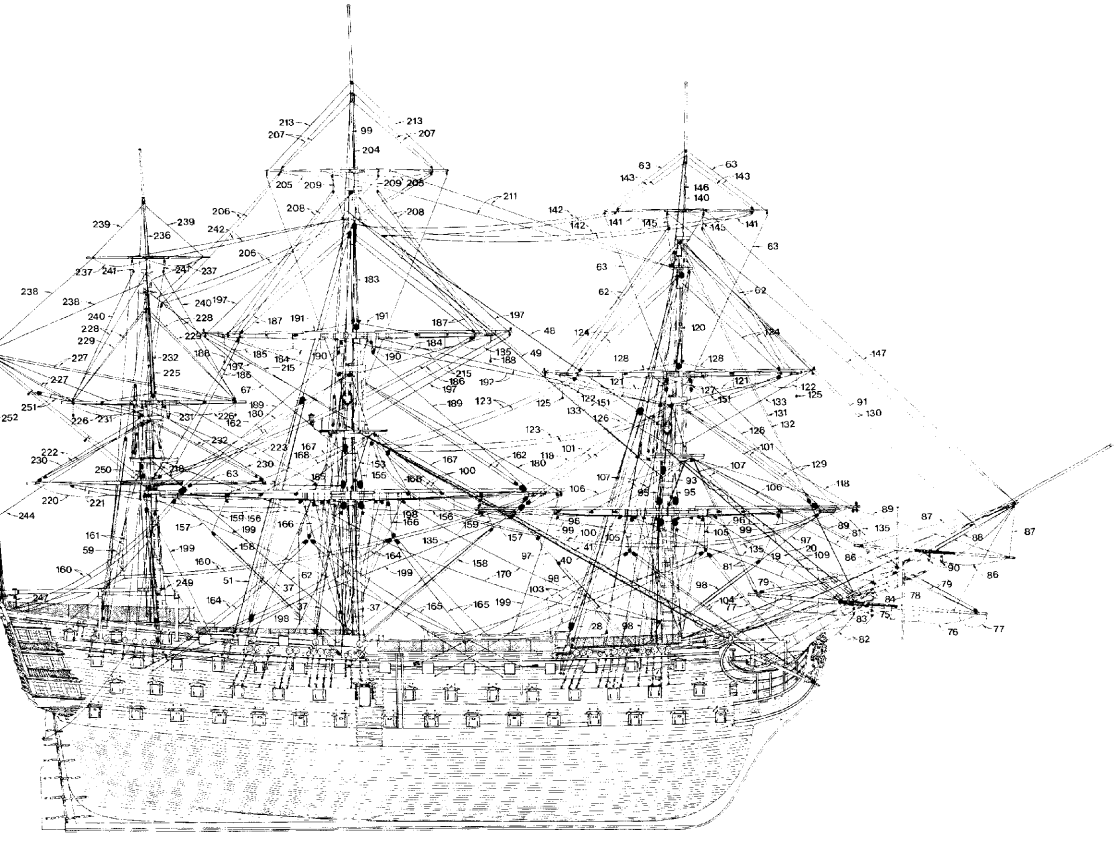
H Rigging

H1/2 Isometric (no scale)



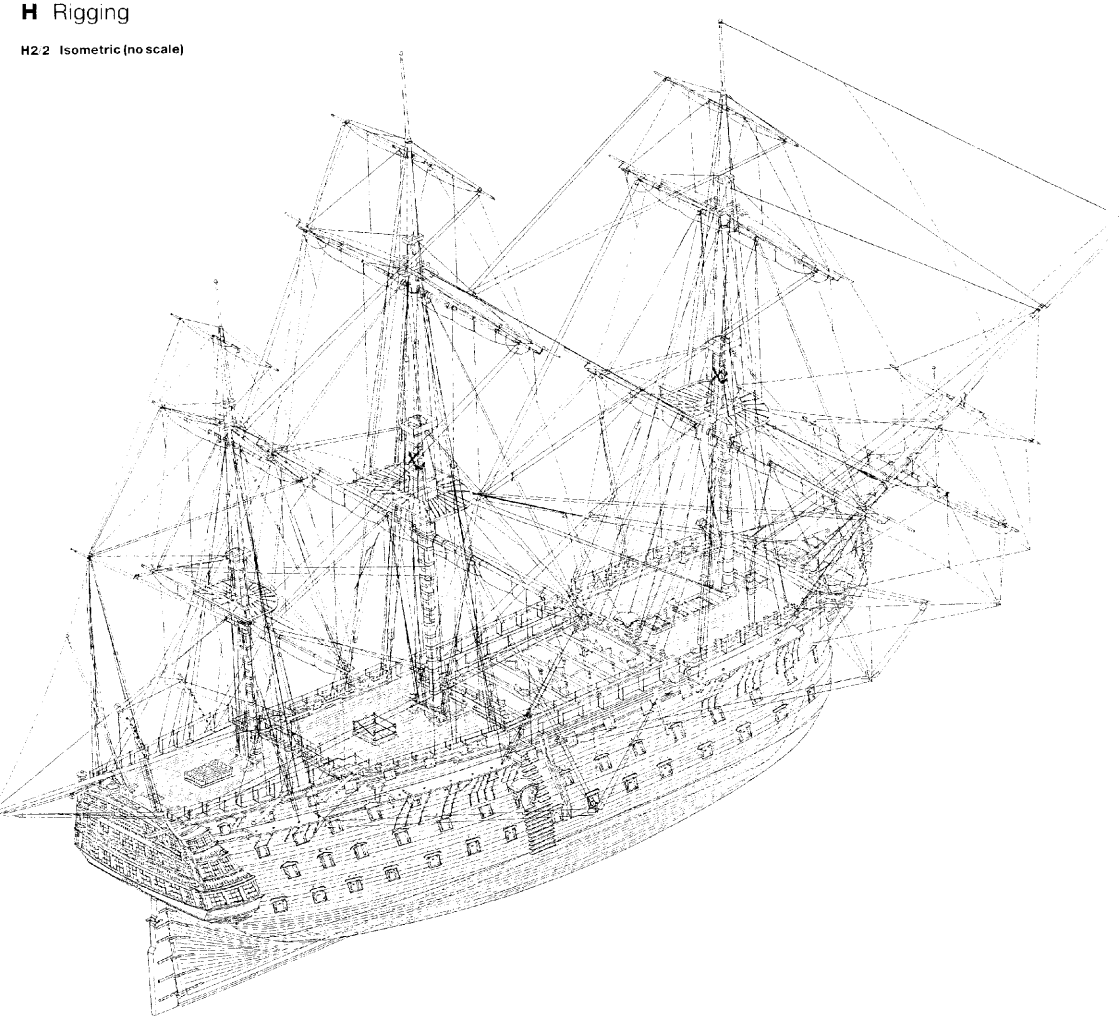
H2 RUNNING RIGGING

H2/1 Elevation (1/384 scale)



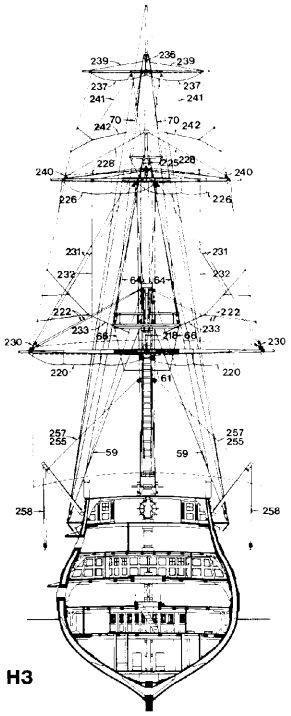
H Rigging

H2·2 Isometric (no scale)

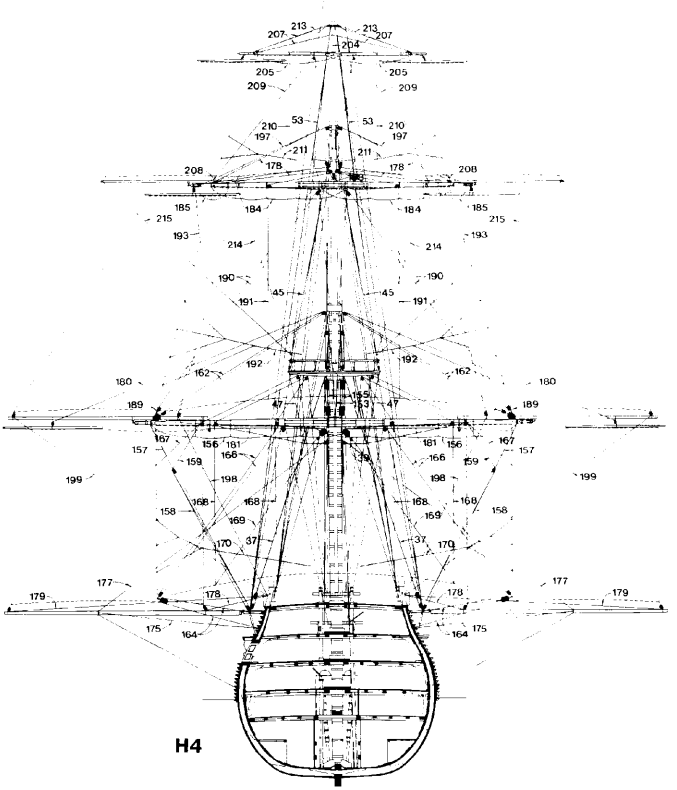


H3 **MIZZEN MAST RIGGING (1/384 scale)**

H4 **MAIN MAST RIGGING (1/384 scale)**



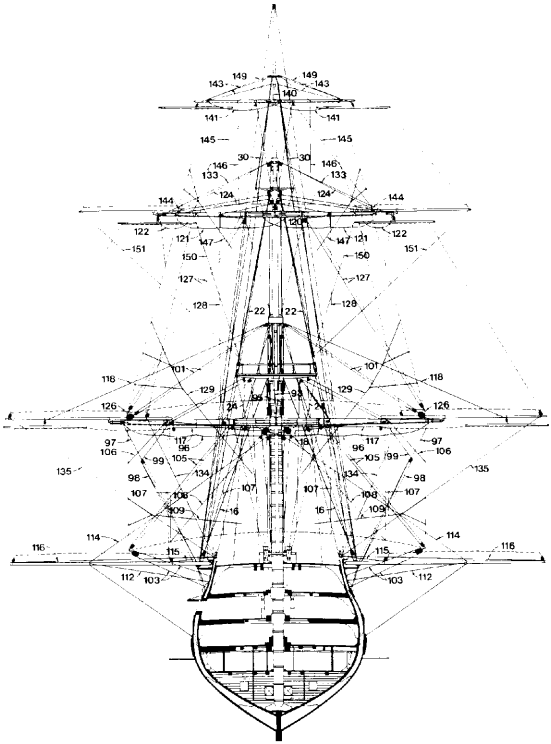
H3

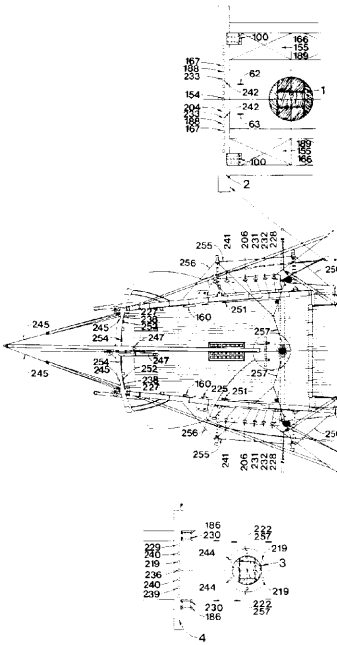


H4

H Rigging

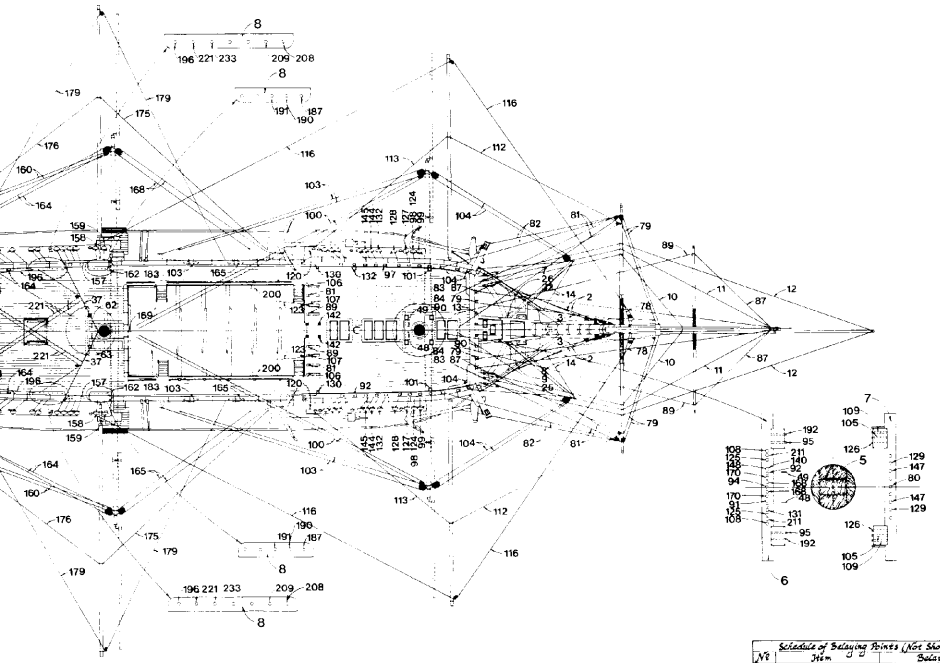
H5 FORE MAST RIGGING (1/384 scale)





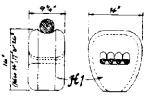
H6 BELAYING PLAN (1/384 scale)

1 Main mast
2 Fore brace bitts
3 Mizzen mast
4 Mizzen topsail sheet bitts
5 Fore mast
6 Main top bowline bitts
7 Foretopsail sheet bitts
8 Pinrail

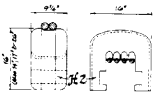


Schedule of Belaying Points (Not Shown on Rigging Plan)		
№	Item	Belays To
33	Flagstaff Stay	Fore Stay Collar - Port Side
59	Main Topgallt Stay	Fore Gallt Frestl Trees
56	Main Topgal Flagstaff Stay	To Fore Top
67	Mizzen Topmast Stay	Collar around Main Mast (Below Cathapins)
72	Mizzen Topgal Mast Stay	Main Galler Trestl Trees
75	Main Topgal Flagstaff Stay	To Main Top
143	Fore Topgallt Stay	Round Deadeye in Fore Top
146	Fore Topgallant Bowlines	Round Deadeye in Fore Top
207	Main Topgallant Sfts	Round Deadeye in Main Top
210	Main Topgallant Bowline	Round Deadeye in Main Top
259	Mizzen Topgallant Sfts	Round Deadeye in Mizzen Top

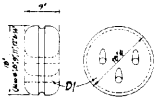
H Rigging



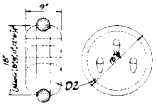
H7



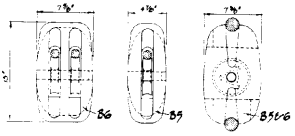
H8



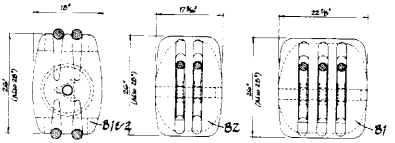
H9



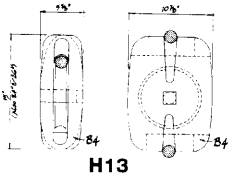
H10



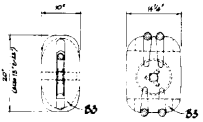
H11



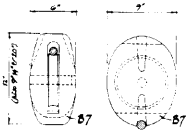
H12



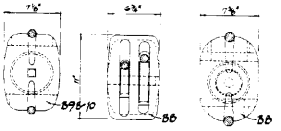
H13



H14

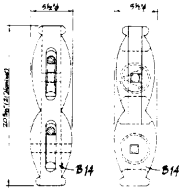


H15

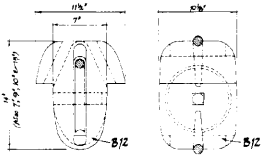


H16

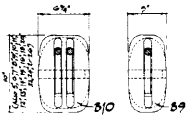
H17 SISTER BLOCKS
H18 CLEW GARNET
H19 COMMON SINGLE AND DOUBLE BLOCKS
H20 SINGLE SHOULDER BLOCK
H21 LONG TACKLE BLOCK
H22 SHROUD CLEAT
H23 SHROUD TRUCK
H24 BULL'S EYE
H25 PARRAL



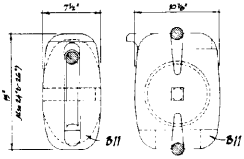
H17



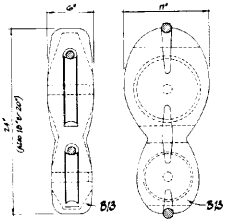
H18



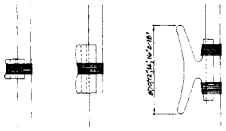
H19

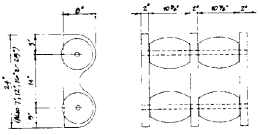


H20



H21


H24 H23 H22


H25

Standing Rigging

Item & No	Name	Quantity	Circumference	Length (fathoms)	Notes	Blocks/Hearts Type	Blocks/Hearts Size	Notes
	Bowsprit							
1	Gammoning	2 sets	8"	187		–	–	9 turns per set
	Seizing	2 sets				–	–	
2	Shrouds	2 sets	8"	39		H1	14"	Iron hooks (4)
	Collars	4	6½"	12	wormed, parcelled & served	H2	14"	
Shrouds	Seizings	4	1"	18		–	–	
	Lashings	4	2"	13		–	–	
	Lanyards	4	3½"	22		–	–	
3	Bobstays	3	8"	38		H1	14"	2 hooks, 2 thimbles
	Collars	3	8½"	9	wormed,	H2	14"	
Bobstays	Seizings	3	1½"	35	parcelled &	–	–	
	Lashings	3	2"	10	served	–	–	
	Lanyards	3	4"	20		–	–	
4 *	Horses	2	5"	22		–	–	4 thimbles
	Lanyards		2"	6	* Not Shown on Drawings			
	Jibboom and Flying Jibboom							
	Heel Lashing	1	1"	14		–	–	4 turns round jibboom
5	Jibboom Horses	2	4"	22		–	–	knots at 3' o/c
6	Flying Jib Horses	2	4"			–	–	knots at 3' o/c
7	Inner Martingale	1	4"			B9	12"	through jib traveler thimble
8	Outer Martingale	1	4"			B9	12"	
9	Flying Martingale	1	4"			B9	12"	
10	Traveling Guy	2	4½"			B10	11"	
	Traveling Guy Fall	2	3"			B9	11"	
11	Guy Pendant	1 pr	4½"	34		B10	11"	Strapping: 4" - 1½ fathoms
	Guy Pend. Fall	2	3"	36		B9	11	3" - 2 fathoms
12	Flying Jibboom Guy	1 pr.	3"	44		B10	11"	3" & 4" Strapping
	Fly. Jib. Guy Fall	2	3"	30		B9	11"	
13	Outhaul *	1	3½"	26	* Not Shown	B9	12"	2½" Tackle Fall
14	Boomkin Stays	1 pr.	4½"	16				
	Fore Mast							
	Pendants of Tackles	2 pr.	11"	19	wormed,	B9	24"	2 Blocks
15	Seizing		1½"	8	parcelled &	–	–	
	Strapping		7½"	4	served	–	–	
16	Shrouds	10 pr.	11"	260		D1	18"	22 deadeyes
	Swifters	1 pr.	11"		wormed,	D2	18"	22 deadeyes
	Seizings, eye	10	1½"		parcelled &	–	–	
Shrouds	Seizings, throat	22	1½"		served	–	–	
	Seizings, end	22	1½"			–	–	
	Lanyards	22	5½"			–	–	
	Ratlines		1½"			–	–	
17	Futtock Staves	1 pr	8"		served	–	–	oak battens
18	Catharpin Legs	6	7"	21	served	–	–	Shrouds 4 through 9
	Seizings	12	1½"			–	–	
19	Fore Stay	1	18"	16	wormed,	H1	26"	eye & mouse
	Seizings	3	2"	25	parcelled &	–	–	
Fore Stay	Lanyard		6"	17	served	–	–	
	Collar, double		9½"	8½	wormed,	H2	26"	
	Seizings	2	1½"	12	parcelled &	–	–	
	Lashings		2½"	6	served	–	–	
20	Fore Preventer Stay	1	11½"	15	wormed, parcelled &	H1	16"	eye & mouse
	Lanyard		4½"	10	served	–	–	
Fore Preventer Stay	Collar, double		6½"	7	wormed,	H2	16"	
	Seizings	2	1½"	18	parcelled &	–	–	
	Lashing		2½"	6	served	–	–	
	Fore Topmast							
	Pendants of Tackles	1 pr.	5½"	7	wormed,	B9	11"	
21	Falls	2	2½"	60	parcelled &	B10	11"	
	Strapping		3½"	4	served	–	–	
22	Shrouds	6 pr.	7"	120		D1	11"	12 Deadeyes
	Seizings, eye	12	1"		wormed,	D2	11"	12 Deadeyes
Shrouds	Seizings, throat	12	1"		parcelled & served	B14	21"	2 Blocks
	Seizings, end	12	¾"			–	–	
	Lanyards	12	3½"	30		–	–	
	Ratlines		1½"			–	–	
23	Futtock Staves	1 pr	5"		served			oak battens
	Futtock Shrouds	6 pr	7"	40	served	–	–	
24	Seizings, upper	12	1"	72		–	–	
	Seizings, lower	12	¾"	63		–	–	
25	Fore Topmast Stay	1	8½"	24	wormed, parcelled & served	B13	24"	eye & mouse
	Tackle		3½	24		B9	14"	
Stay	Seizings		1½"	6		–	–	
	Seizings		¾"	6		–	–	
	Strapping		4"	3		–	–	
26	Preventer Stay	1	6½"	24	wormed, parcelled & served	B13	18"	eye & mouse
	Tackle		3	24		B9	12"	
Prev. Stay	Seizings		1"	6		–	–	
	Strapping		4"	3		–	–	
27	Shifting Backstay	1 pr.	7"	40		B7	12"	Single Block
	Tackles		3"	48		B7	12"	Double Block
	Strapping		4"	8		–	–	
28	Standing Backstay	3 pr.	7"	156		D1	12"	6 Deadeyes
	Seizings, eye	3	1"	16	wormed &	D2	12"	6 Deadeyes
Standing Backstay	Seizings, throat	6	1"	28	served	–	–	
	Seizings, end	6	¾"	24		–	–	
	Lanyards	6	3½"	30		–	–	
29	Breast Backstay	1 pr	7"	40		B7	14"	2 single blocks
Breast Backstay	Runners	2	5"	9	wormed &	B7	12"	2 double blocks
	Falls	2	2½"	20	served	–	–	
	Strapping		3"	3		–	–	
	Fore Topgallant Mast							
30	Shrouds	3 pr.	4"	82		–	–	
	Lanyards	6	2"	12		–	–	
	Staps		2½"			–	–	
31	Standing Backstay	1 pr	4"	46		D1	9"	2 deadeyes
	Lanyards	2	2"	10		D2	9"	2 deadeyes
32	Stay	1	4½"	32	served for 3'	B9	7"	
	Tackle		2"	18		B10	7"	
	Strapping		2½"	1½		–	–	
33	Fagstaff Stay	1	2"			–	–	
34	Shifting Backstay	1 pr	4"	46		B9	7"	2 Blocks
*	Tackles	2	2"	20		B10	7"	2 Blocks
	Strapping		2"	1½	* Not Shown on Drawings			
35	Royal Backstays	1 pr.	3"	56		–	–	
	Main Mast							
36	Pendants of Tackles	2 pr	11	20	wormed,	B9	24"	2 Blocks
	Seizings		1½"	8	parcelled &	–	–	
	Strapping		7½"	4	served	–	–	
37	Shrouds	10 pr.	11"	280		D1	18"	22 deadeyes
	Swifters	1 pr	11"		wormed,	D2	18"	22 deadeyes
	Seizings, eye	20	1½"		parcelled &	–	–	
Shrouds	Seizings, throat	22	1½"		served	–	–	
	Seizings, end	22	1½"			–	–	
	Lanyards	22	5½"			–	–	
	Ratlines		1½"			–	–	
38	Futtock Staves	1 pr	8"		served	–	–	oak battens
39	Catharpin Legs	6	7"	21	served	–	–	Shrouds 4 through 9
	Seizings	12	1½"			–	–	
40	Main Stay	1	19	22	wormed,	H1	26"	eye & mouse
	Seizings	4	2	25	parcelled &	–	–	
	Lanyard		6	20	served	–	–	
Main Stay	Collar		14	15		H2	26"	
	Worming		2"	60	wormed,	–	–	
	Seizings	3	2"	20	parcelled &	–	–	
	Lashings		4"	25	served	–	–	
41	Preventer Stay	1	13"	22	wormed, parcelled &	H1	17"	eye & mouse
	Lanyard		5	10	served	–	–	
Preventer Stay	Collar, double		6	25	wormed,	H2	17"	
	Seizings	3	1½"	20	parcelled &	–	–	
	Lashing		2"	8	served	–	–	
42	Stay-tackle pendant	1	6"	5		B10	18"	
	Fall		3½"	46		B9	20"	
Mainstay Pendant	Strapping		4½	3½		–	–	
	Seizing		¾"	12		–	–	
	Lashing		1½"	12		–	–	
43	Fore stay tackle	1				B10	18"	
	Fall		3½"	46		B9	20"	
Mainstay Tackle	Strapping		4½"	3½		–	–	
	Seizing					–	–	
	Main Topmast							
	Pendants of Tackles	1 pr	5½"	7½	wormed,	B9	11"	
44	Falls	2	2½"	60	parcelled &	B10	11"	
	Strapping		3½"	4	served	–	–	
45	Shrouds	6 pr.	7"	120		D1	11"	12 Deadeyes
	Seizings, eye	6	1"	36	wormed,	D2	11"	12 Deadeyes
Shrouds	Seizings, throat	12	1"	63	parcelled &	B14	21"	2 Blocks
	Seizings, end	12	¾"	54	served	–	–	
	Lanyards	12	3½"	30		–	–	
	Ratlines		1½"			–	–	
46	Futtock Staves	1 pr	5"		served	–	–	oak battens
47	Futtock Shrouds	6 pr.	7"	40	served	–	–	
Futtock Shrouds	Seizings, upper	12	1	72		–	–	
	Seizings, lower	12	¾"	63		–	–	
	Ratlines		1½"			–	–	
48	Main topmast Stay	1	8½"	30	wormed, parcelled & served	–	–	eye & mouse
	Collar	1	7"	4		B7	20"	
Stay	Seizing		1½", ¾"					
	Lanyard		4"					
49	Preventer Stay	1	6½"	28	wormed, parcelled & served			eye & mouse
	Collar	1	5"	3				
Preventer Stay	Lashing		1½"					
	Seizings		1"	8				
	Lanyard							
50	Shifting Backstay	1 pr.	7"	42		B7	12"	Single Block
	Tackles	4	3"	48		B7	12"	Double Block
	Strapping		4"	8		–	–	
51	Standing Backstay	3 pr	7"	172		D1	12"	6 Deadeyes
	Seizings, eye	3	1"	16	wormed,	D2	12"	6 Deadeyes
Standing Backstay	Seizings, throat	6	1"	28	parcelled &	–	–	
	Seizings, end	6	¾"	24	served	–	–	
	Lanyards	6	3½"	30		–	–	
52	Breast Backstay	1 pr.	7"	42		B7	14"	2 single blocks
Breast Backstay	Runners	2	5"	9	wormed &	B7	12"	2 double blocks
	Falls	2	2½"	20	served	–	–	
	Strapping		3"	3		–	–	
	Main Topgallant Mast							
53	Shrouds	3 pr.	4"	90		–	–	
	Lanyards	6	2"	12		–	–	
	Straps		2½"			–	–	
54	Standing Backstay	1 pr.	4"	50		D1	9"	2 deadeyes
	Lanyards	2	2"	10		D2	9"	2 deadeyes
55	Stay	1	4½"	26	served for 3'	–	–	
	Collar	1	3½"			B9	13	
Stay	Seizing		¾"			–	–	
	Span		3½"			–	–	
56	Flagstaff Stay	1	2"	30		–	–	
	Collar					–	–	
57	Royal Backstay	1 pr.	3"	62		–	–	
	Mizzen Mast							
58	Burton Pendants	1 pr.	5"	8	wormed,	B9	11"	
	Falls	2	3"	76	parcelled &	B10	11"	
	Strapping		3½"	4	served	–	–	
59	Shrouds	6 pr.	7"	133		D1	14"	12 deadeyes
	Seizings, eye	6	1"		wormed,	D2	14"	12 deadeyes
Shrouds	Seizings, throat	12	1"		parcelled & served	–	–	
	Seizings, end	¾"				–	–	
	Lanyards	12	3½"	86		–	–	
	Ratlines		1½"			–	–	
60	Futtock staves	1 pr	5"		served	–	–	oak batten
61	Catharpin Legs	2	5"		served	–	–	shrouds 5 & 6
	Seizings					–	–	
62	Mizzen Stay	1	8½"	17	wormed, parcelled, & served	–	–	eye & mouse
	Seizings	3	1"	8		–	–	
Mizzen Stay	Lanyard		3½"	6		–	–	
	Collar		7"	3½	served	–	–	
	Seizing		1"	3		–	–	
	Lashing		1½"	3		–	–	
63	Preventer Stay	1	7"		wormed, parcelled & served	–	–	eye & mouse
	Seizings	3	¾"	8		–	–	
Preventer Stay	Lanyard		3"	6		–	–	
	Collar		6"	3½	served	–	–	
	Seizings		¾"	3		–	–	
	Lashing		1½"	3		–	–	
	Mizzen Topmast							
64	Shrouds	4 pr.	4½"	76	served,	D1	8"	8 Deadeyes
Shrouds	Seizing				Tarred Lines	D2	8"	8 Deadeyes
	Lanyards	8	2½"			–	–	
	Ratlines		1"			–	–	
65	Futtock Staves	1 pr.	5"			–	–	
66	Futtock Shrouds	4 pr.	4½"	24	served,	–	–	
	Seizings, upper	8			Tarred Lines	–	–	
	Seizings, lower	8				–	–	
	Ratlines		1"			–	–	
67	Topmast stay	1	5"	16	served	–	–	eye & mouse
	Collars	2	4"	6		–	–	
	Lanyards	2	6"			–	–	
68	Shifting Backstay	1	4½"	15		B7	9"	Single Block
	Tackles		2½"	12		B7	9"	Double Block
	Strapping		3"	4		–	–	
69	Standing Backstay	1 pr	4½"	36	Tarred Lines	D1	8"	2 Deadeyes
	Seizings					D2	8"	2 Deadeyes
	Lanyards	2	2½"			–	–	
	Mizzen Topgallant Mast							
70	Shrouds	2 pr.	2½"	47		–	–	
	Lanyards	4	1½"			–	–	
	Straps		2"				–	
71	Backstays	1 pr.	2½"	38		D1	6"	2 Deadeyes
	Lanyards	2	1½"	3½		D2	6"	2 Deadeyes
72	Stay	1	3"	20				
	Collar	1	2½"					
	Seizings		¾"					
	Span		2½"					
	Lanyard		1½"	3½				
73	Flagstaff Stay	1	2"	25				1½" (circ. collar)
74	Royal Backstay	1 pr.	2"	46				

Running Rigging

Item & No	Name	Quantity	Circumference	Length (Fathoms)	Notes	Blocks/Hearts Type	Blocks/Hearts Size	Notes
	Spritsail Yard & Sail							
75	Slings	1pr	6½"	6				
	Seizing & Racking		1½"	10				
76	Horses	2	3"	6				
	Stirrups	6	3"	6				
77	Flemish horses	2	3					
78	Lifts, standing	2	4½"	10				
	Strapps	2	4½"	4				
	Canyards	2	2"	6				
79	Lifts	2	3½"	58				
	Span		3½"	4		B9	12"	2 Blocks
	Block Strapping					B9	12"	2 Blocks
	Seizing		¾"	9				
80 *	Halliard	1	3½"	40		B9	12"	
	Strapping		4½"	3		B15	24"	
	Seizing/Racking				* Not Shown on Drawings			
81 Brace	Braces	2	3½"	75	2 Blocks (B8-11) under Fore top			
	Straplgard arm	2	3½"					
	Block Strapping	2	3½"	10		B9	12"	Single Blocks
82	Sheets	2	5"	40	Single, cabled			
83	Clue Lines	2	2½"	45		B12	10"	
	Strapping	2	3"	6		B9	10"	
84	Buntlines	2	2"	34	Single			
	Block Strapping	2	2½"	2		B7	8"	2 Blocks
	Strapping	2	2½"					
	Spritsail Topsail Yard & Sail							
85	Parrel #	2	2½"	5		P	12"	# Not Shown on Drawings
86	Horses	2	3"	9				
87	Lifts	2	2½"	46	Single			
	Strapping							
88	Halliard	1	2½"	28	Single			
	Strapping		2½"	2½		B10	9"	
	Lashing		¾"	6		B9	9"	
89	Braces #	2	2½"	60	Single	B9	9"	# Single Blocks under
	Strapping		2½"	1				Fore top
90	Clue Lines	2	2"	44	Single	B12	7"	2 Blocks
	Strapping	2	2"	2		B9	7"	2 Blocks
	Tiddeann and Flying Tiddeann							
91	Tid Stay	1	1"	28		B10	9"	
	Tackle Fall		2½"	25		B9	9"	
	Strapping		2½"	1				
92	Tid Halliard	1	3½"	41	Single	B9	9"	
	Strapping		3½"					
	Whip Tail"	1	2¾"	34				
	Fore Yard & Sail							
93	Slings	1pr	12"	9	Horses provided			
	Strap	1	12"	4	& served			
	Seizings	2	2	16				
	Lanyards		3½"	7				
94 #	Fruit Trusnnes	2	8"	17	Served for ½	B10	11"	2 Blocks
	Falls	2	3"	56		B10	11"	2 Blocks
	Strapping	2	3½"	4				
	Eye Seizings	2	1½"	14	* Not Shown on Drawings			
	Nave Line	1	2	20		B9	7"	Block under crosstrees
95	Tear Falls	2	7½"	120		B1	20"	2 Blocks
	Strapping	2	2½"	14	served	B12	20"	2 Blocks
	Seizing		2"	52				
	Lashing/nunkhead	2	4½"	40	served			7 turns on masthead
	Lashing/nunkhead	2	3½"	12				
	Swivellers	2	6"	6	served			
96	Horses	2	5½"	20				
	Stirrups	8	4"	16				
	Seizings	4	¾"	10				
	Lanyards		2"	6				
97	Jeer Falls Bonnets	2	7"	10		B10	13"	
	Falls	2	3½"	106		B9	13"	
	Strapping		5½"	9				
	Seizing		1½"	6				
98	Inner Reefing Line	2	2½"	40		B9	8"	2 Blocks
99	Outer Reefing Line	2	2"	40		B9	7"	4 Blocks
	Strapping		2"	6				
100	Braces	2	4½"	110				
	Strap yard arm	2	5½"	4				
	Strapping block	2	6½"	2		B9	10"	2 Blocks
	Seizing		¾"					
	Lashing		1½"	24				
101	Lifts #	2	4½"	106		B9	10"	2 Blocks - see note
	Span (for cap)	1	6½"	8		B9	16"	2 Blocks at cap
	Short span		4½"	2½				Note: Lift Block is rigged in
	Strapping		5"	6				strap of topsail sheet
	Seizing		¾"	18				block
102	Upper Falls #	2	2½"	80	5½" Strapping #	B10	10"	2 Sngl. Blocks, 2 Double Blks

Running Rigging

Item & No	Name	Quantity	Circumference	Length (Fathoms)	Notes	Blocks/Hearts Type	Blocks/Hearts Size	Notes
103	Sheets	2	7½"	84		B4	24"	2 Blocks
Sheets	Strapping		7½"	4½"				
	Seizing		1"	14				
	Stoppers	2	5½"	4				
104	Tacks	2	7"			B11	24"	2 Blocks
	Strapping		7½"	6		B11	24"	2 Blocks on Boomkins
Tacks	Seizing		1"	8				
	Stoppers	2	5½"	5				
	Canyard's	2	2"	6				
105	Clue Lines	2	4"	20		B12	15"	2 Blocks
	Strap yard		4"	8		B12	15"	2 Blocks
Clues	Strapping		4"	2				
	Seizing		⅞"	12				
	Lashing		1"	14				
106	Leech Lines	2	2½"	40		B8	11"	2 Blocks with spurnhook
	Falls	2	2½"	50		B9	10"	2 blocks traced
Leech Lines	Strapping yard		3½"	12		B9	10"	2 Blocks
107	Bunt Lines	4	3"	48		B10	11"	4 blocks under top
	Strapping	4	4"	2		B9	10"	4 blocks
108	Slab Lines	2	2½"	60				2 blocks Strapped with
	Strapping		2½"	4		B9	9"	2 of Quarter Blocks
109	Bowlines	2	4½"	60				
Bowlines	Bridles	2	4½"	6				
	Strapping		4½"	4½				
	Seizing		⅞"	12				
	Lashing		2½"	12	Fore Stay Collar	B9	16"	2 Blocks
110	Topsail Halyard	1	4"	30		B9	15"	2 Blocks
* Stay Sail	Sheets	2	4"	30		B9	15"	2 Blocks
	Tack		5½"	2				
	Downhauler	1	2½"	28		B9	9"	1 Block
	Strapping		2½"	1	* Not Shown on Drawings			
					Fore Upper Studding Sail			
111	Boom Tackle	2	2½"	24		B9	9"	4 Blocks
*	Strapping	2	2½"	2	* Not Shown on Drawings			
112	Fore Guy	2	3"	60		B9	11"	2 Blocks
	Strapping	2	3"	2				
113	After Guy	2	3"	50		B9	11"	2 Blocks
	Strapping	2	3"	2				
114	Topping Lift	2	3½"	40				
	Span	1	4"	10		B9	12"	2 Blocks
115	Sheets	2pr	3"	15				
116	Tacks	2pr	3½"	60		B9	12"	4 Blocks
	Strapping	2	3½"	16		B9	12"	2 Blocks
117	Inner Halyard	2	3"	48		B9	12"	4 Blocks
118	Outer Halyard	2	3½"	80		B9	12"	4 Blocks
					Fore Top Yard & Sail			
119	Parrel Ropes	2	5½"	14		P	24"	
*	Rocking Seizing		1"	20	* Not Shown on Drawings			
120	Tye	1	6"	44				
	Strapping		6½"	8	served			
	Seizing		1"	12				
121	Yard arm Horses	2	2½"	15	served	B9	20"	2 Blocks
	Gobers, yard		2"	9	served	B3	20"	1 Double Block
	Horses	2	4"	12				
	Stirrups	6	3"	8½				
122	Flemish Horses	2	3"					
123	Braces	2	3½"	104		B9	14"	2 Blocks
	Strapping	2	4"	8		B9	14"	2 Blocks
124	Lifts	2	3½"	72		B14	21"	Lower Sheave, Topmast Sheave
	Beckets	2	4"	5	Topmast Cap Span C (Belays to shroud Cleat) - 16"			
Lifts	Strapping		4"	8		B9	12"	2 Blocks
	Seizing		¾"	20				
125	Roat Falls/Pends	2	4"	44	Upper on Sheave	B14	21"	Upper Sheave Topmast Sheave
	Falls	2	2½"	60		B10	9"	4 Blocks
	Strapping		3½"	2				
	Lashing		1½"	12				

KEY TO ALL RIGGING DRAWINGS
Note: As well as identifying rigging, this key gives sizes and quantities of rope; number, type and sizes of blocks, and related details

Running Rigging

Item & No	Name	Quantity	Circumference	Length (Fathoms)	Notes	Blocks/Hearts Type	Blocks/Hearts Size	Notes
	Fore Top Yard & Sail - Continued							
126	Sheets	2	8"	96				
Sheets	Sheets Blocks	2	8"	9		B11	24"	2 Blocks
	Straps	2	6"	6	straight	B4	20"	2 Blocks
	Lashers	2	2½"	10				
	Seizings	2	1½"	24				
	Span		5½"	10				
	Stoppers	2	6½"	8				
127	Clue Lines	2	4"	90		B12	14"	2 Blocks & Cleat (C) - 18"
	Strapping		4"	8		B12	14"	2 Blocks
128	Buntlines	2	3"	72	Cleat (C) - 14"	B9	11"	2 Blocks (strapped to Tye Blocks)
	Strapping		3"	3		B9	11"	2 Blocks
	Ropes through B9 - 11" under mid. top crosstrees, through Truck (T) to Shroud Cleat (C)							
129	Bowlines	2	3½"	68		B9	12"	2 Blocks on Bowsprit Cap
	Bridles	4	3½"	16				
	Strapping	1	3½"	2				
	Seizing		1½"	12				
130	Halliard's	2	3½"	130		B10	14"	2 Blocks
	Strapping		4"	4		B9	14"	4 Blocks
131	Staysail Stay	1	4"	24				
	Tackle		2½"	16		B9	9"	1 Block
132	Halliard		3½"	40		B10	9"	1 Block & Cleat (C) - 14"
	Shetts	2	4"	34		B9	13"	1 Block
Stay Sail	Strapping		4"	1½				
	Downhauler		2½"	30		B9	9"	1 Block
	Strapping		2½"	2				
					Fore Top Studding Sail			
133	Halliards	2	3½"	96		B9	12"	4 Blocks
134	Sheets	2	5"	50		B9	12"	4 Blocks
135	Tacks	2	3½"	14		B9	12"	4 Blocks
136	Downhauler #	2	2"	64	# Not Shown	B9	9"	2 Blocks
137	Boom Tackles	2	2"	80	# Not Shown	B10	8"	2 Blocks
#						B9	8"	4 Blocks
138	Tails & Straps		5½"	18	# Not Shown on Drawings			
#			2½"	6				
					Fore Topgallant Yard & Sail			
139	Parrel Ropes #	2	2"	80		P	12"	# Not Shown
140	Tye		4"	17	Through Sheave in Topgall. Mast	B10	8"	1 Block
	Fall		2"			B9	8"	1 Block - Gone Forward from
141	Horses	2	3"	9				
142	Braces	2	2"	116		B9	8"	4 Blocks
	Strapping	2	2"	4		B9	8"	2 Blocks
143	Lifts	2	2½"	60				4 Thimbles
	Strapping	2	3"	5		B9	7"	2 Blocks
144	Sheets	2	2½"		Through sheave Blocks on Top Yard			
	Strapping	2	3"		Cleat (C) 12"	B9	9"	2 Quarter Blocks
145	Clue Lines	2	2½"	76	Belays to Shroud	B9	7"	2 Blocks, after Cross Trees
	Strapping	2	2½"	4	Cleat (C) - 10"	B12	7"	2 Blocks
146	Buntlines	2	2"	40		B9	7"	2 Blocks in strop round
	Strapping	2	2"	1				Topgallant Masthead
147	Bowlines	2	2"	72				
	Bridles	2	2"					
148	Halliards	2	2½"	50	# Not Shown	B10	8"	1 Block
#	Stoppings	2	2½"	1½		B9	8"	1 Block
					Fore Topgallant Studding Sail			
149	Halliards	2	2½"	80		B9	7"	4 Blocks
150	Shetts	2	2"	23		B9	7"	4 Blocks
151	Tacks	2	2"	50				
152	Downhauler	2	1¾"	22		B9	7"	1 Block
#	Strapping	2	2"	8	# Not Shown on Drawings			
					Main Yard & Sail			
153	Slings	1pr	12"	10	served, parcelled			
Slings	Strap	1	12"	4	& served			
	Lanyard		3½"	7				
154	Trolls pendants	2	8"	18	Served for ½	B10	11"	2 Blocks
# Fore Rigging	Falls	2	3"	64		B10	11"	2 Blocks
	Strapping		3½"	4	# Not Shown on Drawings			
	Eye Seizing	2	1½"	4				
	Nave Line	1	2"	22		B9	7"	Block under Crosstrees
155	Jeer Falls	2	8"	140		B1	28"	2 Blocks
	Strapping		9"	24	served	B2	28"	2 Blocks
	Seizing		2"	32				
	Lashing/nunkhead	2	4½"	44	served			7 turns on masthead
	Lashing/yard	2	3½"	12				
	Swivellers	2	6"	6	served			
156	Horses	2	5½"	22				
	Stirrups	8	4"	16				
	Seizing	4	¾"	10				
	Lanyards		2	6				

Running Rigging

Item #	Name	Quantity	Circumference	Length (fathoms)	Notes	Blocks / Hearts Type	Size	Notes
241	Clue Lines	2	1½"	50		B9	5"	2 Blocks & Cleat (C) 8"
242	Bowlines	2	1½"	48				
	Bridles	4	1½"	3				
243	Staysail Stay	1	2"		#Not Shown on Drawings			
Staysail #	Halyard	1	2"	34		B9	7"	1 Block
	Sheets	2	2"	34		B9	7"	2 Blocks
	Jacks		1½"	5				
	Downhauler	1	1½"	30		B9	7"	1 Block
	Driver Boom							
244	Topping Lifts	2	5"	42		B10	15	2 Blocks
	Span	1			Lower Mast Cap	B9	15"	2 Blocks
	Falls	2	3"			B9	15"	2 Blocks
245	Guy Pendants	1pr	3½"	6		B10	9"	2 Blocks
	Falls	2	2"	40		B9	9"	2 Blocks
246	Horses	2	3"	18				Knots at 3' %
247	Boom Sheets	1	3½"	10		B10	12"	2 Blocks
	Strapping		2"					
248	Brails #	3pr			#Not Shown	B9	7"	6 Blocks
249	Parrel Ropes					P		Trucks only
	Driver Gaff							
250	Throat Halyard	1	4½"	40		B9	15"	1 Block
	Strop				Aft Crosstrees	B10	15"	2 Blocks
	Strapping		4½"	4				
251	Peak Halyard		4½"	40		B9	15"	2 Blocks
	Span, Cap					B10	15"	1 Block
	Strapping		4½"	4				
252	Vang Pendants	2	4½"	12		B10	9"	2 Blocks
	Falls		2½"			B9	9"	2 Blocks
253	Parrel Ropes #				#Not Shown	P		Trucks only
254	Ensign Halyards	1	1½"	25		B9	7"	1 Block
	Strop	1						
	Quarter Davits							
255	Jack Stay	2	4½"		To Thimble in Topping Lift			
256	Guys	4	4½"					
257	Topping Lift	2	6"					
	Strop	1	6½"		Round Mizzen	B9	18"	2 Blocks
258	Falls	4 sets	3½"		Sheaves in Davits	B9	14"	4 Blocks

H Rigging

Running Rigging

Item #	Name	Quantity	Circumference	Length (Fathoms)	Notes	Blocks/Hearts: Type	Size	Notes
197	Yard Tackle Fall	2	7"	11		B40	13"	2 Blocks
	Falls	2	3½"	120		B9	15"	2 Blocks
	Stropping		9½"	9				
	Seizing		1"	16				
168	Jaws Tailing Line	2	2½"	42		B9	8"	2 Blocks
169	Outer Tailing Line	2	2½"	42		B9	7"	4 Blocks
	Stropping		2"	6				
166	Brails	2	4½"	108				
	Strap, under m	2	5½"	4				
Braces	Stropping, Block	2	6"	4		B9	16"	2 Blocks
	Seizings		⅝"	10				
	Casing		1½"	24				
161	Span B/Gaord	2	2½"					
162	Lifts	2	4½"	124		B9	16"	2 Blocks - see note
Lifts	Span (for cap)	1	6½"	9		B9	16"	2 Blocks at cap
	Short Span		4½"	2½				Note: Lift Block is seized
	Stropping		2"	5				in strop of Topsail
	Seizing		⅝"	18				Sheet Block
163	Topsail Tackle #	2	2½"	30	# Not Shown	B900	10"	2 Single Blocks, Double Bits
164	Sheets	2	7½"	90	Cabled	B4	24"	2 Blocks
Sheets	Stropping		7½"	10		B40	24"	2 Blocks in spiders
	Seizing		1⅜"	16				
	Cockers	2	2"	6				
	Stoppers	2	6"	4				
165	Tacks	2	7½"		Cabled	B11	24"	2 Blocks
	Stropping		7½"	6		B11	24"	2 Blocks
	Seizing		1½"	8				
	Stoppers	2	6"	4				
	Gaonards	2	2"	6				
Tacks	Fall Lines	2	4"	180		B12	15"	2 Blocks
	Strap, yard		4"	10		B12	15"	2 Blocks
	Stropping		4"	2				
Clews	Seizing		⅝"	18				
	Gishing		1"	14				
167	Leech Lines	2	2½"	96		B8	11"	4 Blocks with Buntlines
Leech Lines	Falls	2	2½"	90		B9	10"	2 Blocks
	Whips	2	2½"	50				
	Stropping		3½"	12		B9	10"	2 Blocks
168	Bunt Lines	4	3"	52		B8	11"	4 Blocks with Leech Lines
	Stropping	4	3½"	12		B9	10"	4 Blocks
169	Slab Lines	2	2½"	42				2 Blocks Stropped with
	Stropping		2½"	1		B9	9"	2 to Quarter Blocks
170	Bowlines	2	4½"	60		B13	20"	1 Block
	Bridles	4	4½"	16		B9	11"	1 Block
Bowlines	Stropping		4½"	4				
	Seizing		⅝"	4				
	Lashing		⅝"	4		B10	No	1 Double Block Lashed to
	Jackstay		3"	16				Foremast
171	Quarter Tackle Fall	2	6"	10		B10	18"	2 Blocks
*	Falls	2	3½"	80		B9	20"	2 Blocks
	Stropping		5"	9		B9	14"	2 Blocks
	Seizings	3		14	# Not Shown on Drawings			
172	Gaff Halliards #	4	5½"	180	# Not Shown	B930	15"	6 Double Blocks, 2 single Blks
175	Staysail Stay	1	6"	15	# Not Shown on Drawings			
*	Collar	1	4"	2	Collar rounds Foremast			
	Seizing		1"	6				
	Gaonard		⅞"	4				
	Halliard		5"	57		B936	11"	1 Double Block, 3 Single Blocks
Staysail	Sheets	2	4"	13		B9	14"	4 Blocks
	Tacks	2	4"	5				
	Downhauler	1	2"	19		B9	8"	1 Block
	Stropping		4½"	1½				
					Main Lower Studding Sail			
174	Boom Tackle	2	2½"	24		B9	9"	4 Blocks
*	Stropping	2	2½"	2	# Not Shown on Drawings			
175	Tack Gaff	2	3"	60		B9	11"	2 Blocks
	Stropping	2	3"	2				
176	Jaws Gaff	2	3"	90		B9	11"	2 Blocks
	Strapping	2	3"	2				
177	Topping Lift	2	3½"	90				
	Span	1	4"	10		B9	12"	2 Blocks
178	Sheets	2pr.	2½"	52				
179	Tacks	2pr.	3½"	90		B9	12"	4 Blocks
	Stropping		3½"	16		B9	12"	2 Blocks
180	Outer Halyard	2	3½"	92		B9	12"	4 Blocks
181	Inner Halyard	2	3"	98		B9	12"	6 Blocks
					Main Top Yard & Sail			
182	Parrel Ropes	2	4"	19		?	25"	
*	Racking Seizing		1"	20	# Not Shown on Drawings			

Running Rigging

Item #	Name	Quantity	Circumference	Length (Fathoms)	Notes	Blocks/Hearts: Type	Size	Notes
183	Tye	1	8"	60				
	Stropping		6½"	8	seized			
	Seizing		1"	12				
183	Lifters, washed	2	2½"	96	seized	B9	22"	2 Blocks
	Lifters, yard		2"	8	seized	B3	22"	1 Double Block
184	Horses	2	4½"	9				
	Stirrups	6	3"	9				
186	Flemish Horses	2	4½"					
186	Braces	2	3½"	88		B9	14"	2 Blocks
Braces	Span	1	4½"	9	round Mizzen	B9	14"	2 Blocks
	Stropping							
	Lashing							
187	Lifts	2	3½"	80		B14	21"	Lower Studn'l Topmast Shrouds
Lifts	Buckets	2	4"	3				
	Stropping		4"	8		B9	12"	Topmast Cap Span - 2 Blocks
	Seizing		¾"	20				
188	Boat Tackle Falls	2	4"	90	Tye down Shroud	B14	21"	Upper Shroud Topmast Shroud
	Falls	2	2½"	80		B10	9"	4 Blocks
	Stropping		3"	9				
	Lashing							
189	Sheets	2	8½"	60				
	Strops, blocks	2	8½"	5	seized	B11	26"	2 Blocks
	Strops, Blocks	2	6"	10	seized	B4	26"	2 Quarter Blocks
Sheets	Cockers	2	2½"	10				
	Seizings	2	1⅜"	24				
	Span		3½"	12				
	Stoppers	2	6½"	6				
	Slings	1pr.	8"	14				
190	Clue Lines	2	4"	104		B12	14"	2 Blocks
	Stropping		4"	8		B12	14"	2 Blocks
191	Buntlines	2	8"	110		B10	11"	1 Double, Stropped to Tye Block
	Stropping		5"	4		B9	11"	2 Blocks
192	Bowlines	2	4½"	70		B10	15"	2 Blocks under Foremast Cap
Buntlines	Bridle	6	4½"	18				
	Stropping		4½"	24				
	Seizing		⅝"	6				
	Stropped/Tabing		2"	12				
193	Spritsail Sheets		2½"	36		B9	10"	2 Blocks
	Stropping		2½"	1				
194	Halyards	2	5½"	140		B12	26"	2 Blocks
*	Stropping		5"	8		B9	20"	2 Blocks
	Seizing		⅝"	18	# Not Shown on Drawings			
195	Staysail Halyard	1	3½"	60		B9	15"	1 Block
*	Stropping		4"	1	# Not Shown on Drawings			
	Sheets	2	5"	60		B9	11"	2 Blocks
Staysail	Stropping		5"	2				
	Pendant		4"	4		B9	12"	2 Blocks
	Tack		5"	4				
	Downhauler		2½"	27		B9	9"	2 Blocks
	Stropping		2½"	1				
	Staysail Boats	2	2"	42		B9	7"	2 Blocks
196	Stay #	1	4"	22		B9	15"	1 Block
	Tie Rope		2"	24		B936	8"	1 Single Block, 1 Double Blk
	Halyard	1	3½"	44		B9	12"	1 Single Block
Studdee Staysail	Sheets	2	3½"	40		B9	12"	2 Single Blocks
	Tack		5"	5				
	Downhauler		2½"	80		B9	9"	2 Single Blocks
	Stropping	2	5"	9½	# Not Shown on Drawings			
	Tricing Line		2½"	100		B9	9	1 Block
					Main Top Studding Sail			
197	Halyards	2	3½"	106		B9	12"	6 Blocks
198	Sheets	2	3"	62		B9	12"	2 Blocks
199	Tacks	2	3½"	74		B9	12"	4 Blocks
200	Downhauler #	2	2"	66	# Not Shown	B9	7"	2 Blocks
201	Boom Tackles	2	2"	66		B936	8"	1 Single Blocks, 2 Double Blks
*	Gaskings, Boom	2	2½"	20	# Not Shown on Drawings			
202	Tails B/Stropp #		⅝"	16	# Not Shown on Drawings			
					Main Topgallant Yard & Sail			
203	Parrel Ropes #	2	2"	5		P	12"	# Not Shown on Drawings
204	Tye	1	4"	19	Through Sheave			
	Halyard	1	2"	30	in Topgallant Mast	B9	8"	1 Double, 1 Single block
Top	Stropping		5½"	1½				
	Horses	2	3"	10				
206	Braces	2	2"	82		B9	8"	4 Blocks & Cleat (C) - 10"
	Stropping		2"	5				
207	Lifts	2	2½"	65		B9	8"	4 Thimbles, 2 Blocks
208	Sheets	2	2½"	50	Through Sheave Block on Topyard			
	Stropping	2	2½"			B9	9"	2 Quarter Blocks
209	Clue Lines	2	2"	80		B9	7"	2 Blocks - after Crow Iron
	Stropping	2	2"	4		B9	7"	2 Blocks
210	Buntlines	2	2"	1		B9	7"	2 Blocks in strop around
	Stropping	2	2"	1				Topgallant Mast

Running Rigging

Item #	Name	Quantity	Circumference	Length (Fathoms)	Notes	Blocks/Hearts: Type	Size	Notes
211	Bowlines	2	2"	76		B9	7"	2 Blocks
	Bridles	2	2"	8				
	Stropping		2"	1				
212	Scissor Stay	1	5"	38	# Not Shown	B9	10"	1 Block
*	Pendant	1	2½"	30		B9	9"	1 Block
Staysail	Sheets	2	2½"	50		B9	9"	2 Blocks
	Tack		2"	7				
	Downhauler		2"	34		B9	7"	2 Blocks
	Stropping		2½"	1½				
					Main Topgallant Studding Sail			
213	Halyard	2	2"	84		B9	7"	6 Blocks
214	Sheets	2	2"	48		B9	7"	2 Blocks
215	Tacks	2	2"	54		B9	7"	2 Blocks
216	Downhauler	2	1½"	46		B9	7"	1 Block
*	Stropping	2	2"	6	# Not Shown on Drawings			
					Cross Jack Yard			
					Mizen Cyd			
217	Span #		4"	2	# Not Shown on Drawings			
218	Slings	1pr.	5½"	6½	horned, parcelled			
	Strap		5½"	3	& seized			
Slings	Seizing		1"	3½				
	Gasing		1⅝"	5				
219	Truss Pendant	2			Served 6ft for ½	B10	9"	2 Blocks
*	Falls	2	2½"			B9	9"	2 Blocks
	Stropping				# Not Shown on Drawings			
	Eye Seizing	2						
	Nave Line	1	2"			B9	7"	Block under Cross Trees
220	Horses	2	4½"	12				
	Stirrups	4	3"	6				
221	Braces	2	2½"	64		B9	9"	4 Blocks
	Stropping		2½"	2				
222	Lifts	2	2½"	66				Note: Lift Blocks are
	Stropping		2½"	3	2 Blocks	B9	9"	seized in Strop of
	Span for Cap	1			2 Blocks	B9	9"	Topsail Sheet Blocks
223	Staysail Stay	1	5"	16	# Not Shown on Drawings			
*	Collar	1	4½"	3½				
	Seizing		1"	7				
	Lashing		1"	5				
Staysail	Carvel		2"	6				
	Halliard		5"	34		B9	11"	3 Single Blocks
	Sheets	2	5½"	15		B9	11"	2 Single Blocks
	Tack		2½"	4				
	Downhauler		2"	15		B9	7"	1 Single Block
					Mizzen Top Yard & Sail			
224	Parrel Rope #	2	2½"	6		P	16"	# Not Shown on Drawings
225	Tye	1	4"	18	Through Sheave in Sprunt			
	Fall	1	2½"	80		B936	15"	1 Single Block, 1 Double Blk
	Stropping		5½"	4		B3	15"	1 Block (Single)
	Lashing		1"	3				
226	Horses	2	5"	10				
	Stirrups	4	2½"	4				
227	Braces	2	2½"	82		B9	9"	2 Blocks
	Stropping		2½"	1½		B9	9"	2 Blocks
228	Lifts	2	2½"	66	Shroud Cleat (C)	B10	9"	2 Double - with roof tackle
	Stropping		3"	3	No	B9	9"	2 Single Blocks
229	Top Tackle Falls	2	3"	36		B13	7"	2 Blocks
	Falls	2	1½"	41		B9	7"	2 Blocks
	Stropping		2"	1				
230	Sheets	2	5"	40		B11	15"	2 Blocks
	Stropping		5"	2 5		B4	15"	2 Blocks
Sheets	Seizing		⅝"	14				
	Cockling		1½"	5				
231	Clewlines	2	2½"	60		B12	9"	2 Blocks & Cleat (C) 18"
	Tacks	2	2½"	4		B12	9"	2 Blocks
	Stropping		2½"	1½		B9	8"	4 Blocks & Cleat (C) - 14"
232	Buntlines	2	2½"	50		B9	8"	4 Blocks & Cleat (C) - 14"
233	Bowlines	2	2½"	44		B9	9"	2 Blocks
	Bridles	4	2½"	8				
	Stropping		2½"	1				
234	Staysail Halyard	1	2½"	30		B9	9"	1 Block
*	Sheets	2	2½"	30		B9	9"	2 Blocks
Staysail	Tacks	2	2"	2				
	Downhauler	1	1½"	20		B9	6"	1 Block
	Stropping		2½"	2	# Not Shown on Drawings			
					Mizzen Topgallant Yard & Sail			
235	Parrel Ropes #	2	1½"	4		P	7"	# Not Shown on Drawings
236	Tye	1	3"	7	Through Sheave	B9	9"	2 Blocks
	The Halyard		1½"	52	in Topgall Mast			
237	Hornet	2	2"	6				
238	Braces	2	1½"	45		B9	9"	2 Blocks
239	Lifts	2	2"	32				Thimbles in Shrouds
240	Sheets	2	2½"		Through Sheave Block on Top Yard			
						B9	9"	2 Quarter Blocks

ANATOMY OF THE SHIP

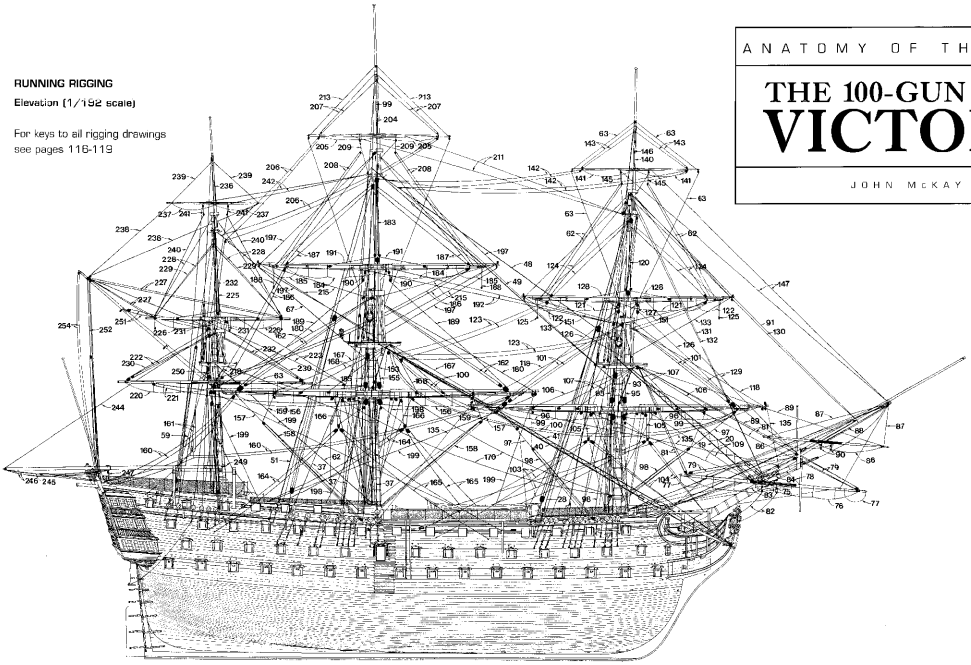
THE 100-GUN SHIP VICTORY

JOHN McKAY

H2 RUNNING RIGGING

H2/1 Elevation (1/192 scale)

Note: For keys to all rigging drawings see pages 116-119



ANATOMY OF THE SHIP

Forever associated with Nelson's last battle, HMS *Victory* is one of the most famous ships of all time, and is now preserved as a major part of the Royal Naval Museum in Portsmouth. The ship's survival is particularly appropriate since *Victory* is not only an example of the ultimate sailing warship – the three-decker First Rate – but was also the most popular and successful 100-gun ship of the period. Forty years old by the time of Trafalgar, she had been the flag-ship of half a dozen famous admirals, and was to continue in active service until 1812.

First published in 1987, this revised edition of *The 100-gun ship Victory* now incorporates and details the most recent research and findings of the HMS Victory Advisory Technical Committee.

THIS VOLUME FEATURES

- Full description of the ship and her position in the development of the First Rate.
- Pictorial section emphasising close-up and on-board photographs.
- Guide to the ship's Trafalgar colour scheme on the book jacket.
- More than 300 perspective and 3-view drawings, with in-depth descriptive keys, of every detail of the ship as presently restored – general arrangements, hull construction, fittings, decoration, masts and yards, rigging and armament.
- One large-scale 1/96 plan on the reverse of extended fold-out jacket

ISBN 1-55750-418-0

9 781557 504180 00000