

LA JACINTHE

Schooner

1825

Monograph &
History

35

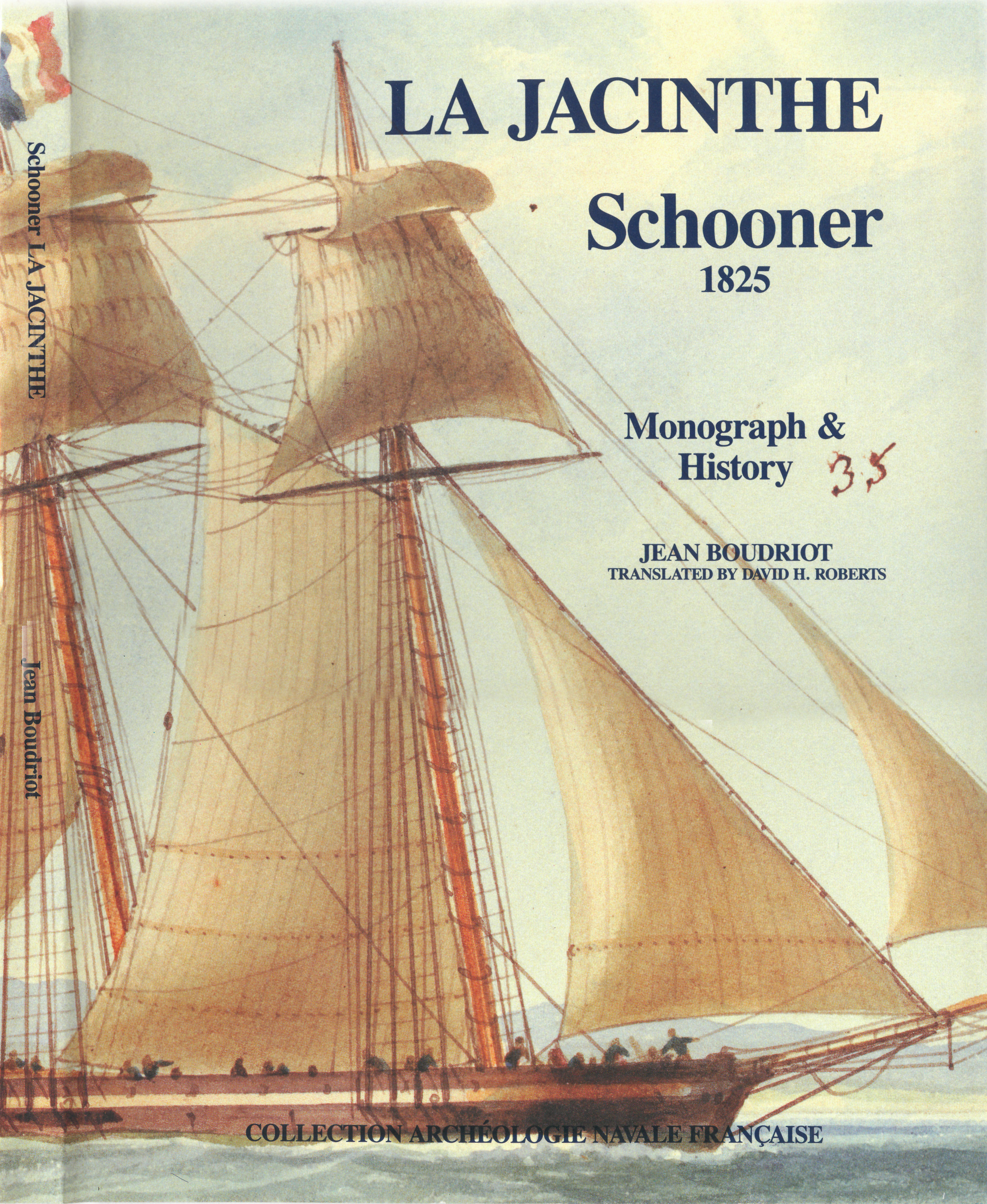
JEAN BOUDRIOT

TRANSLATED BY DAVID H. ROBERTS

Schooner LA JACINTHE

Jean Boudriot

COLLECTION ARCHÉOLOGIE NAVALE FRANÇAISE



COLLECTION ARCHÉOLOGIE NAVALE FRANÇAISE

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COLLECTION ARCHÉOLOGIE NAVALE FRANÇAISE

Schooner *La Jacinthe*

Jean Boudriot is the leading authority in the world on French ships of the sailing era. Since the first volume of **Le Vaisseau de 74 Canons** appeared in 1973, he has published on average one book a year, each devoted to a different subject and forming what he calls the **Collection Archéologie Navale Française**. His work is distinguished by the highest standards of historical accuracy and by his remarkable skill as a draughtsman, through which he has succeeded in bringing his subjects to life in a way never before achieved for the 18th century warship. A well known figure at international conferences and a prolific contributor to the specialist publication **Neptunia**, **Jean Boudriot** is a former President of the Council of the Musée de l'Armée in Paris, and a Council Member of the Musée de la Marine. In 1987 he was awarded the Prize of the Académie de Marine for his outstanding contribution to French maritime history. For the last few years he has run a course in naval archaeology at the Ecole des Hautes Etudes en Sciences Sociales and at the Sorbonne. He and his wife live in Paris, and have a holiday home near Angoulême.

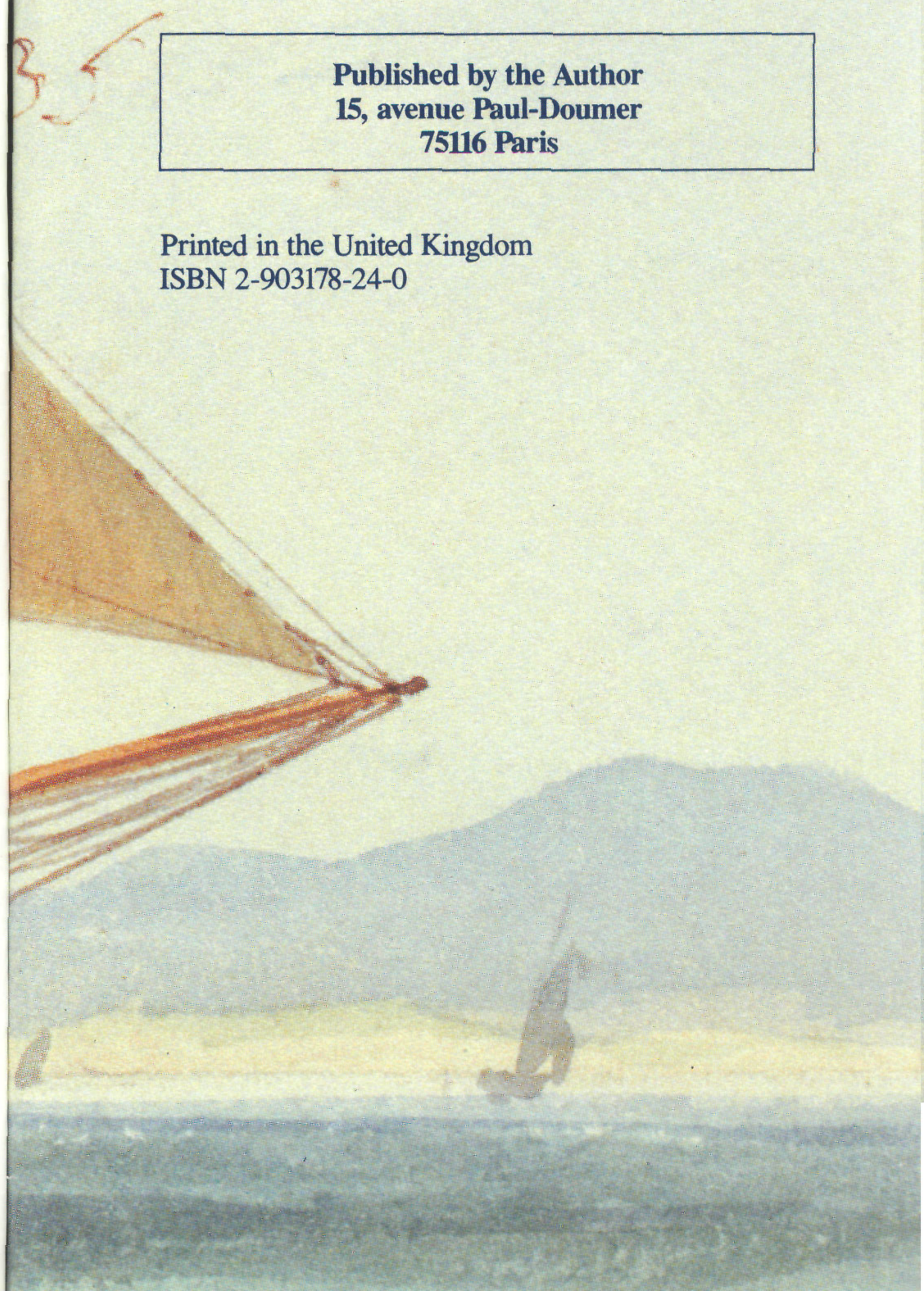
The schooner which is shown on the jacket is reproduced from a watercolour by Frédéric Roux (1805-1870), taken from the album of watercolours which the artist was commissioned to paint for Admiral Willaumez (1763-1845), in which each painting depicts a vessel on which the Admiral served.

This particular painting (no. 35, dated 1829) bears the following caption: *Schooner N° 10. Admiral Willaumez handed over the command of the squadron at Ile d'Aix to Rear Admiral Gourdon on March 18th 1809; he sailed for Rochefort with his officers on board schooner N° 10, the command of which he had shortly before entrusted to Enseigne de vaisseau Téphany.*

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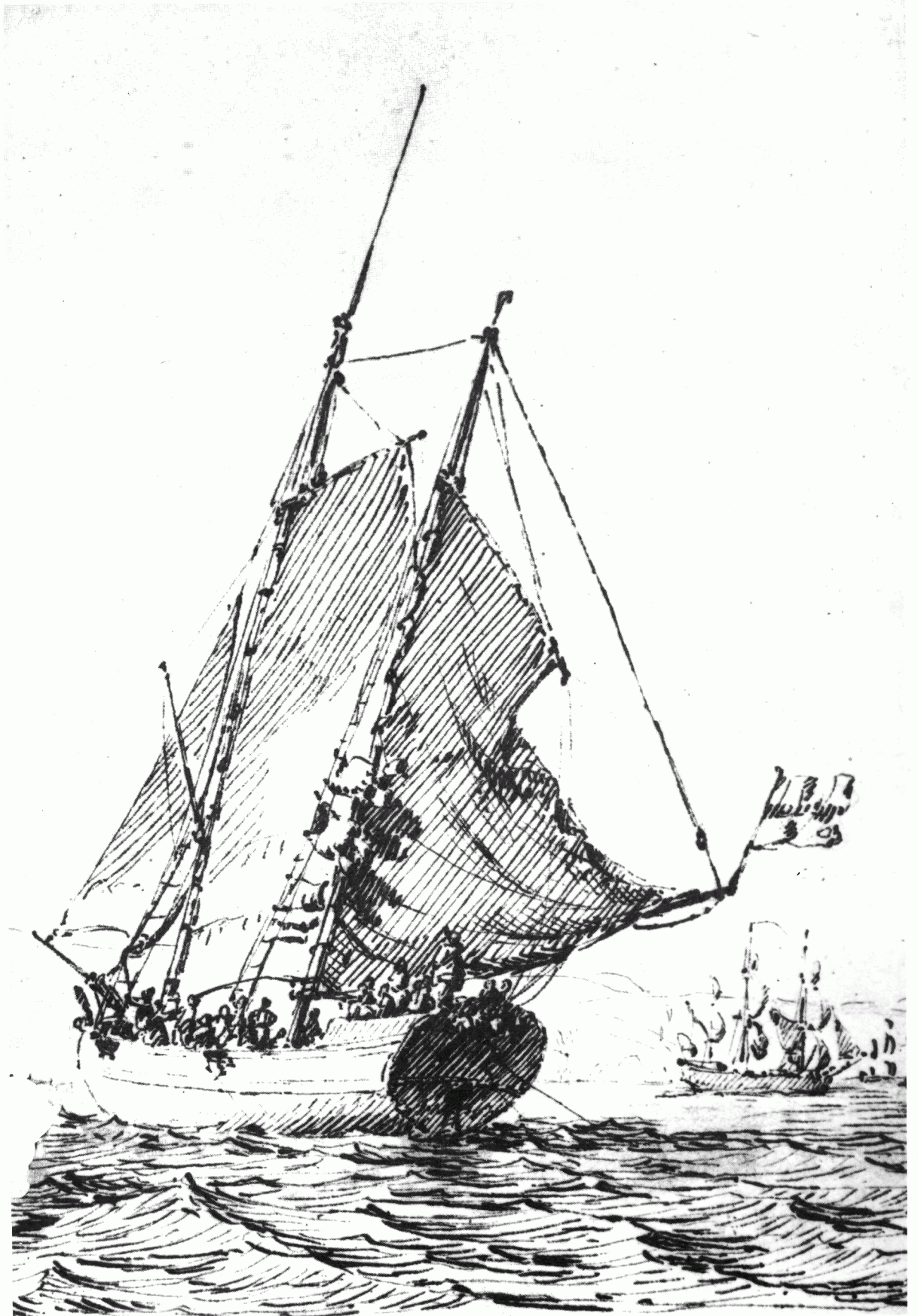
LA JACINTHE

Schooner

1825

Monograph &
History

JEAN BOUDRIOT



Detail from the sketch by Ozanne which is reproduced on page 34.

JEAN BOUDRIOT

Schooner
LA JACINTHE
1825

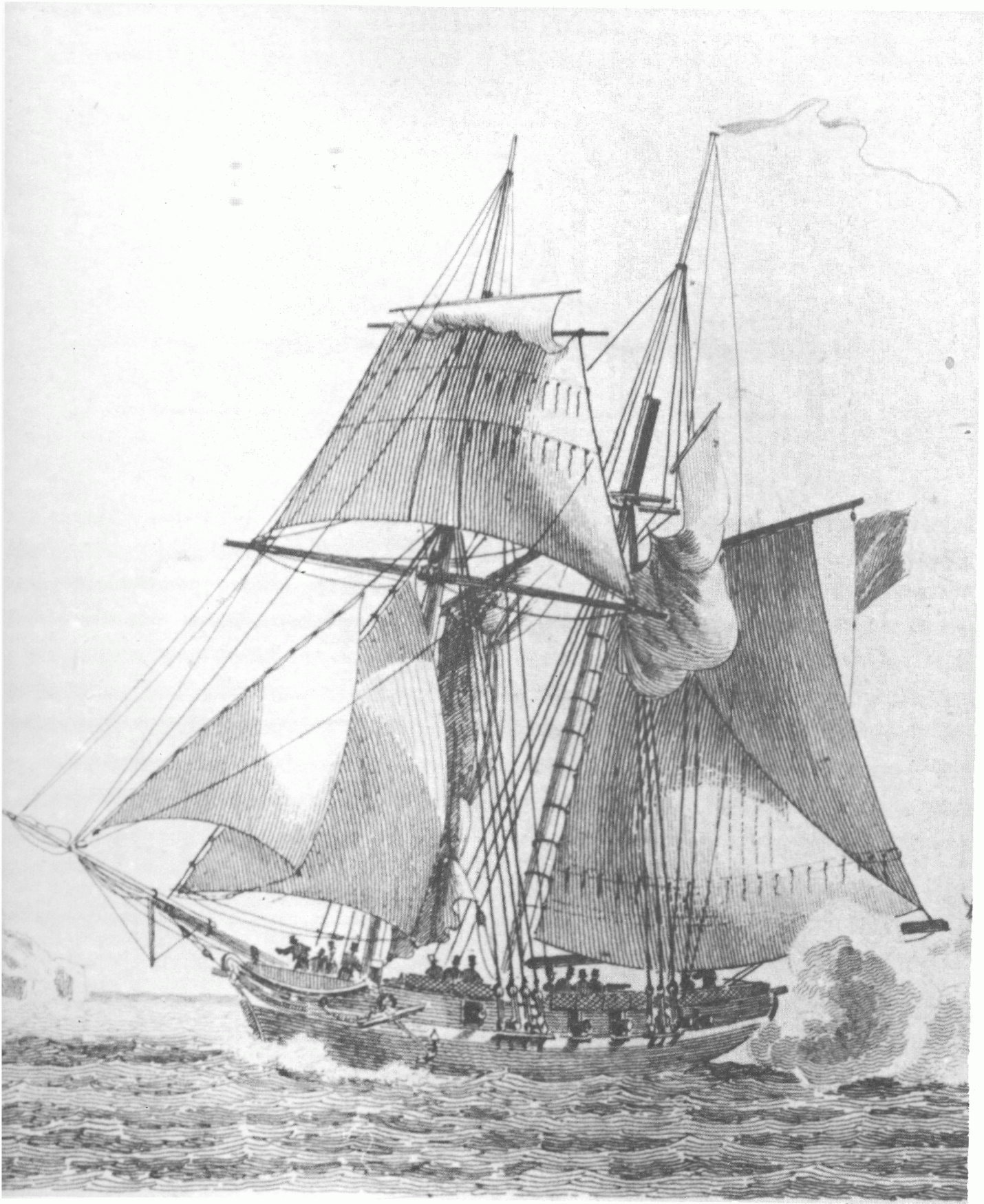
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COLLECTION ARCHÉOLOGIE NAVALE FRANÇAISE



Enlargement from the engraving by Baugean which appears on page 38.



• *Jacinthe* •

To the Reader

A number of reasons encouraged me to publish this book. First of all the subject, and the rig which is peculiar to the schooner. In previous books I had examined the rig of brigs, cutters and luggers, it was therefore only logical to add that of the schooner, which in the French Navy is essentially a type which belongs to the 19th century; this in turn led me to choose as my subject La Jacinthe, and extend my studies to the period of the Restoration. Finally, up to now the monographs which I have published have been aimed at experienced modelmakers. Even a relatively simple vessel like the lugger Le Coureur presents certain difficulties for the beginner, since it is clinker-built. With La Jacinthe I have tried to create a subject suitable for beginners, and yet one with which they could build an object of lasting quality, so that even if they do no more than build the hull, they will have a valuable introduction to the art of modelmaking.

However, as with all my previous books, I make no concessions to the need for authenticity: a historical section, a large number of contemporary illustrations, and a selection of original draughts provide the student of the sailing navy with a body of information, for the most part never before published, which will give him a clear understanding of the schooner and its rig, and of its role in the French Navy. It remains only for me to wish you "good luck!"; and to express my gratitude for your continued interest in the Collection Archéologie Navale Française.

J.B.

Note

All measurements in feet and inches refer to *French* measures: 1 French inch (*pouce*) = 27.1 mm; 1 French foot (*pied*) = 325 mm; the inch is divided into 12 lines (*lignes*), and each line into 12 points (*points*). By the same token, weights are given in French pounds (*livres*), equivalent to 489 grs., or approximately 10% more than the English pound. Thus a French 24-pdr gun fired a projectile which weighed 25.85 English pounds. Where appropriate the metric equivalent is given in square brackets [].

SOME NOTES ON AVISOS

Before discussing schooners, I believe that it is first of all appropriate to begin with a few general notes on the subject of *avisos*¹.

As their name suggests, their principal role is to deliver "advice" or dispatches, and also to carry out reconnaissance and scouting duties. In order to execute such tasks effectively, they must be both fast and weatherly sailers.

- Experience has shown that even the best of small boats is unable to keep up with the worst of ships as soon as the wind freshens and the sea begins to get up. Below a certain size, a vessel is unable to "stand up to the sea", and consequently it is important that *avisos* should not be too small².

- A heavy sea not only limits the speed through the water of small vessels, but also causes them to make significant leeway when sailing close-hauled. This is because their draught is insufficient to offer adequate lateral resistance. In order to limit these negative factors, it is important to reduce the area of the midship frame, to compensate by increasing the overall length³, and to make the draught as deep as possible⁴.

- Similarly, experience has shown that in order to increase the vessel's speed it is advisable to situate the midship frame somewhat forward of the midpoint of the length and to reduce the breadth significantly at the stern-frame. For *avisos* therefore it is necessary to move the midship frame as far forward as possible and to shorten the wing-transom⁵.

- If the *aviso* has sufficient depth of keel, it is advantageous to reduce its length by pronouncing the rake of the stem and sternpost, thereby increasing speed and making the vessel quick in stays.

- Smaller vessels have their gunwale relatively low above the water, and tend to heel easily. It is therefore even more important than for large ships to ensure that they are adequately supported against the thrust of their sails and the effects of rolling. There must be no tumblehome, and the maximum breadth should correspond to the height of the gunwale so that the whole part of the hull which is out of the water increases progressively in breadth.

- Lateen sails or other types of triangular sail⁶ are the most suitable for *avisos*, but it is important not to exaggerate their dimensions, since this tends to make them difficult to handle and requires a larger crew⁷. But it is also sensible to rig a certain number of square sails as well since they improve the vessel's sailing when running large or before the wind.

A variety of rigs may be used for *avisos*. The earliest form is that of the **cutter** (see *Le Cerf*). Directly derived from this is the **schooner rig**, a logical development in order to avoid oversparring in cutters. Finally, as these vessels grew in size, they tended to be rigged as **brigs** (see *Le Cygne*).

- Cutters (and their close relatives, sloops) tend to be of limited overall length, since this is a means of obtaining the degree of stability demanded by the height of their spars; since however this increases their tendency to make leeway, they compensate by having a very deep keels, with significantly greater draught aft than forward.

- Schooners carry their sail on two masts, which reduces the tendency towards oversparring, at the cost however of reduced efficiency, since the sail area is divided. But the length overall can be increased (and is indeed essential if two masts are to be carried), so that a greater tonnage is also one of the characteristic differences between schooners and cutters.

- Brigs developed from brigantines, and by combining fore-and-aft and square sails a significant increase in tonnage became possible. While the rig is more complex, and consequently heavier, it is also less fragile; another characteristic is an increase in the proportions of the upper works and in the breadth of the stern⁸, so that the larger brigs border on the dimensions of sloops-of-war. While brigs are safer in a seaway, they have neither the speed nor the elegance of a schooner, yet for all that they were to become by far the most common of the smaller vessels of the Navy of the end of the Ancien Régime and of the years thereafter. It should be noted however that only the smaller brigs can be considered as *avisos*, and this was officially recognised during the years of the Restoration through a distinction being made between brigs (armed with 20 guns) and brig-*avisos* (armed with 10 only).

- I will conclude by making brief mention of a bastard variant dating from the 1820's and copied from the United States; this was a vessel of mixed rig known as a brig-schooner⁹ or "hermaphrodite brig". The foremast carried three or four tiers of sails, being thus quite conventional, but with the addition of a fore-and-aft sail bent to a gaff but with no boom. The mainmast carried a fore-and-aft mainsail and a square topsail and topgallant. This rig was "imported" into France in 1822 by the surveyor J.-B. Marestier, who was the author of the draughts for the *Gazelle* class. But after 1831 their rig was modified to that of conventional brigs, after complaints that the mainmast carried insufficient sail with its fore-and-aft main. For further details I would refer the reader to an article which I wrote for the magazine *Neptunia* (n° 116).

*

¹ The term *aviso* (also known as *advice-boat*, or *dispatch-boat*) is essentially generic, since a wide variety of different rigs were used for such vessels.

² Admiral Thévenard recommended a minimum length overall of 80 French feet [26.02 m.], for a beam of 20 feet [6.50 m.].

³ But the longer the length overall, the slower the vessel will be in stays. Furthermore, an excessive length/breadth ratio tends to prejudice longitudinal stiffness (causing hogging).

⁴ The midship-bend is thus very steep-floored, in order to increase the depth of the keel below the waterline, but this results in a hull shape which prevents the vessel from taking the ground safely in tidal harbours, and increases the dangers of an accidental stranding.

⁵ Or the deck-transom, in the case of the round sterns which came to be built in the 19th century.

⁶ Sails known as "fore-and-aft" sails, since they are bent parallel to rather than perpendicular to the keel. Such sails may or may not be bent to a boom. Spritsails are included in this category. On the other hand, I consider lugsails to be more an adaptation of the square sail than a true fore-and-aft sail; the same applies to shoulder-of-mutton sails or sliding-gunter sails.

⁷ For an *aviso* of 20 foot beam and armed with 10 4-pdr carriage-guns, the entire crew including officers should not exceed thirty men.

⁸ When such brigs are armed with a full battery of guns, the space required for their handling and for the movement of the tiller demands considerable breadth. In the French Navy, it was not until about 1830 that wheels were fitted to these small vessels.

⁹ I should perhaps also mention "gun-brigs" (see *Le Cygne* for further explanations).

THE SCHOONER IN THE FRENCH NAVY

This study is limited both chronologically, since I do not go beyond 1850, and also in its compass, since I am only concerned with the schooner in its naval role¹⁰.

In the light of my remarks concerning the aviso, the text of which is drawn essentially from a book by Admiral Thévenard¹¹, it is now possible to move on to the subject of the schooner with greater understanding. The French word for schooner, *goélette*, is claimed by Augustin Jal to derive from a Breton word meaning a type of sea bird. I willingly defer to such an eminent academic for its etymology. The English word *schooner* is also employed, but according to Willaumez¹² only for the pilot-boats of the Hooghly. In all events, the term appears relatively late in French maritime dictionaries, the first mention being as far as I am aware in Savérien's dictionary of 1758¹³, where he gives the following definition: "Type of vessel of singular build. Its masts are reversed and this contributes to its great speed." Evidence (if such were required) of the ignorance of the author, who spelt the name of this "singular" vessel *goualette*.

The exhaustive manuscript dictionary by Blaise Ollivier, written sometime in the 1740's¹⁴, makes no mention of the term. In fact, we must wait until the publication of Bourdé de Villehuet's *Manuel des marins*¹⁵ in 1773 before we find a serious definition of *goulette* or *goualette*: "It is a vessel with two masts, spreading two boom-sails, one on the foremast, which is hoisted to the topmast rigging, and is sheeted in at the gunwale, and the other is hoisted on the mainmast and spread by a gaff, like the mainsail of Bermuda boats; it also carries two or three jibs on its bowsprit, and a staysail between the two masts; its sail is thus very advantageous when close-hauled or with the wind abeam; with the wind large, they hoist cross-jack sails and flying topsails with studdingsails, and the fore-and-aft sails are taken in and furled, so that they always have a suitable spread of canvas."

The author, an experienced seaman, thus gives an excellent description of the schooner rig¹⁶, and the dictionaries published subsequently do no more than take up his definition. In his *Treatise on Mastmaking* published in 1778, N.-C. Romme gives a certain amount of information concerning the proportions of the spars. But we must turn to manuscript sources far more than to printed works if we wish any further information concerning schooners.

Officially, the French Navy remains ignorant of the schooner during the first half of the 18th century. However, this type of small vessel is common in the French West Indian Colonies; evolving from the "Bermudoes sloops", the schooner gradually supplants them, so that by the end of the century the term "Bermuda boat" has come to mean a schooner and not a sloop. From the archives we learn that the first French schooners were built at Rochefort, which is logical if we consider that they were destined for use in the Colonies, and Rochefort was the Royal Dockyard responsible for shipping for the Colonies on the King's account.

In 1766, Chevillard the Younger, Assistant to the Master Shipwright at Rochefort, drew up the draughts for two guardships for the African colonies, which were aptly christened *l'Afrique* and *la Gorée*; originally designed as sloops, they were to be rigged as schooners. As far as I am able to discover, these are the first schooners built for the French Navy, although strictly speaking we should qualify that by saying that they were the first schooner-rigged vessels.

On the following page I have reproduced the brief Sailing Report drawn up by the S.^r Large (probably an auxiliary officer) commanding the *Gorée*, and Chevillard's reply; I have added a number of comments by way of explanation. It is the fact that this is the first (albeit late) mention of a schooner, and the reference to copper sheathing, which explains the prominence which I have given to this document.

In 1771 another schooner was built at Rochefort, this time to the draughts of Chevillard the Elder. In 1776 and 1777 further schooners were built, this time not for overseas service but very modestly as service vessels for Aix Roads, where together with a number of yachts they were used to supply powder and biscuit to ships fitting out in the roadstead¹⁷.

With the schooner now established in the French Navy, it became customary to have a number of them as guardships in the West Indies and in Senegal. But we must wait until the 19th century before the schooner became more widely used in the French Navy, not just in the role of guardship in the Colonies, but wherever the operations of the Navy required.

I had intended to give a list of all the schooners built for the Navy up to 1850, but in the end I had to abandon the project because of the lack of agreement and the large number of gaps in the lists. The List of Warships in the French Navy¹⁸ indicates some 150 vessels described as schooners, excluding those designated as privateers, but comparing these with other documents, notably the list of prizes taken by the English between 1794 and 1815, the Navy Lists of the Imperial Navy, and others published later, I discovered a large number of contradictions. This is not especially surprising, in view of the confusion in the descriptions used: avisos, brigantines, dispatch-boats, schooners; and then there are the vessels built by the State in the Dockyards, those built in private yards for the Navy or requisitioned, prizes, vessels bought into the Navy; in the end we must concede that it is difficult if not impossible to draw up an exhaustive list of all the schooners which served in the Navy. I might also add that their relative insignificance explains in part the reticence of the archives, for they emerge and disappear often without trace, which is not the case with frigates, and still less with ships of the line.

However, this is of no great importance, and I believe that what counts is that we have at our disposal a series of draughts of schooners, covering a period of more than sixty years, and this is much more important than a list of vessels which would inevitably be compromised by errors or omissions.

*

¹⁰ I have however included in the tables on page II, taken from P.A.L. Forfait's *Treatise on Mastmaking*, the proportions he gives for fishing and merchant schooners.

¹¹ *Mémoires relatifs à la Marine*, Paris, An VIII (1800). For details of this book and others quoted on this page, see Volume IV of *The Seventy-Four Gun Ship*, pp. 362-5.

¹² *Dictionnaire de Marine*. Opinion is divided as to the derivation of the word *schooner* in English: according to certain authorities, it comes from a Scottish verb *to scon* or *scoon*, meaning to skip over the water like a flat stone. [Trans.]

¹³ *Dictionnaire Historique, Théorique et Pratique de Marine*, Paris, 1758.

¹⁴ *Traité de Construction*, Service Historique de la Marine, cat. no. SH.314.

¹⁵ *Manuel des Marins, ou Explication des Termes de Marine*, L'Orient, 1773. The first mention of the word *schooner* in an English maritime dictionary is to be found in Falconer's *An Universal Dictionary of the Marine*, London, 1769: "A small vessel with two masts, whose main-sail and fore-sail are suspended from gaffs reaching from the mast towards the stern; and stretched out below by booms, whose foremost ends are hooked to an iron, which clasps the mast so as to turn therein upon an axis, when the after ends are swung from one side of the vessel to the other." [Trans.]

¹⁶ Note the reference to a staysail, rigged overhead the gaff of the foresail.

¹⁷ For more details, see the article by J. Vernet in *Neptunia*, n° 104.

¹⁸ J. Vichot & J. Meirat, *Répertoire des navires de guerre français*, Paris, 1967, Eds. Neptunia.

1767

20000 de Gorie
D. pour le
Largo

N^o 62

Copie du Devis de la goëlette de Roy le Gorieé

17

Estoit à sa charge son tirant d'eau étoit long de sept
partie des Nades de la Rochelle

à ----- 7. pié 2. pouce de l'arrière
del'avant ----- 6. pié

Differance - 1. pié 2. pouce

Pendant sa Navigation j'ay observé quelle ports très bien fa
voile, gouvern de même, la plus forte marche est vent
largue et vent arrière, qui est de huit nœuds ou deux
lieux deux tiers par heure.

Aux plus près du vent elle devine un peu plus
qu'un grand bâtiment et n'a jamais fait plus qu'une
lieue deux tiers toutes voiles dehors.

elle fatigue beaucoup au plus près à cause du
Langage, ce qui en est cause c'est son mât de Misaine
qui est trop del'avant de deux piés et demi

son grand mât est trop de l'arrière de quatre
piés, ce qui luy tire l'avantage quelle pourroit avoir au
plus près, en quelle se trouve trop peu de grande
voile et par conséquent trop de Misaine, d'ailleurs son
mât de Misaine est trop del'avant, comme je l'ay
dit et demeuré, fait que de son bord il n'y en a jamais
que deux qui portent bien et sa Venquette est presque
inutile.

Dans le devis de l'ingénieur Constructeur il est dit
qu'il faut que son grand mât soit incliné sur l'arrière
d'un pouce et demi par pié de sa longueur et son mât
de Misaine d'un pouce, j'ay suivi cela et je me suis
bien trouvé, j'ay même états à la mer augmenté les

pointe du mât de Misaine d'un demi pouce par
pié sur sa longueur, cela diminue les forces de
Langage en les rendant plus doux, ce qui est une
preuve que son mât de Misaine est trop del'avant

Quant à son doublage de cuivre, je l'ay trouvé
dans son état que lorsqu'il a été mis à Rochefort, le
cuivre bien adapté, les coutures bien ferrées et les clo
n'ayant point forcé, je ne luy ay donné qu'une demi
Carène pour servir cela, mais comme ce doit ordina
les hauts d'un bâtiment et sa flottage qui fatiguent le
il est certain que le cuivre est en bon état dans ses four

Les Orans promunt avec vite sur son cuivre que
le bois, mais il sera fort aisé des nettoyer cela avec des
grates ou trognons de balais, en y allant avec précaution
à fin de ne pas faire faulter la tête des clous qui
pourroit être rongée de rouille.

à Gorie le 30 juillet 1767. signé

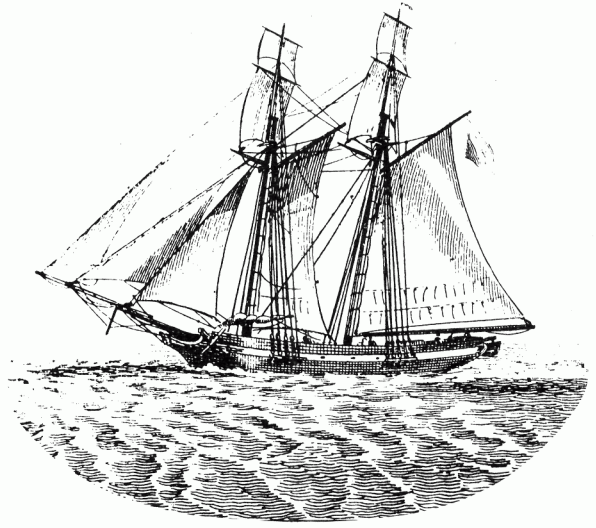
Réponse au Devis de M. Largo sur la
Goëlette de Gorie.

18

ce bâtiment est fait sur les mêmes Gabaris que
la Goëlette d'Afrique et mâté de la même façon,
et sujét aux mêmes inconvénients, ainsi ma réponse
aux observations de M. Morel peut aussi servir de
réponse au Devis de M. Largo. il n'ignore pas que
mon intention étoit de mâté ce bâtiment en bateau
et que ce n'est qu'à la sollicitation et aux instances
réitérées de M. le officier de Ports que j'ay
consenti qu'il fut mâté en Goëlette, ce n'est
pas bien à M. Largo de s'en venir dire dans son
Devis, d'autant que je l'avois prévenu que ce
bâtiment n'étant pas mâté relativement à sa
configuration, n'auroit pas les qualités dont il
étoit susceptible: on luy rendra ses qualités en
luy changeant la Mâté de Goëlette, contre
la quelle je proteste, en celle de Bateau que
je luy vouloit donner et qui seule luy convient.

à Rochefort le 6. Novembre 1767.

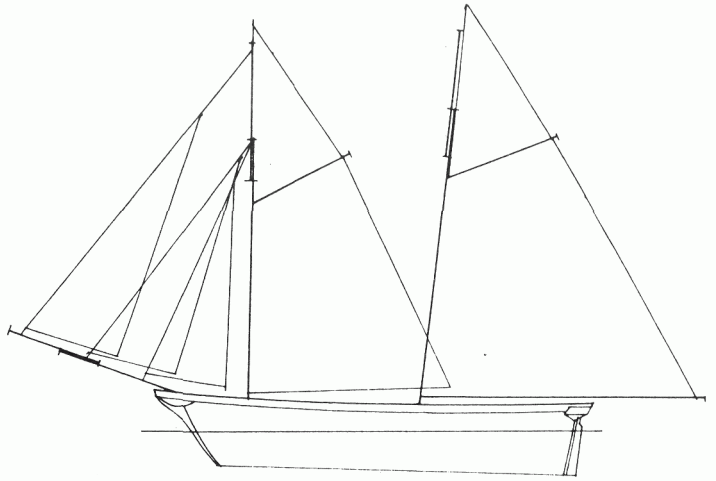
Cherillero de Cadet



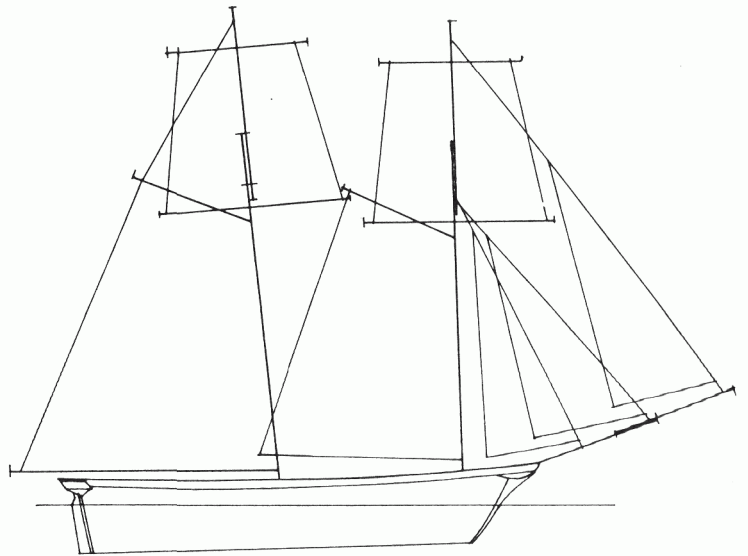
GENERAL REMARKS ON THE SCHOONER RIG

● The earliest forms only have fore-and-aft sails. Two or at most three jibs, foresail bent to a gaff but loose-footed, mainsail similar in shape but larger thanks to its boom.

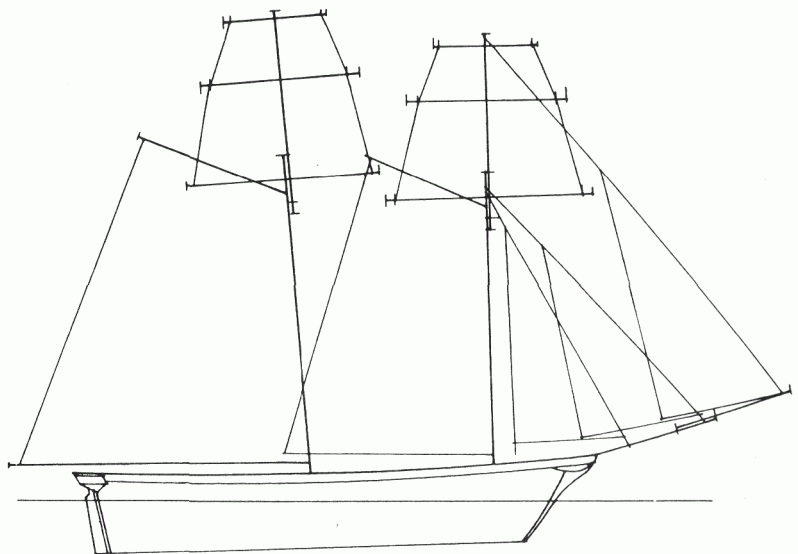
Gaff topsails can be bent to the poleheads of the masts or to a spar extending the polehead upwards. The rig is characterised by its extreme lightness, and it is especially suitable for sailing close-hauled. It is less well-adapted however to sailing large or with the wind astern, which gives rise to the occasional use of a square sail (i.e. perpendicular to the line of the keel) on the foremast. This sail, known as a cross-jack¹, is bent to a yard hoisted temporarily a little way above the foresail gaff. A number of halliards allow the sail to be spread, and its tack is extended by a boom. The whole arrangement is extremely precarious, but it is only temporary, the aim being to avoid complicating and weighing down the normal rig.



ORDINARY SCHOONER



FISHING SCHOONER



AVISO RIGGED AS A SCHOONER

According to this Sailing Report, the schooner appears somewhat paradoxically to sail better large or wind astern than close-hauled; the difference is significant, since the speed diminishes from 8 to 5 knots, which is extremely mediocre. Furthermore, the rate of leeway appears to be considerable and the pitching movements fierce, although these were reduced when the rake of the foremast was increased to 1.5 (French) inches [4.1 cms] instead of 1 inch.

The information concerning the copper sheathing of the schooner is interesting, and I referred to it in the monograph on the Belle-Poule. The sheets of copper are fastened with iron nails (!), the phenomenon of electrolysis being as yet misunderstood. It is surprising to discover that barnacles or shipworm were able to adhere to the sheathing.

Worm is a danger which increases as the temperature and salinity of the sea rises. The guardships stationed in the Colonies were extremely vulnerable to the ravages of worm, which explains this very early experiment in France with copper sheathing on the Gorée.

Chevillard the Younger defends himself against the criticisms of her Captain, the S.^r Large, reminding him that his original intention had been to rig the Gorée as a cutter, and that it was only at the insistence of his superior and of the Dockyard officers that the schooner rig had been adopted*.

There are a number of such manuscripts in the archives which attest to the interference of the Dockyard officers during the design or building of the King's ships; I am inclined to doubt (see Neptunia n° 134) whether they were sufficiently qualified to do so, in an area which was outside their experience.

* This explains Large's objection that the foremast is stepped too far forward, since the overall length of a cutter is in principle too short to allow two masts to be stepped correctly.

These three drawings are to a scale of 1/324

● For the schooners fishing the Grand Bank or operating the coasting trade, it is better to adopt a rig which includes square sails on a more permanent basis. This makes it easier to beat off a lee shore by clawing up to windward on bowlines. By comparison with the ordinary or *fore-and-aft schooner*, the rig is more complicated and heavier. According to the table given by Forfait (opposite), this type of schooner extends its bowsprit by means of a jibboom, which allows an extra jib to be rigged. But the most important difference is that this type of schooner carries topsails. Forfait attests to topsails on both masts (*two-topsail schooners*), but there is nothing absolute about this, and often there is only a single topsail rigged on the foremast (*fore-topsail schooners*). These sails demand topmasts, and thus crosstrees and caps, whereas with the fore-and-aft schooner a few iron hoops suffice to secure a small spar if a gaff topsail is to be rigged. The topsails are bent to a yard which is called the topsail-yard, and are sheeted in at the crossjack-yard, which in the case of the foremast may on occasion also be used to bend a cross-jack. It is apparent that the rigging loses much of its original lightness, and that both standing and running rigging must be increased.

● The Navy frequently adopts the schooner rig for its avisos, as do smugglers and those responsible for their suppression, and in such vessels the amount of canvas carried is increased to an extreme, since the quality which is demanded above all others is speed. Their masts are longer and the yards have greater spread. Topgallants are rigged above the topsails, the number of jibs is increased, the cross-jack and the topsails have studdingsails; sometimes the mainsail takes a ring-tail sail, a staysail may be rigged between the masts, with fly-by-nights² or even royals bent on above the topgallants.

● The rig of the gaff-topsail offers a number of variations. Sometimes it is not bent to a yard at all: it is merely a simple triangle, the most basic form of all. Or the upper corner of this triangle is knocked (removed), so that a yard is employed, which may be smaller or larger according to taste. A small spar may be used to

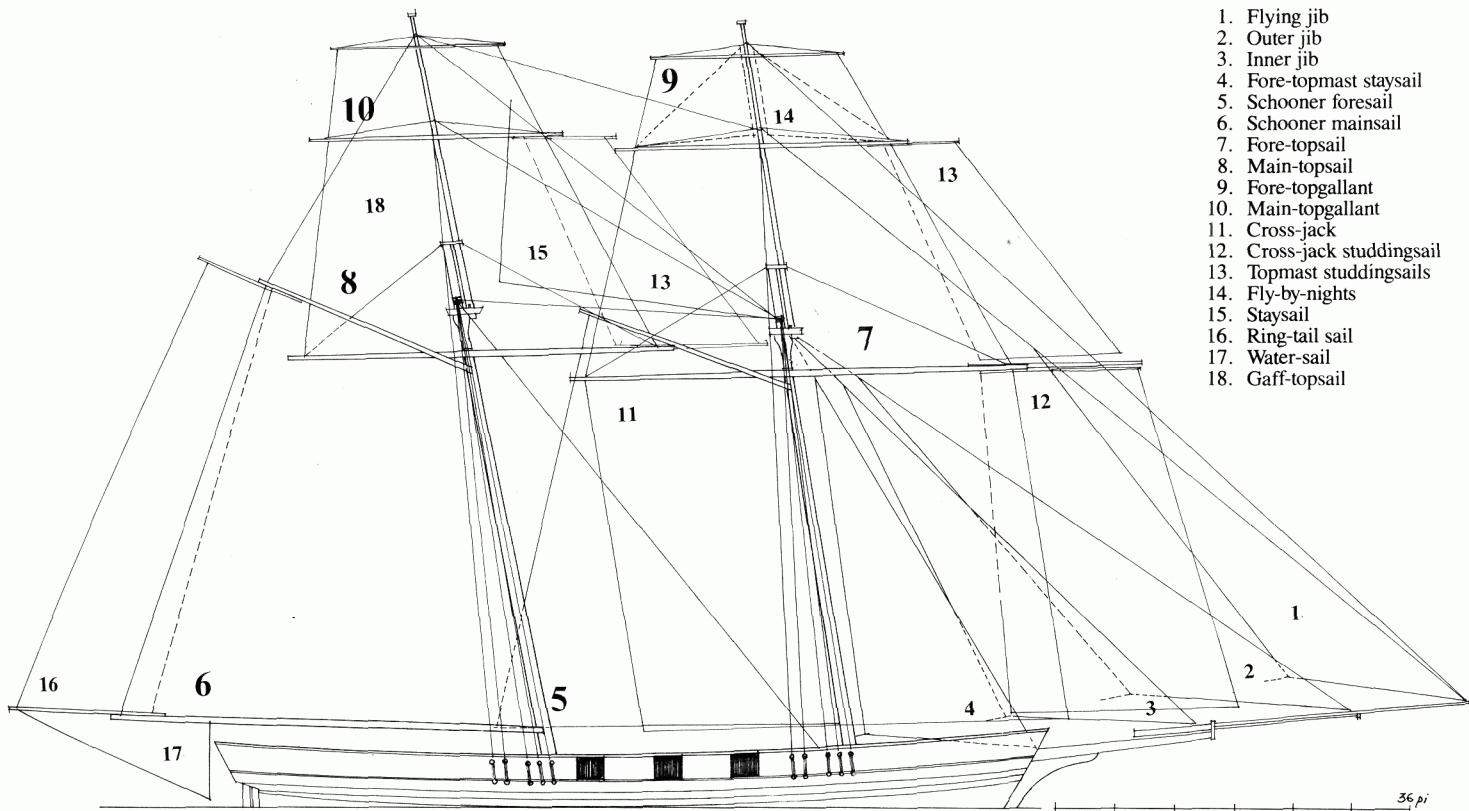
stiffen the luff (fore leech) of the sail and hold it against the polehead of the mast; sometimes this spar even extends upwards above the mast-truck. And another spar may be used in addition to the first to strengthen the after-leech of the sail.

● When schooners keep the cross-jack permanently bent to its yard, the weight tends to strain the rigging. It is preferable then to use a **lower crossjack-yard**, which is only half the length of the upper yard. The sail is furled on this yard, which serves only this purpose; when required it can be hoisted by means of four halliards to the height of the upper yard. This lower yard, with the sail furled on it, is visible in on some of Baugean's engravings (see pp. 37 & 42); it is secured to the foremast and the shrouds a little way above the deck in order not to obstruct the run of the rigging or the men as they move about the ship.

Following on from these introductory remarks I thought it might be useful to transcribe from Forfait's book Table Four and part of Table Five, both of which refer to schooners. On page 9 I have summarised the numerical information in the form of three sketches, using in each case the mean of the two lengths and breadths given. In a separate drawing (below) I have illustrated the maximum amount of sail which (in theory at least) a schooner might carry. I should add that as far as *la Jacinthe* is concerned I have restricted myself to the details supplied in the Plan from the *Recueil du Génie Maritime* (see p. 27), omitting however the cross-jack, since I felt that two square sails on the foremast were already more than sufficient for those who might wish to show their model fully-rigged.

¹ An extremely fragile rig. For details, see the explanations given in *Le Cerf*.

² Defined by Smyth in his *Sailor's Wordbook* as follows: "a sort of square-sail, like a studding-sail, used in sloops when running before the wind; often a temporary spare jib set from the topmast-head to the yard-arm of the square-sail". [Trans.]



1. Flying jib
2. Outer jib
3. Inner jib
4. Fore-topmast staysail
5. Schooner foresail
6. Schooner mainsail
7. Fore-topsail
8. Main-topsail
9. Fore-topgallant
10. Main-topgallant
11. Cross-jack
12. Cross-jack studdingsail
13. Topmast studdingsails
14. Fly-by-nights
15. Staysail
16. Ring-tail sail
17. Water-sail
18. Gaff-topsail

TABLE FROM P.A.L. FOREFAIT'S TREATISE ON MASTMAKING

Length of these vessels*
Ratio breadth to length**

Ratio mast dimensions to breadth of these vessels

Mainmast
Foremast
Bowsprit
Main-topmast
Fore-topmast
Jibboom

Ratio yard dimensions to length of these vessels

Mainsail boom
Mainsail gaff
Foresail gaff
Main crossjack-yard
Fore crossjack-yard
Main topsail-yard
Fore topsail-yard
Main topgallant-yard
Fore topgallant-yard

Ratio position of masts to length of these vessels

Mainmast
Foremast
Rake of mainmast
Rake of foremast (perpendicular)
Steeve of bowsprit, relative to horizon

Ratio of sail area to parallelogram described about the load waterline

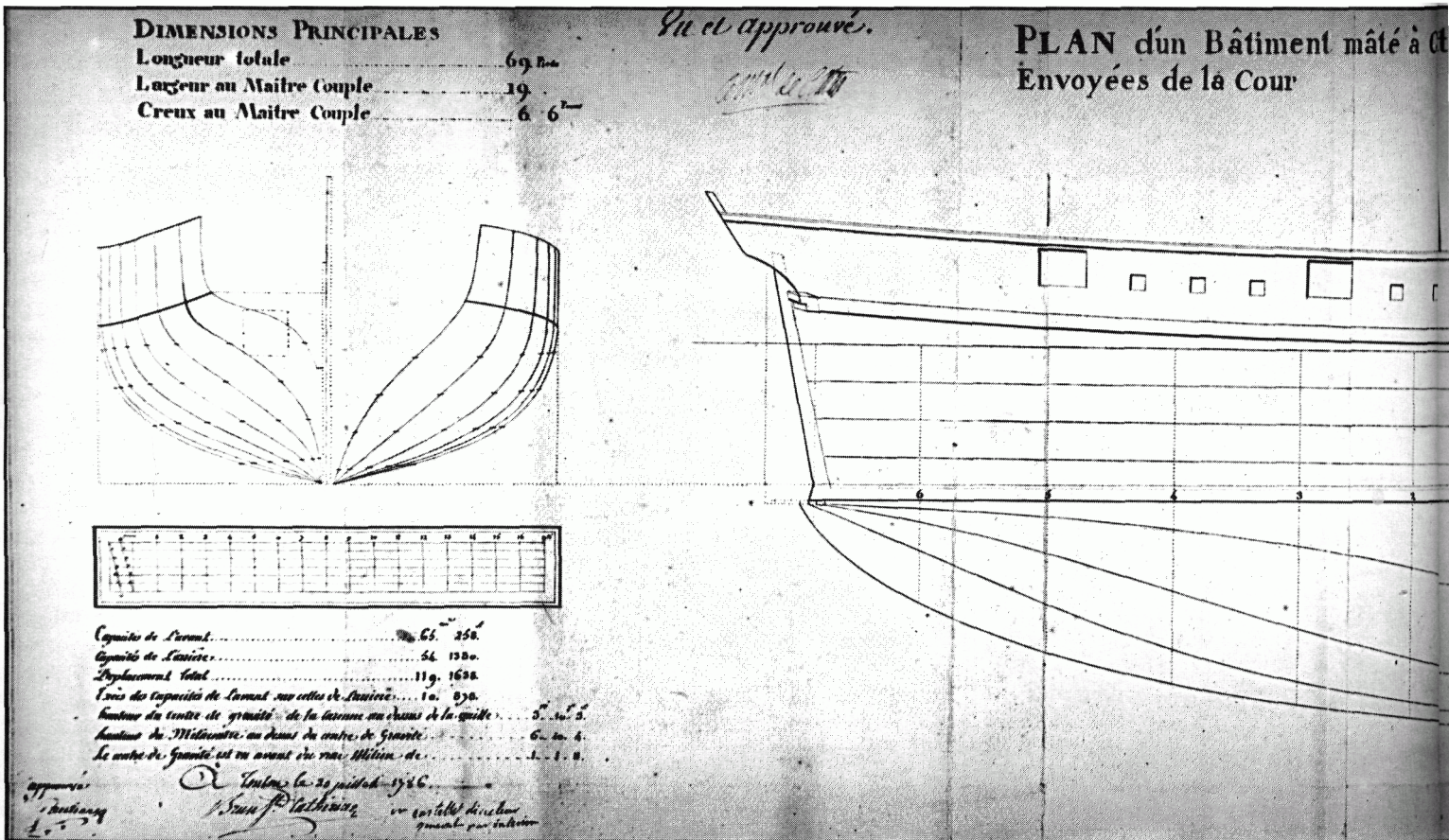
Ratio of position of centre of effort relative to a vertical, to the length of the vessel

Ratio of the same centre of effort relative to the plane of the load waterline, to the breadth of the vessel

Fore-and-aft Schooners 45-55 Fr. feet 0.240 - 0.290			Fishing Schooners 50-60 Fr. feet 0.310 - 0.370			Aviso Schooners 55-65 Fr. feet 0.286 - 0.280		
Length	∅	Pole	Length	∅	Head	Length	∅	Head
3.500	1/45	1/7	3.125	1/42	1/8	3.000	1/46	1/8
3.190	1/46	1/7	2.875	1/43	1/7	2.907	1/45	1/8
1.714	1/33		1.500	1/34	„	1.500	1/27	„
			1.438	1/53	1/5	1.597	1/53	1/4
			1.438	1/53	1/5	1.541	1/52	1/4
			1.000	1/40	„	1.000	1/50	„
Length	∅	Arms	Length	∅	Arms	Length	∅	Arms
0.670	1/62	„	0.627	1/48	„	0.660	1/57	„
0.311	1/53	„	0.300	1/48	„	0.344	1/52	„
0.289	1/53	„	0.300	1/48	„	0.288	1/50	„
			0.471	1/48	1/12	0.464	1/50	1/10
			0.471	1/48	1/12	0.464	1/50	1/10
			0.353	1/48	1/6	0.352	1/56	1/7
			0.353	1/48	1/6	0.352	1/56	1/7
						0.224	1/50	1/9
						0.224	1/50	1/9
0.084 aft of midships 0.352 for'd of midships 1 inch 1/2 per foot			0.023 aft of midships 0.459 for'd of midships 1 inch 1/4 per foot			0.024 aft of midships 0.372 for'd of midships 1 inch per foot		
„ 4 ins. 1/2 per foot			„ 4 ins. 1/2 per foot			„ 4 ins. per foot		
2.300			3.063			3.642		
0.033 for'd of midships			0.097 for'd of midships			0.091 for'd of midships		
1.336			1.595			1.720		

* Length on the waterline from outside of the stem to outside of the post.
** Breadth at the midship frame to inside of plank.

 Example of the maximum amount of canvas carried by a naval schooner. Scale 1/252.



VARIOUS DRAUGHTS OF SCHOONERS

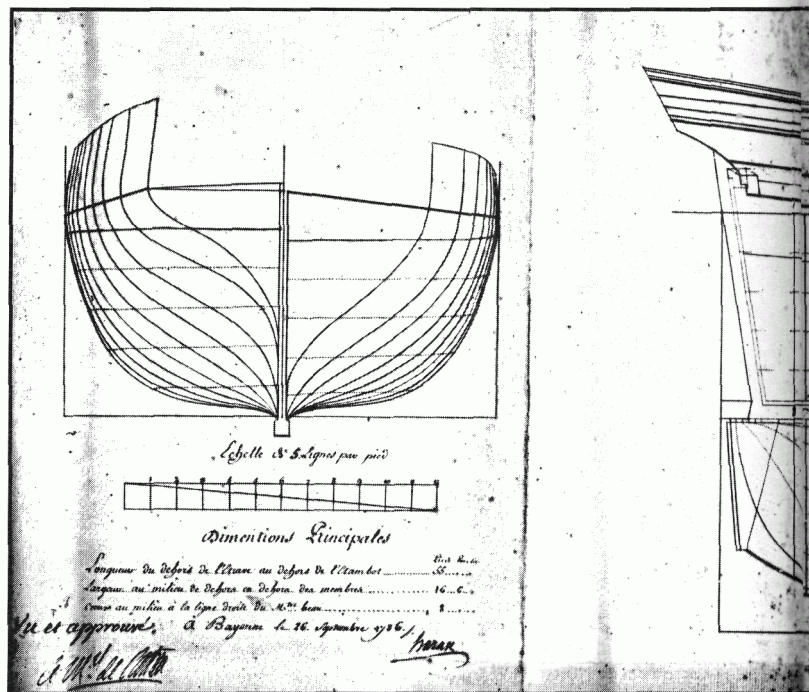
This series of nine draughts of schooners drawn up between 1786 and 1823 demonstrates not so much an evolution as a very real continuity, at least from that of P.A.L. Forfait dated 1787. These draughts are preserved at the Service Historique de la Marine in Vincennes, Series D¹ and DD¹. For the post-Napoleonic period there are a large number of draughts available, and I have shown here only a small selection.

All the draughts have been reduced to the same scale of 1/96. It can be seen that the longest naval schooners do not exceed 80 French feet [26 m.] on the waterline, while the smallest are about sixty feet [19.5 m.].

The armament of these little vessels is restricted to a small number of small calibre pieces, although the *Iris* class schooners were originally armed with 6 24-pdr carronades. In the series of archives numbered 8 DD¹ 9 there are preserved the draughts of the schooners *le Cerf* and *l'Antique*, built in 1806; an extreme case, these two vessels were armed with 10 24-pdr carronades, but such heavy armament can be considered as illogical for such vessels, and their draughts reveal hull lines which are excessively full.

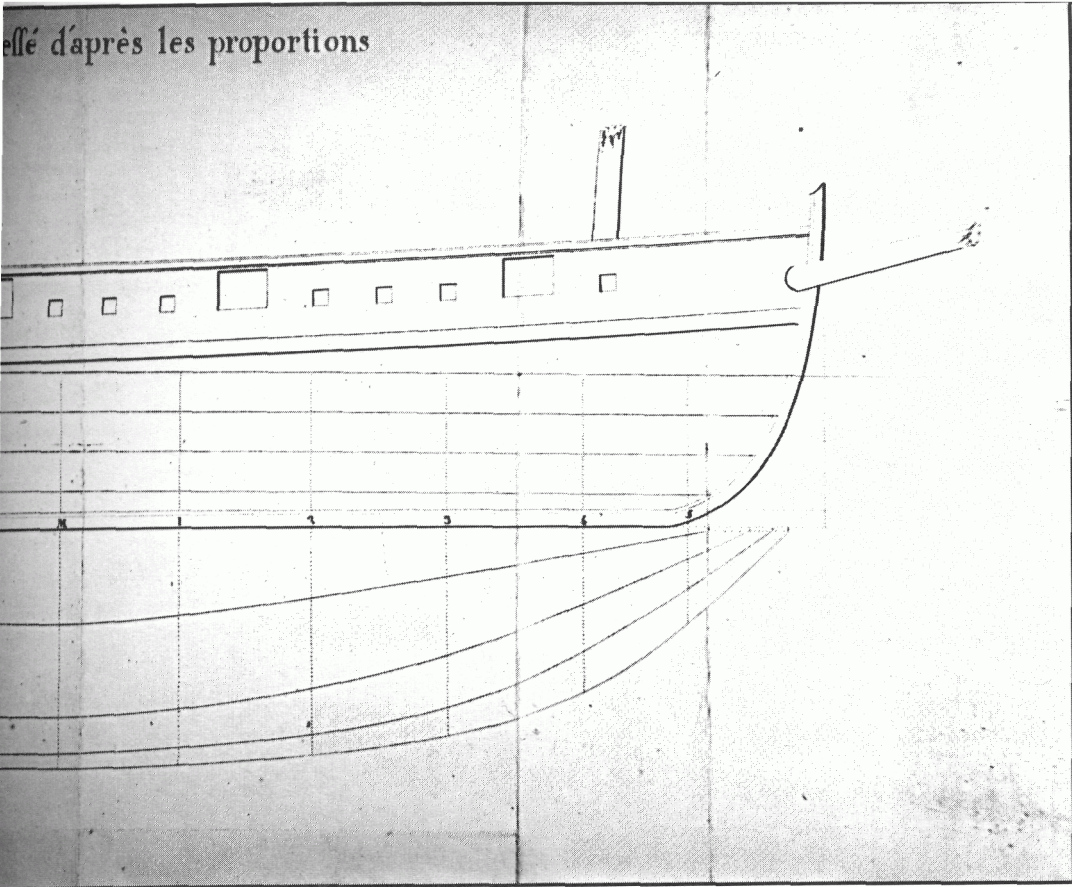
The same series of archives contains the draughts of what can only be described as a curiosity: a schooner of 100 tons burden! This is the *Autruche*, built at Bayonne in 1822. It has a midship bend which is semi-circular, and very little depth of keel.

I will just mention in passing the draughts, dated 1816, of a schooner destined for the hydrographic survey of the coasts of France. To this list I should add the draughts of the *Bacchante* (1812); the *Breostoise* and the *Miquelonnaise* (1815); the *Antilope*, *Epervier*, *Biche* and the *Colombe* (1836); the *Mouche*, *Mignone*, *Gentille* and

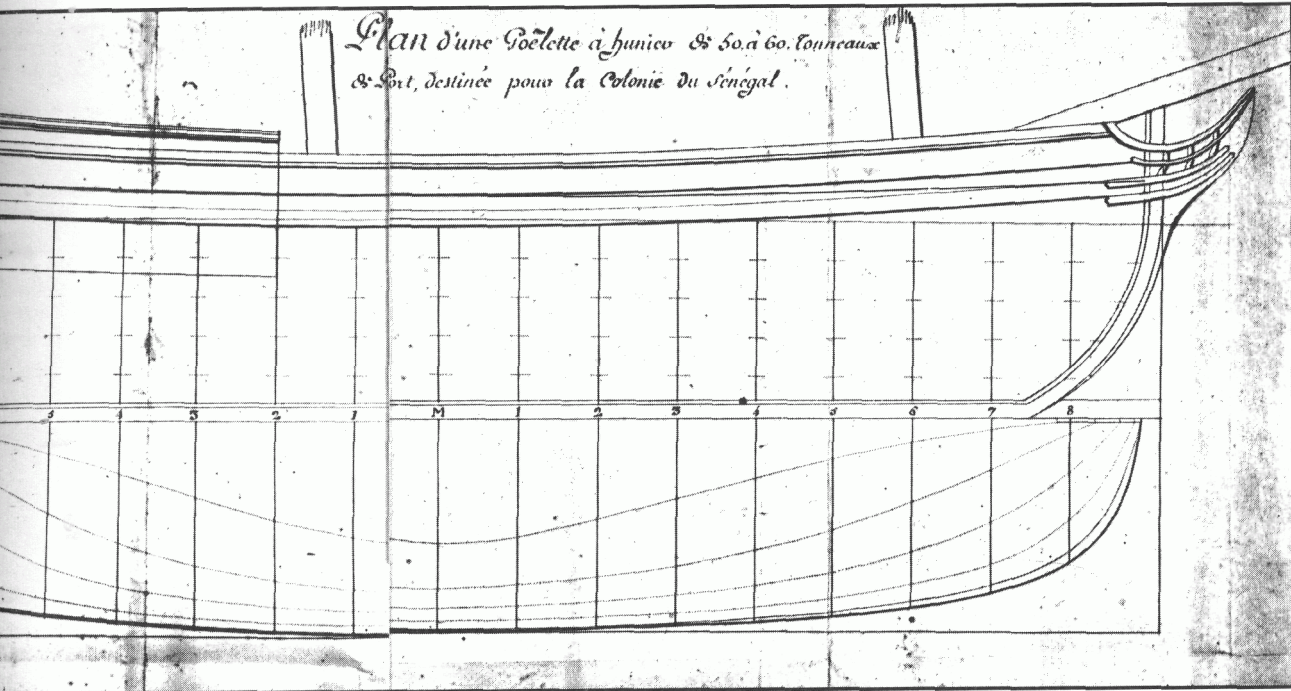


the *Fauvette* (1839); and the *Jouvencelle* (1841). Sail plans exist for the *Fine*, *Doris*, *Biche*, *Colombe*, *Gentille*, *Fauvette* and the *Turquoise* (among others). I give these details in the hope that those of you who are particularly interested in schooners will take the trouble to make use of this rich vein of archival material, of which I can give no more than an overview in these pages.

ellé d'après les proportions

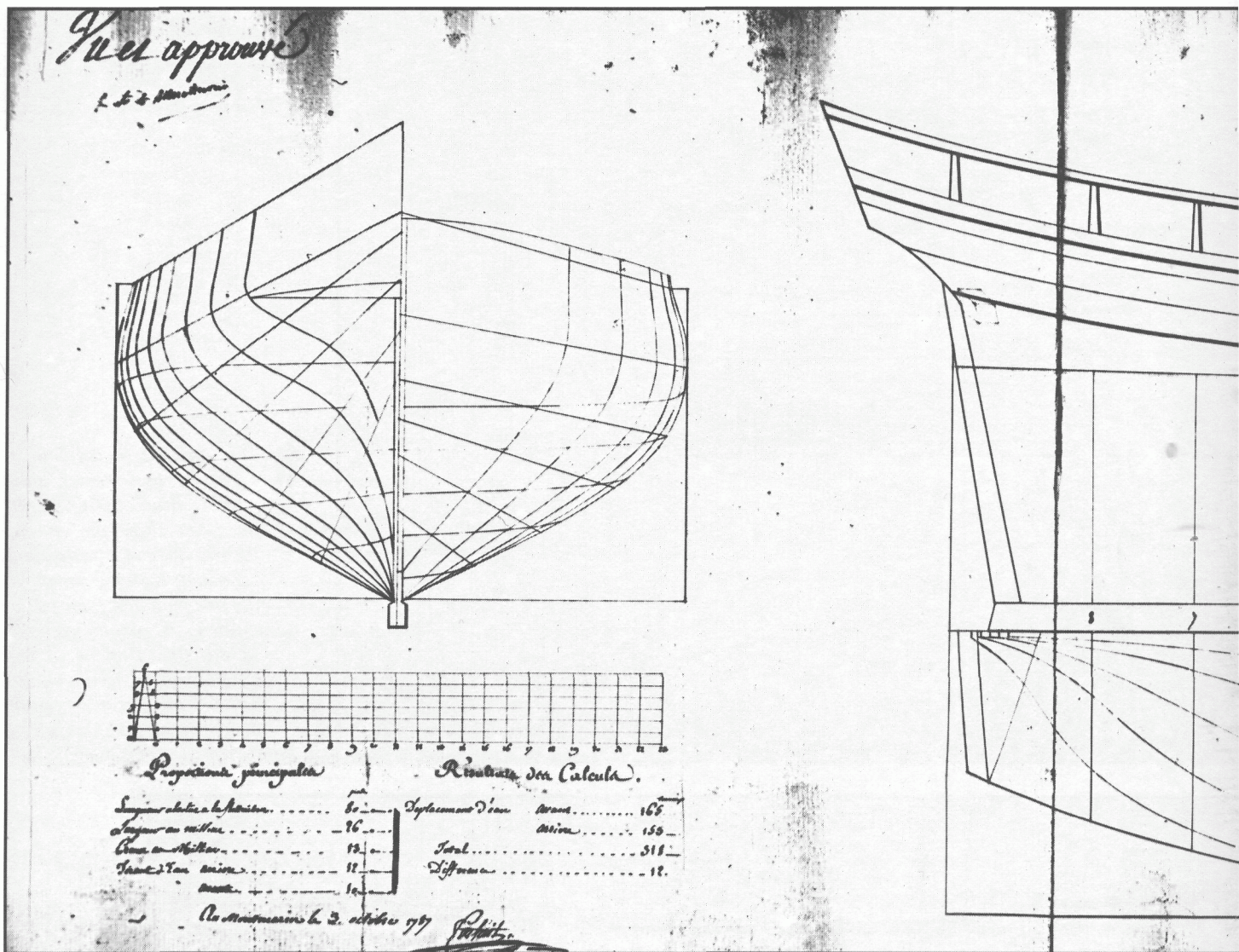


← This draught (dated Toulon, 1786) by the Master Shipwright Brun Ste-Catherine does not show the characteristic lines of a fast-sailing schooner. Note the oar-ports, the five gunports for 4-pdr or 6-pdr guns, and the raft-port in the stern similar to that found in store-ships or transports. Note also the position of the bowsprit, placed to starboard of the stem.



Plan d'une Goëlette à l'unico & So. à 60. tonneaux
& Port, destinée pour la Colonie du Sénégal.

This small schooner was built in Bayonne in 1787, and the draught bears the signature of the Master Shipwright Haran. In principle the vessel is unarmed, by which I mean that the armament was limited to a few swivels and blunderbusses. The volume of the underwater hull is not particularly characteristic of a vessel built for speed. It is possible that it is reminiscent of the first schooners built for the Navy in the 1760's.

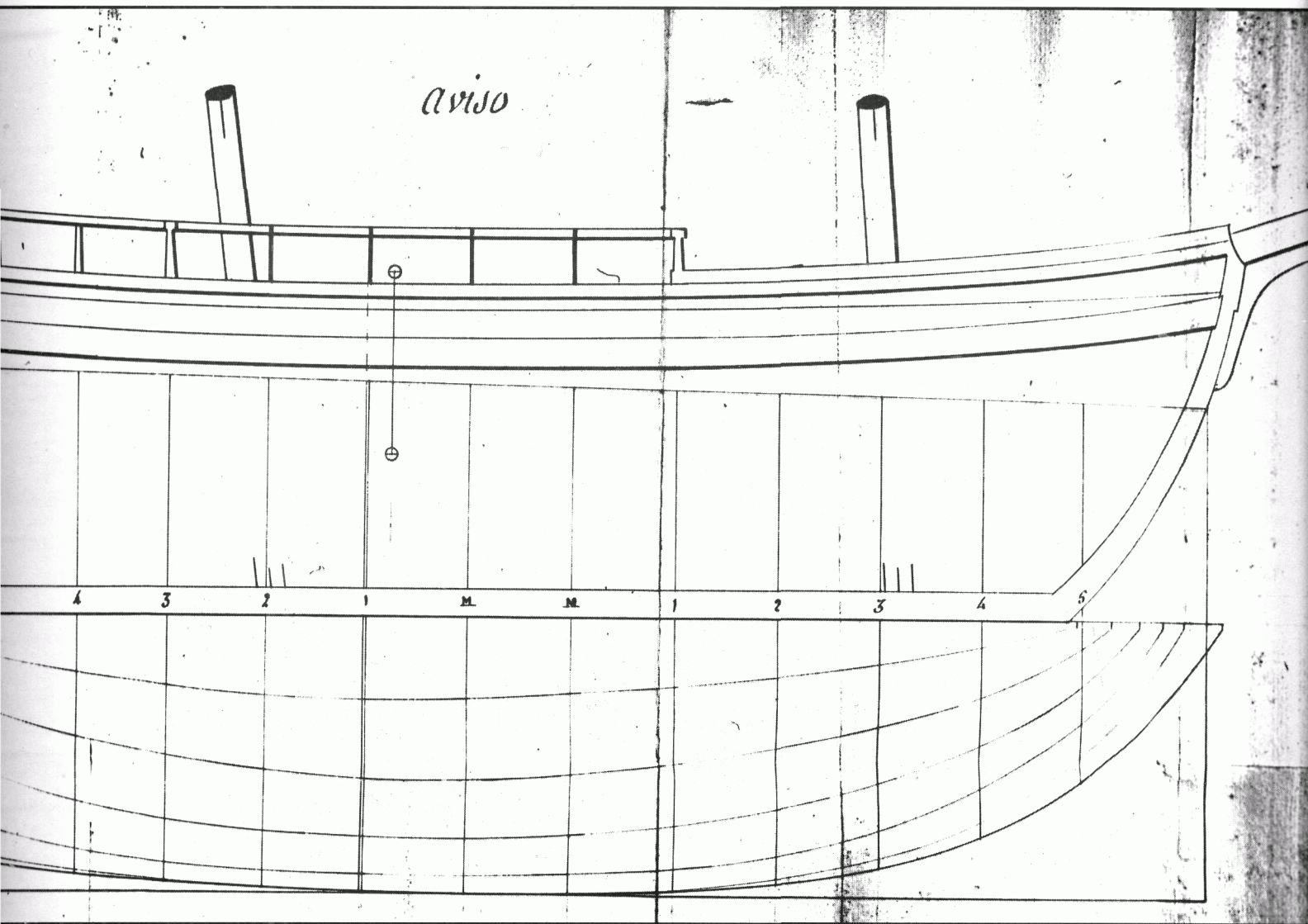


This draught of an aviso, signed by Forfait and dated 1787, shows a marked difference from the two draughts shown on the preceding pages. Henceforward all the Navy's schooners will show the same characteristics, probably inspired by American examples. This type of aviso has no carriage guns, and is perhaps similar to the packet-boats sailing between the United States and France.

The fact that both masts are raked identically suggests to me that we are looking at a schooner, since the foremast of brigs was generally vertical, or at least was raked somewhat less than the mainmast. Note the pronounced sheer of the wales by comparison with the two earlier draughts.

I reproduced this draught in the monograph on the brig *Le Cygne*, since some vessels of this type were rigged as brigs.

There is a lengthy biographical note on Forfait in *Le Bateau de Lanvéoc* (p.15), which I have summarised on the opposite page.



Pierre-Alexandre-Laurent Forfait was born in Rouen in 1752. A brilliant student both of the arts and the sciences, he was admitted to the Académie of Rouen at the age of 21.

In April 1773 he obtained a commission as *élève-ingénieur* and was posted to Brest. In 1776 he was awarded the gold medal of the Academy of Mantua for a paper in Latin on the dredging of rivers (the subject being imposed by the Academy).

With the support of the Master Shipwright Groignard he was appointed to the Académie de Marine in 1781, and contributed several articles to the *Encyclopédie Méthodique*.

A little later he was asked by de Castries, Minister of the Navy, to write a treatise on mastmaking, which was published in 1788 and was an immediate success.

From 1787-8 he worked in St Malo, and in the following year he moved to Le Havre where he designed the 900-ton storeship *La Normande*; this vessel was so successful that it served as the model for all vessels of this type built for the next 50 years.

At the end of 1789 he accompanied Lescallier to England, writing a long report on his return, mainly on the ships of the Hon. East India Company.

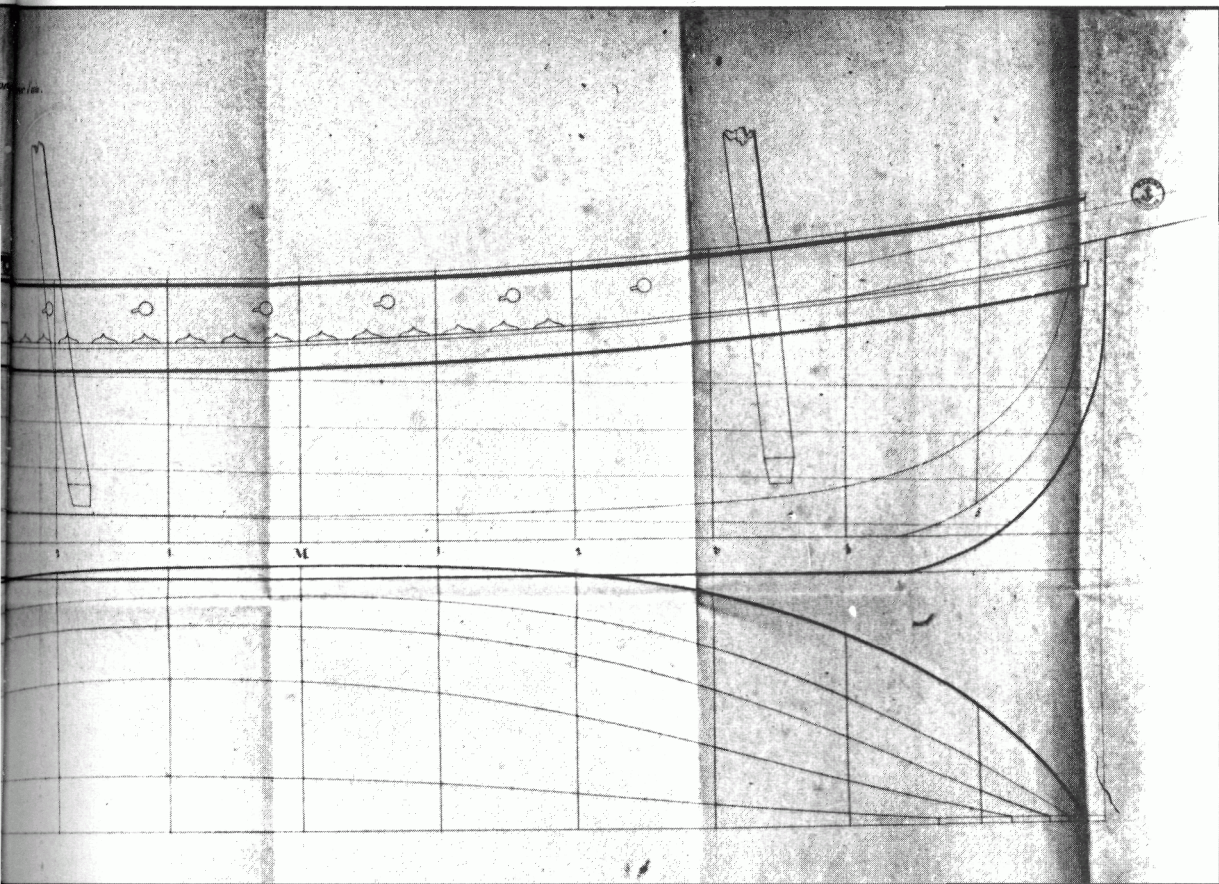
In 1792 he returned to Le Havre where he designed a remarkable frigate, *la Seine*, on which four other frigates were subsequently built.

In 1796 he was sent on a mission to the new departments in the north, charged with an inspection of the site of Antwerp. The following year he was sent to Venice to take possession of the Venetian fleet (and incidentally, the horses of San Marco!).

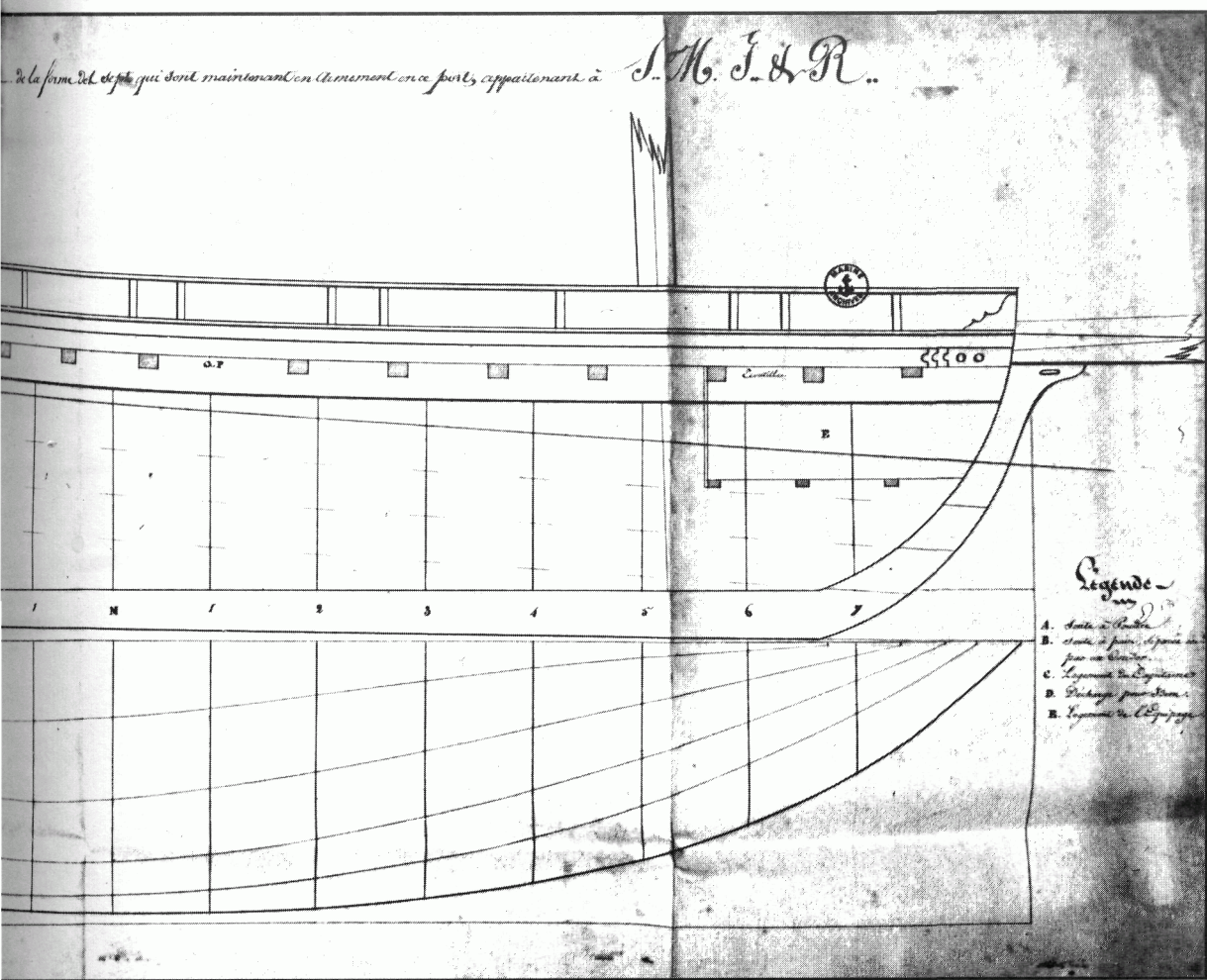
His next important task was to organise the naval aspects of the expedition to Egypt, returning then (as soon as the fleet had set sail) to Le Havre, where he was charged with organising the defence of the town against the bombardment by the English fleet.

Between November 1799 and October 1801 he served as Minister of the Navy to Napoleon, and on the collapse of the Peace of Amiens he was responsible for the planning and organisation of the invasion fleet at Boulogne.

In 1805 he was sent to Genoa as Prefect, but became embroiled in a political squabble with his successor as Minister, Décrés, and went into retirement. He died in Rouen in December 1807.



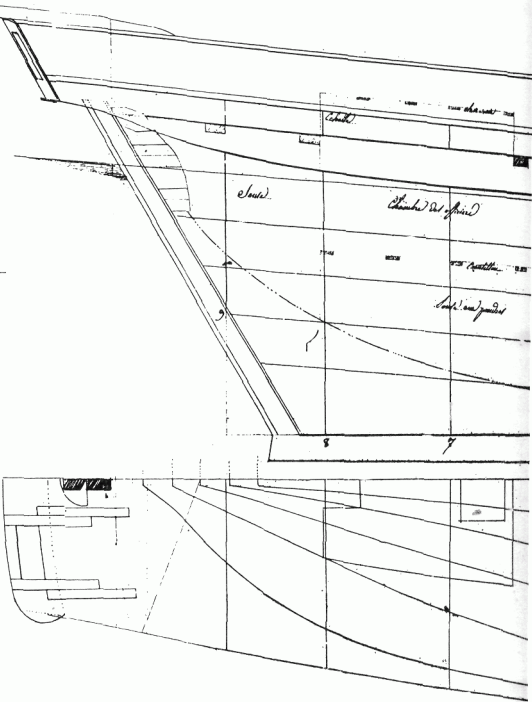
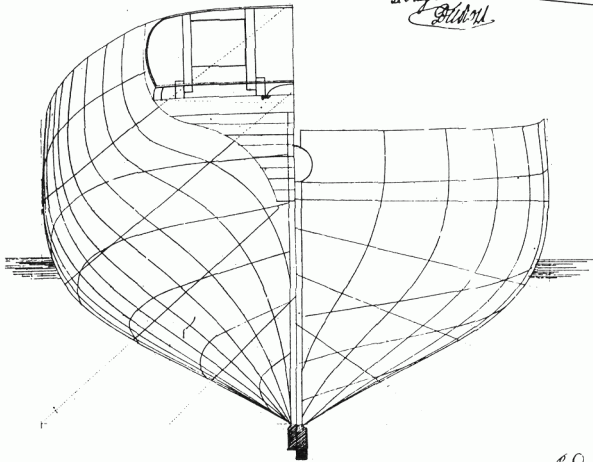
The draught of this elegant hull is signed by Pierre Ozanne (better known as an artist). The schooner carries no carriage-guns, but there are a large number of oar-ports. Dated 1806, I have been unable to discover whether the vessel was ever built.



Excellent example of a "Balahou"¹ schooner, a type peculiar to American waters. It can be considered as the prototype on which European schooners were designed.

¹ So far as I know, no such term exists in English. The French word is *Balau*, and is believed to derive from a West Indian hardwood used for building some schooners. According to the O.E.D., not all of them were successful, and gave rise to the word *ballyhoo* in modern English. There was a schooner *Balahou* in the (English) Royal Navy in the 1760's. [Trans.]

Dessin sur l'ordonnée de la Vierge pour la
Construction d'un grand voilier à trois mâts
approuvé par le capitaine général de la marine
le 14 mai 1813.
L'ingénieur naval
G. H. M.

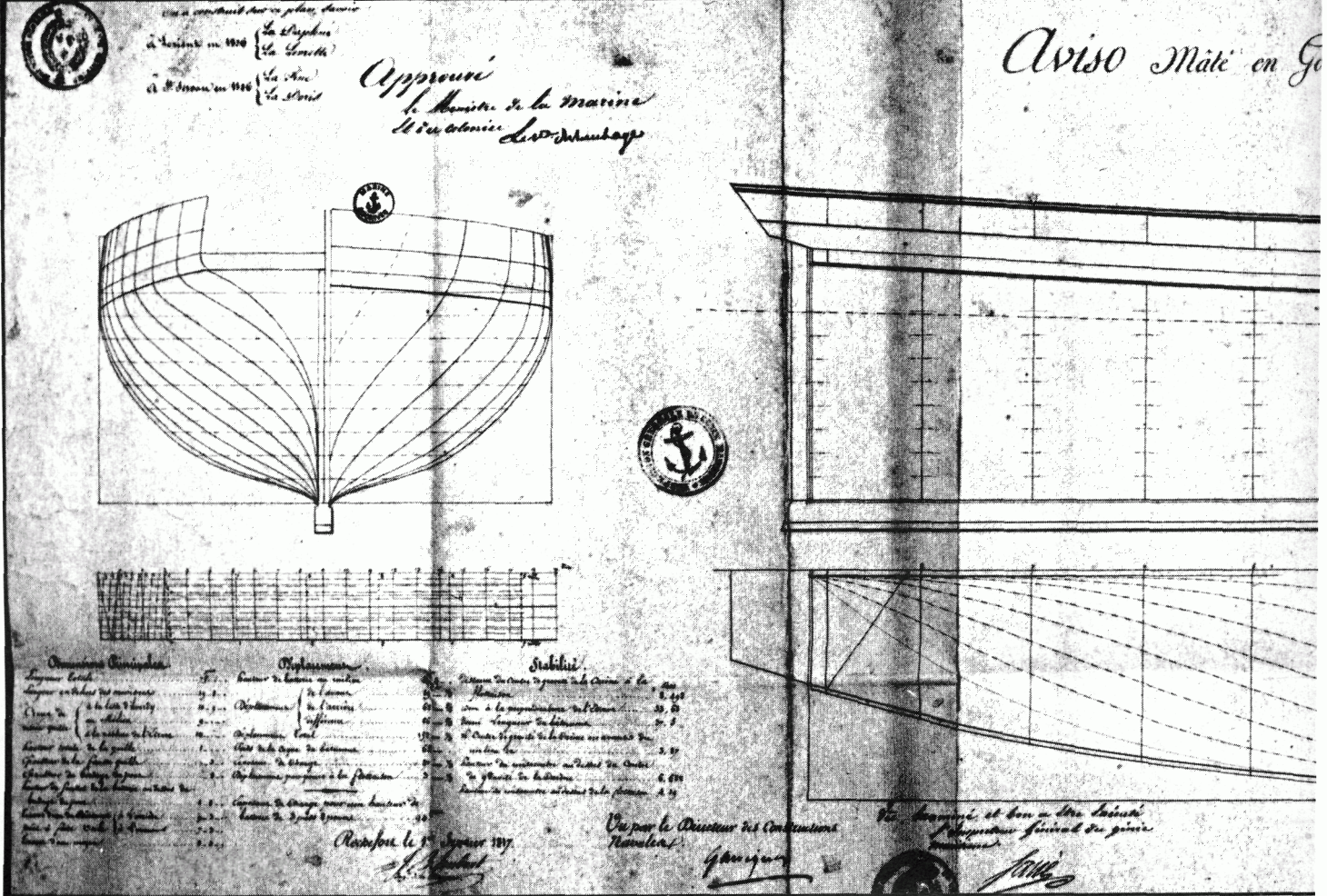


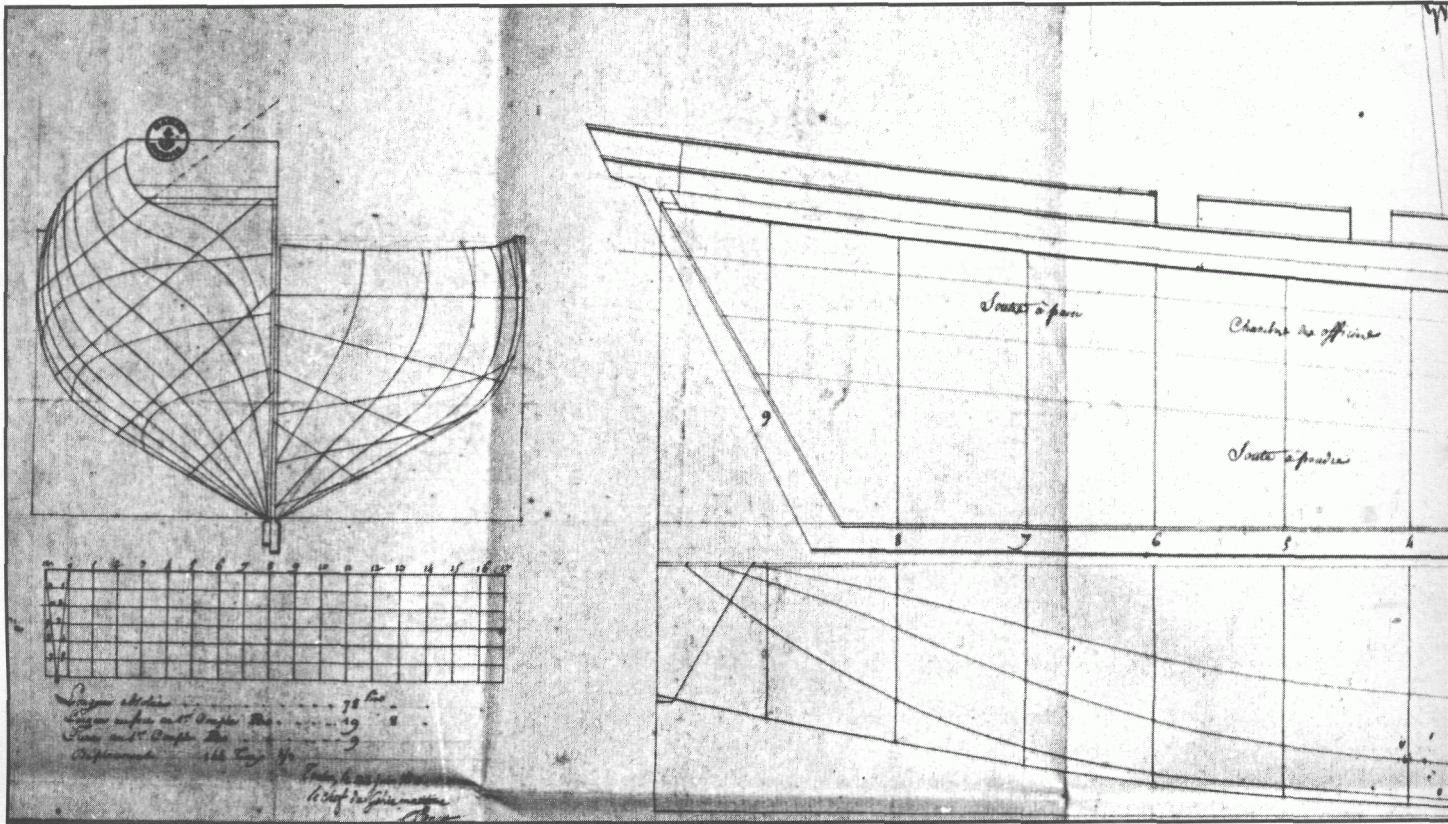
With l'Estaffette we have a good example of a schooner of the Imperial Navy. This draught is dated 1813, and served also for the Momus. On page 23 I have reproduced her rigging details and sail plan.

Large schooner of the Iris class, dated 1817. It is worth comparing this draught with the Plate on page 27.

Dimensions principales

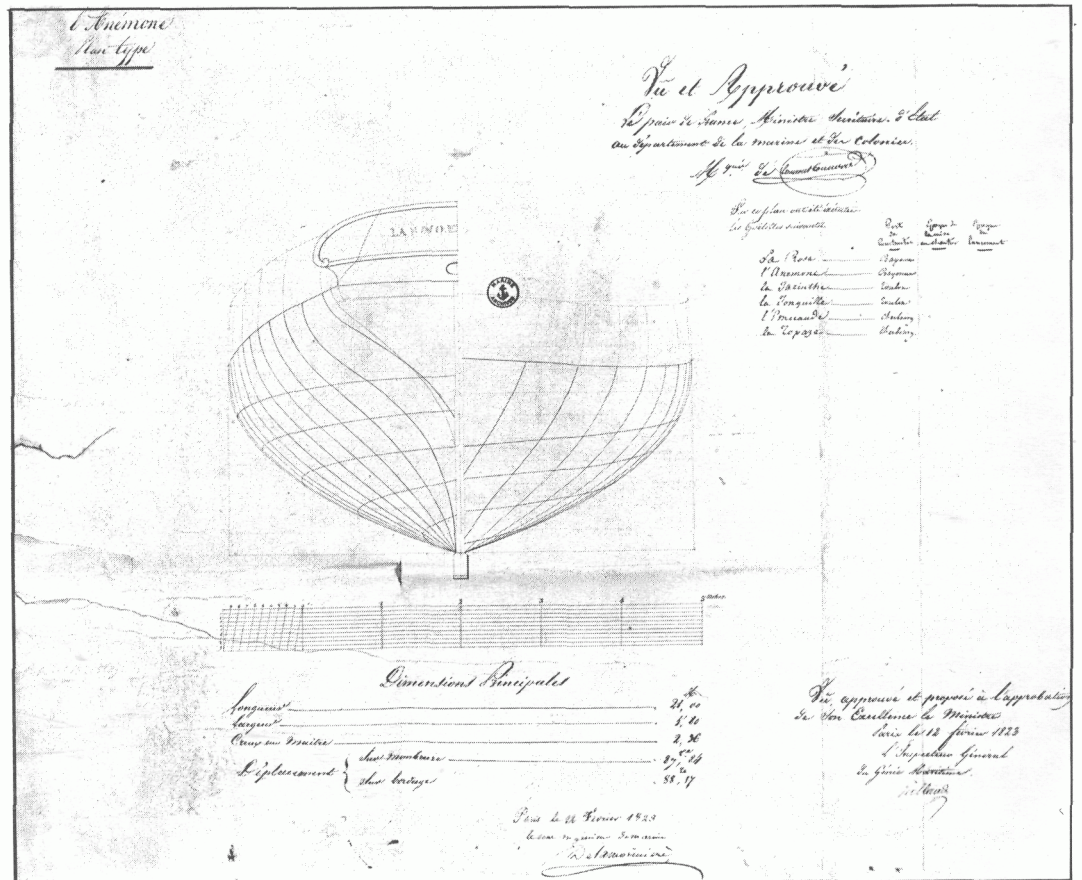
Longueur de pont en pp	78	—
Longueur au maître	19	— 8
Creux	avant	8 — 4
	au maître	8 — 10
	arrière	12 — 7

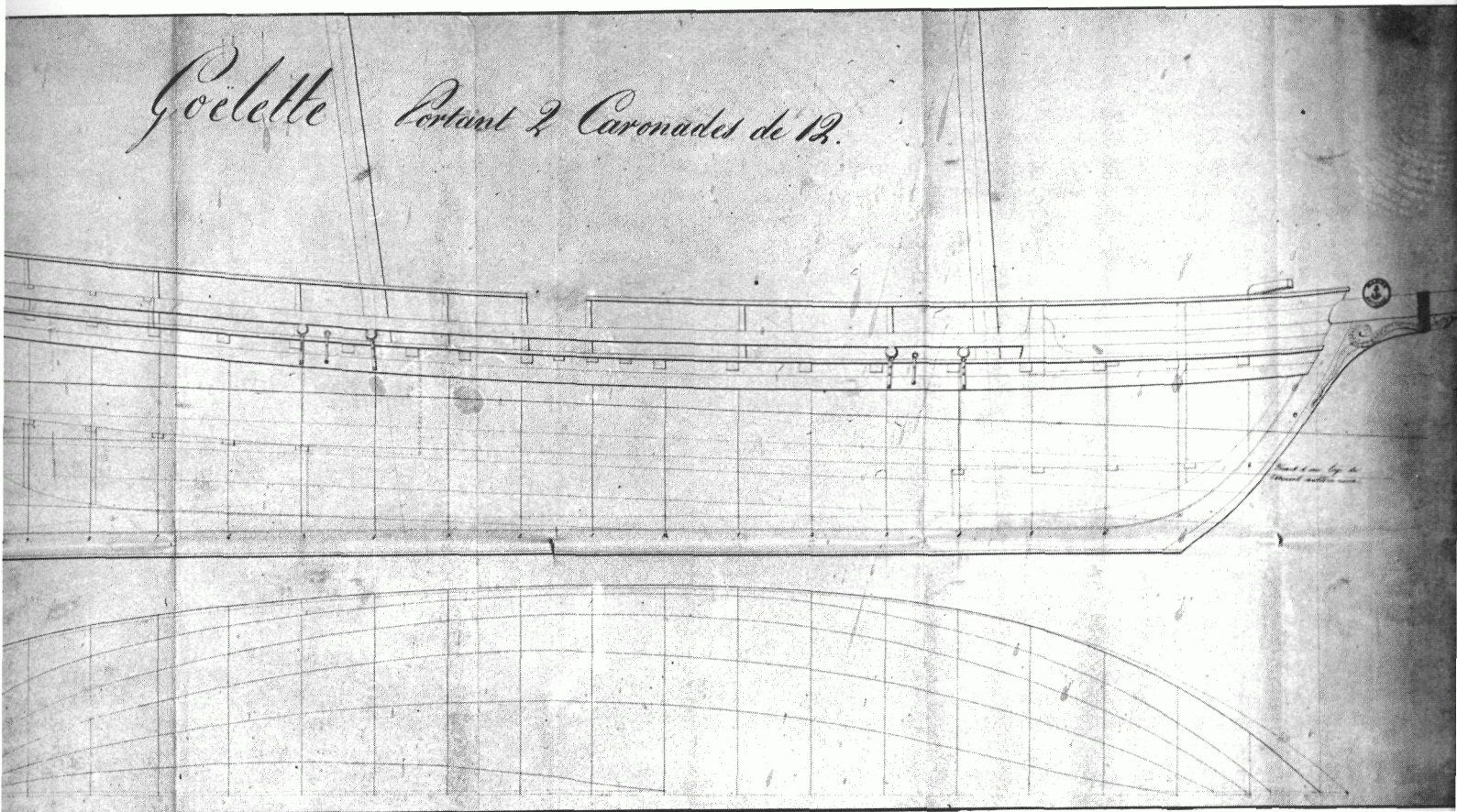
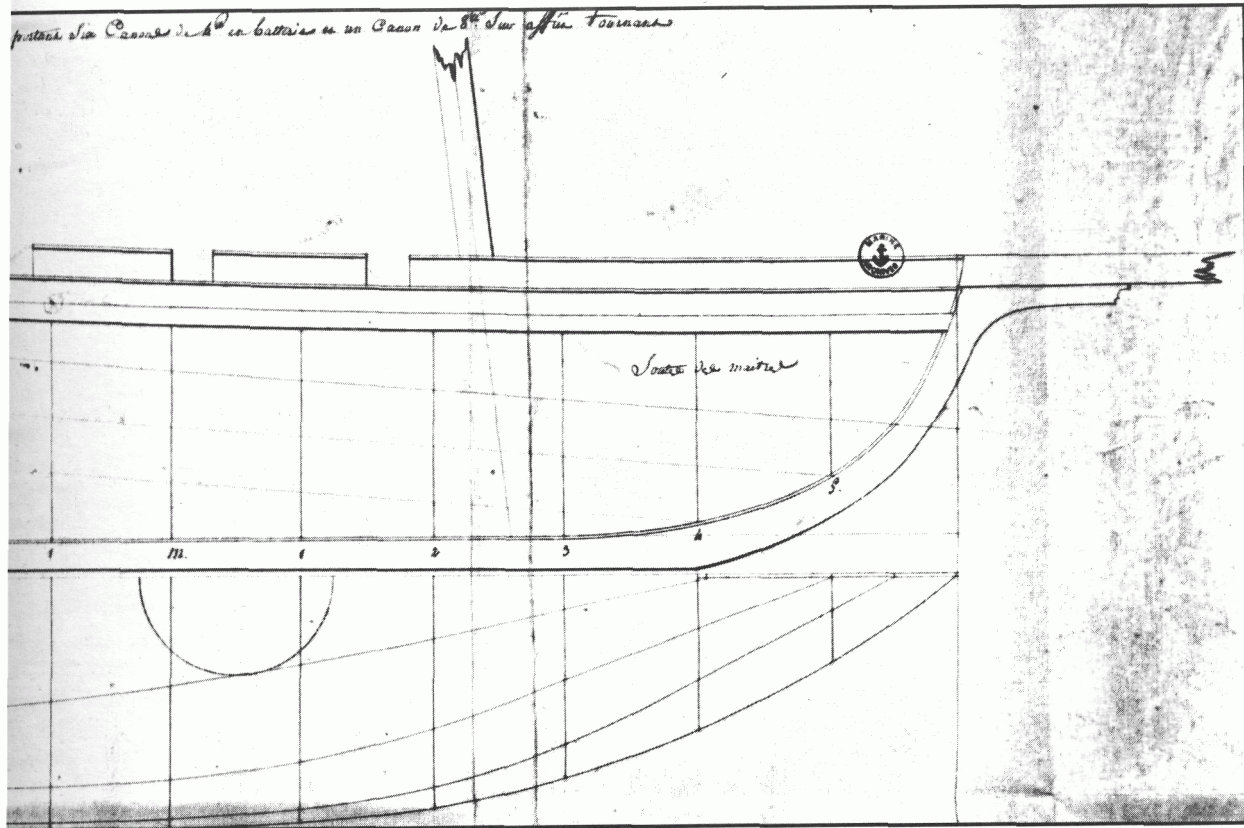




Draught dated 1818 of a schooner showing six gunports; according to the accompanying text however, only three of these were armed, with 4-pdrs. Note one peculiarity, the presence of an 8-pdr on a swivelling carriage.

Draught of the Anémone class of schooner, which served as the basic source document for the monograph on La Jacinthe.





NOTES ON THE SCHOONER RIG (French Navy)

● It is the steeply-raked masts which are so characteristic of schooners and which lend them such elegance. According to Forfait, the foremast is perpendicular to the keel, but it appears to be raked because of the considerable difference in draught fore and aft. The rake of the mainmast varies between 1 and 1½ inches per foot, or an angle of between 4° and 7°, so that its rake is extreme. The avisos built to the draughts of Forfait drew 2 feet [65 cms] more water aft than forward (see pp. 14/15), and the rake of the foremast was 8 lines per foot, that of the mainmast 1½ inches per foot. On the draught dated 1806 by Pierre Ozanne (see pp. 16/17) both masts are raked equally at an angle of 10°, although it is true that the difference in draught fore and aft is only 6 inches [16.3 cms]. Another draught dated 1812 shows both masts raked equally at an angle of 7.5°. Apart from a few exceptions, there is a general tendency during the period 1820-1850 for both masts to be raked equally at an angle which does not exceed 8°. It should however be noted in this context that the draughts by Delamorinière give a rake of 3° for the foremast and 7° for the mainmast.

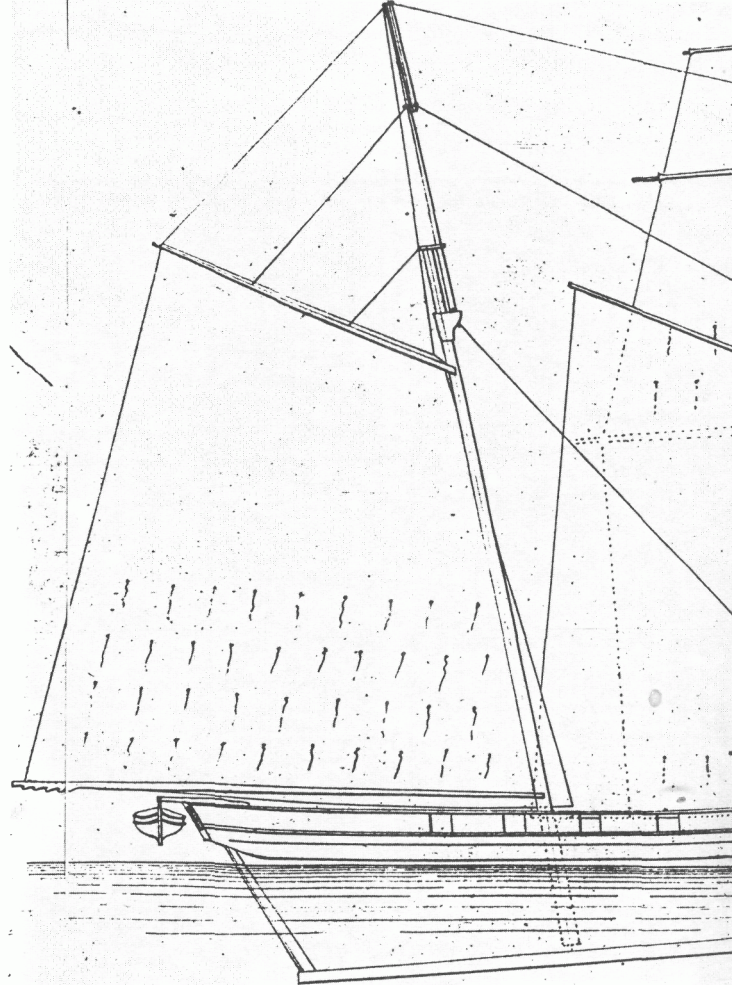
● Certain sail plans show the jibboom extended by a flying jibboom, thereby allowing the tack of a flying jib to be brought forward of the stem by a distance equal to ¾ of the length on the waterline. This arrangement allows the number of jibs to be increased to four: fore-topmast staysail, inner jib, outer jib and flying jib. The shallow steeve of the bowsprit does not allow for the rigging of a spritsail: it is absent from all of the sail plans which I have examined, and nor is it mentioned in any of the manuscripts, with the exception of two engravings by Baugean.

● Similarly, none of the sail plans illustrate a boom-foresail. In view of the fact that such a spar is a considerable encumbrance, and that the tack can in any case be extended by a swinging-boom if required, this is perhaps not surprising. However, some of the iconographic sources show a boom-foresail.

● For a period of many years schooners suffered from inadequate support of the mainmast against the effects of pitching. The mainstay is made fast at the masthead and runs forward to reeve through a block at the head of the foremast. From there it runs down the mast and is made fast at the deck by a laniard; this allows it to clear the gaff of the foresail. However, the stay is forced to pass through what is almost a right-angle, and this deprives it of much of its force. It was not until the second decade of the 19th century that it occurred to the riggers to use a double stay running directly down to the foot of the foremast; depending on the position of the gaff, one of the laniards is unrove and the mast is supported by the other stay alone; the foresail is not impeded in any way, and the stay runs down at an angle which is mechanically effective.

● The jaws of the gaff are often lined with leather, and a sheet of copper protects the mast at the place where the gaff bears. F.A. Costé, in his *Manuel du Gréement* published in 1826, indicates that the tackles serving as vang for the gaff are generally replaced by a single rope with two legs.

The jaws of the gaff are sometimes supported by means of a kind of saddle of wood nailed to the mast and reinforced by cleats.



le Proportions de la Mâture.

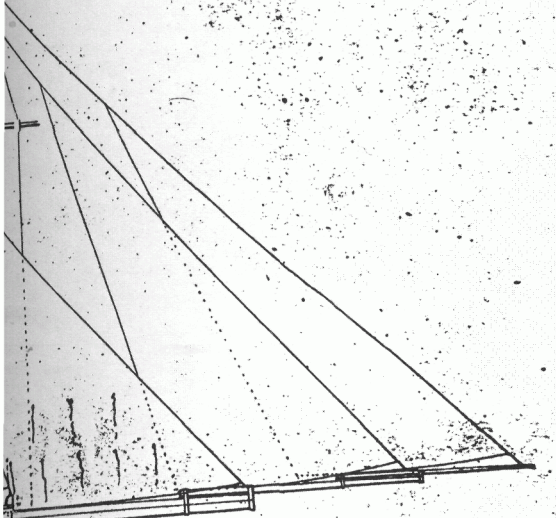
Nom	Longueurs		Diamètres		Races	
	En Toises	En Toises	En Toises	En Toises	En Toises	En Toises
Grand Mât	69		1 8	6	6	
Mât de misaine	66	0	1 6	6	6	
Brancart	17		1 4			
Mât de misaine du grand mât	53		7	10		
Mât de misaine de misaine	56		7	10		
Bâton de pav	25		7			
Vogue de soutien en fer	12		2 9	8		
Boîte vogue de soutien	66		2 6	8		
Mât de misaine de misaine	55		2 6	8		
Don de position de soutien	12		4 6	1		
Donne	69		5	0		
Courre de soutien en fer	24		1	3		
Courre de soutien de soutien	21		1	3		
Plancher en bois de hune du grand mât	18		6 6			
Plancher en bois de hune de misaine	18		6 6			
Plancher en bois de hune de soutien	19		1			
Mât de grand hune	11		3			
Mât de hune	15		6 6			
Mât de hune	20		5			

Proportions de la voilure

	Emploi	Clas	Donnée	1785	1800
une grande voile de grand mât	39 1/2	54	5 1/2	49	"
une grande voile de misaine	13 1/4	38	3 1/2	27	"
une voile de soutien	28 1/2	50 1/2	33 1/2	40	"
une voile de hune	46	56	46		40
une voile de hune	28	24	46		27
une voile de hune	20 1/2	10	28		"
une voile de hune	60	5 1/2	38		"
une voile de hune	51	42 1/2	24		"

The draughts of the schooner Estaffette have already been reproduced on pages 18/19, but these documents show the sail plan of the same vessel and the dimensions of her masts. The lower crossjack-yard is mentioned, which is significant, since so far as I am aware this accessory is unknown even to the best modern authorities on rigging. There are some interesting comments on the method of sheeting in the cross-jack. It is worth noting equally that a foul-weather gaff is listed.

This document also gives the proportions of the sails, among others two small triangular sails which are called "skyscrapers", although it would be more accurate to call them royals, since I presume that they were rigged above the fore-topgallant on the pole which extends the head of the fore topgallant-mast.



The sail plan in effect illustrates the two pages of text. Note the lower crossjack-yard. The poles extending the topmasts after the manner of royal poles are held in place by iron caps composed of two iron hoops like studdingsail boom-irons; the poles are hoisted on the fore side of the topmast. On the mainmast this spar serves only as a pendant staff. Note the two reef-bands on the lower part of the topsail, and those on the fore-topmast staysail which is hoisted forward of the storm jib (foul-weather sail). The flying jib, which came into general use by the beginning of the 19th century, requires that a flying jibboom be fitted, extending the jibboom forward. All these details are perfectly clear on the plan, despite the fact that its poor state of conservation made a good reproduction difficult. It is worth comparing it with the model illustrated on the following pages, which carries the same number of guns as the Estaffette (which was launched at Toulon in 1810), save that the mainmast of the model is rigged with both a topsail and a topgallant.

The Estaffette is armed with 6 iron 4-pdrs and with two bronze pieces of Venetian origin described as 12-pdr howitzers, which were the equivalent of the small 4-inch howitzers used by a number of foreign armies.

The Captain of the Estaffette wrote a report on her sailing qualities, which I reproduce here in extenso: "She carries her sail well, the rolling movements are gentle, although she pitches more rapidly and violently. She answers the helm perfectly and gripes badly as soon as it comes on a blow; she makes no leeway. In a topsail breeze she sails easily to within five points, and it would be possible to pinch still closer but she would then lose much of her speed and qualities.

Sending down the main-topsail and a great mass of rigging is a considerable advantage over what the topsail procures, which moreover tends to strain the mainmast, which is already strained enough by the enormous mainsail which she carries.

Note that the more she is trimmed by the stern the better she handles. I have not yet been able to trim her as much by the stern as I would have wished in view of her lack of capacity aft, a disadvantage which results from her fine run. For as soon as she has the wind from that quarter and it is not strong enough to drive her ahead of the following sea, she scends with such violence that were she not new-built and well-fastened it might give rise to some concern."

May 1813

This assessment is interesting if altogether too brief, but note his reservations concerning the main-topsail; he tells us nothing of her rate of sailing.

	Envergure	Crante	Pommes	Surst. - Pomm.	70
un Ch. p. o.	52	40 1/2	20	"	"
un Envergure	44 1/2	43	21 1/2	"	"
un. p. o. m. p. l. Du grand mat	"	31	39	53	"
un. d. Du milieu	"	34	74	30 1/2	"
un. Bonnette Du Brigantin	7	52	14	"	54
un. d. Du p. o. m.	18	40	18	"	"
un. d. Du ...	8	24	16	"	16
un. d. Du ...	"	10 1/2	20	16	"

Cirant d'eau
 Le Bâtim. mâlé. et doublé en Cuivre

	Estaffette	Le Bonnet
Carène	8	10
Carène	7	6
Différence	1	4
Le Bâtim. mâlé. et doublé en Cuivre		
Carène	11	11
Carène	6	4
Différence	5	7
Le Bâtim. mâlé. et doublé en Cuivre		
Carène	6	6
Carène	6	4
Différence	0	2
Le Bâtim. mâlé. et doublé en Cuivre		
Carène	3	3
Carène	3	3
Différence	0	0

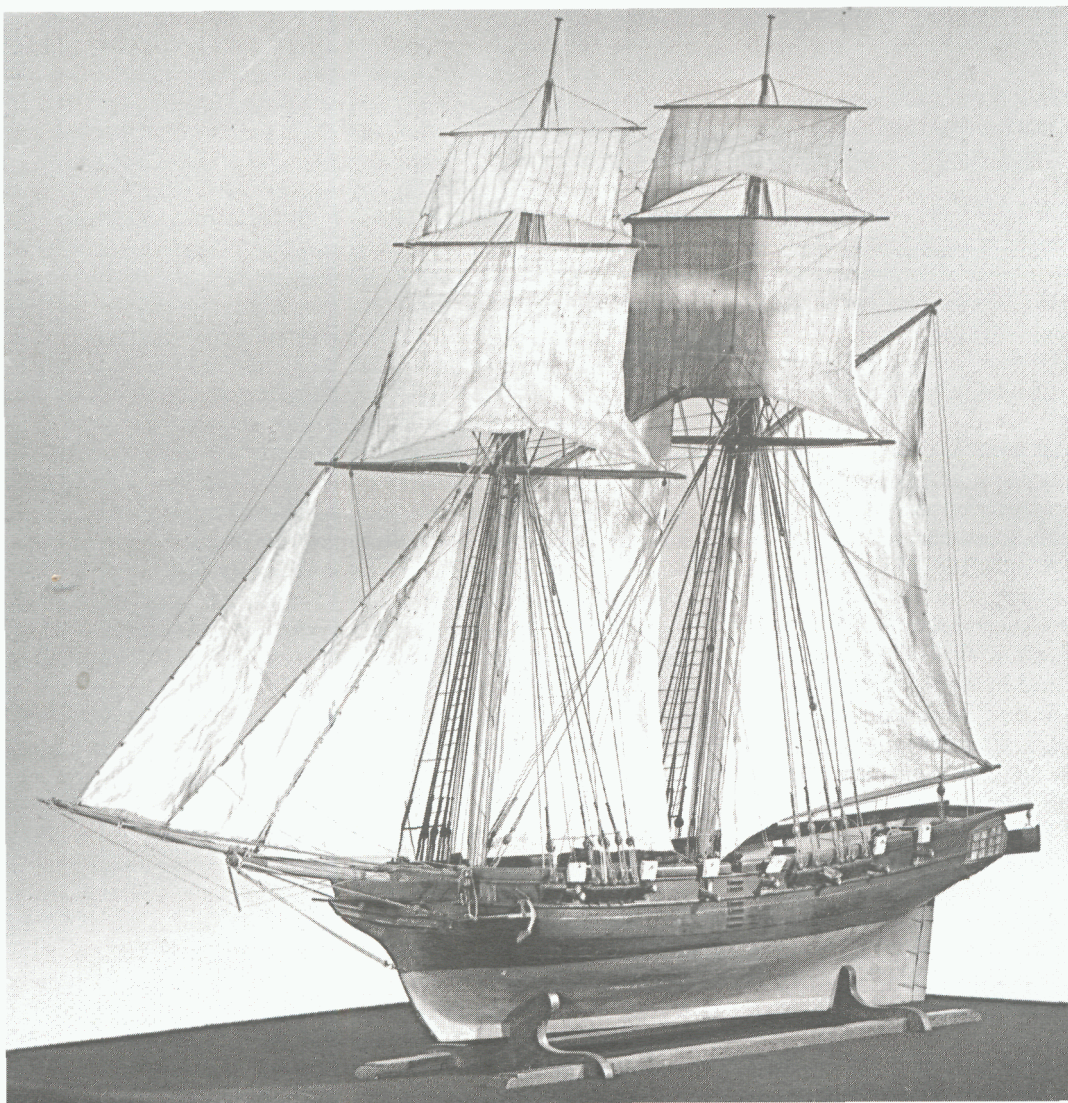
Le Bâtim. mâlé. et doublé en Cuivre
 Le Bâtim. mâlé. et doublé en Cuivre
 Le Bâtim. mâlé. et doublé en Cuivre



This unidentified model (21 MG) is armed with 12 guns. I would date it from the period of the Premier Empire. It is relatively large for a schooner, close to the size of a brig. Note the position of the gunport lids, the size of the upper works, and the quarter-galleries. The two masts are both rigged with topsails and topgallants, while a flying jibboom extends the jibboom forward.

MODEL IN THE COLLECTIONS OF THE MUSEE DE LA MARINE

This view of the port bow of the same model allows us to see that the vessel is armed not with carronades but with carriage-guns, probably 6-pdrs. It is worth examining the rigging details closely on both photographs.



LA JACINTHE, 1823-1841

La Jacinthe is one of a series of six schooners built to the same draughts, known as the *Anémone* class. The draughts are by the Assistant Shipwright Delamorinière (see the biographical notes on page 28). The draughts, which are dated February 12th 1823, are preserved in the archives of the Service Historique de la Marine in the series 8 DD¹; I have reproduced them on pp. 20/21, and you will note that the six vessels are named, as is their port of building: *la Rose* and *l'Anémone* at Bayonne; *la Jacinthe*¹ and *la Jonquille* at Toulon, *l'Emeraude* and *la Topaze* at Cherbourg. In addition to these six schooners built in 1823, five more were added in the following year: *la Mutine*, *la Daphné* and *la Légère* at Lorient, and *Le Colibri* and *la Fauvette* at Bayonne. No further vessels were built to this class.

In addition to the original draughts which formed the basis for this study, the draughts of *la Mutine* appear in the *Album du Génie maritime* (reproduced opposite), and a hull model of *la Topaze* is preserved in the collections of the Musée de la Marine; I have reproduced a number of photographs of this model on pages 58-59. I have followed the original draughts for the hull, and for the rigging details I have made use of the small sail plan which appears on the draughts of the Génie maritime, with additional information drawn from Forfait's classic *Elementary Treatise on the Masting of Ships* and from Costé's *A Manual of Rigging*. Further documents were provided by the large number of schooner draughts in the series 8 DD¹ 9. The upper works of *la Topaze* differ somewhat from the *Anémone* draughts, but as I have indicated I preferred to use the latter for the hull.

Likewise, the Génie maritime draughts of *la Mutine* also present certain differences, but I will comment on these as I come to the respective illustrations; in all events, they concern only the upper works.

The principal dimensions are as follows: Length on the deck from the stem to the sternpost 21 m., breadth at the midship frame to inside of plank 5.80 m., depth in hold from the upper face of the keel to the line of deck at the midship beam 2.36 m. The displacement is calculated at 88 tons 17².

The hull is copper-sheathed, but since this monograph is intended for relatively inexperienced modelmakers I have not drawn in the detail of the coppering on the plans³.

The schooners of the *Anémone* class were intended to serve as guardships in the West Indies and in Senegal, keeping an eye on the merchant shipping calling in at the roadsteads and ports of these colonies. However, in addition to this somewhat sedentary role, they were also used as avisos and for gathering information. The weakness, not to say absence of armament, which is limited to two small 12-pdr carronades, clearly shows that these schooners were not designed to go into action. For all that, several of them including *la Jacinthe* took part in September 1823 in the blockade of Cadiz. *L'Anémone* was wrecked in 1824, four of these schooners were struck from the active list in the 1830's, six more in the 1840's, of which *la Jacinthe* was one (she was condemned in 1841); the last surviving vessel, *la Rose*, was struck from the lists in 1844. The vessels of this class are entirely typical of the naval schooners, with fine and delicate underwater lines; indeed, the ratio between the volume of the underwater hull and the parallelepiped circumscribed⁴ is only 0.43, although it should be noted that for certain American schooners this ratio is as small as 0.35! By way of comparison, the comparable figure for a Sané-type 118-gun ship is 0.60, and for the *Normande* class of storeship designed by Forfait it is 0.62.

The upper works of *la Jacinthe* are notably light in their construction, with a simple rail supported by stanchions; this is

then berthed up with planking fastened to the stanchions. Only the forward part of the bulwarks are planked conventionally, in order to provide somewhat better protection from breaking seas. The deck is "flush" along its whole length, with the exception of the low deckhouse with rooflights over the Captain's quarters. As for the internal arrangements and fittings, see the text below.

The rigging details are entirely typical, without any "over-use" of square sails, these being limited to a topsail and topgallant on the foremast and the occasional use of a cross-jack.

To conclude this section I would like to have been able to reproduce a number of decommissioning reports of these little vessels, but the only one which has survived relates to *l'Emeraude* (Rochefort Archives, 2 G² 42, item 186), and unfortunately it is far from complete, giving no details at all of the vessel's sailing qualities.

¹ *La Jacinthe* was launched in March 1823. If this date is correct, we must assume that the draught is post-dated. The other schooners of this class were all launched in May and June 1823.

² These are metric tonnes. Formerly the ton was calculated on the basis of 2,000 pounds of 489 grammes, giving 978 kgs instead of 1,000.

³ Those wishing further details should examine Volume III of *The Seventy-Four Gun Ship*, p. 241 *et seq.*, or the monograph on *La Belle-Poule*, p. 48 *et seq.*

⁴ Volume defined by the length on the waterline to outside of rabbet, the breadth at the midship bend to outside of plank, and the mean draught.

The draughts which appear in the Mémorial du Génie maritime are a vital source of information on the French Navy of the post-Napoleonic period. One of the draughts concerns the schooners of the Jacinthe type, and I have reproduced it on the opposite page; in the following lines I will discuss the information which it provides. First of all it should be noted that the document is dated 1835, and that it shows one or two changes from the original draughts.

I have already described the bulwarks of la Jacinthe, and here you will note that they are planked up solid both internally and externally, which has the effect of making the upper works heavier. A number of small hinged scuppers allow the water which is taken aboard very easily on these small vessels to run off freely. Half a dozen oar-ports attest to the possible use of sweeps if required.

Among the later improvements, note: the use of chain-cables, simultaneous release-gear for the anchors, iron pumps, the substitution of a wheel for the hand tiller, an iron galley-stove using pit-coal installed on the deck forward of the mainmast. Modest improvements to the comfort of the crew in the form of lead-lined latrines abaft the catheads, and on the starboard side aft a seat of ease for the officers. Horseshoe racks partly of bronze at the foot of the masts are refinements for the belaying of lines.

The internal arrangements can be made out, and the key may provide some assistance for those who can read French and who have good eyesight! The warrant officers berth on the forward end of the orlop, while the men are further aft, separated from them by a small issuing room; they have small lockers for their sea-bags and hammocks. The wardroom and the officers' ladder are situated abaft the mainmast, and right at the stern are the Captain's quarters which have a separate ladder.

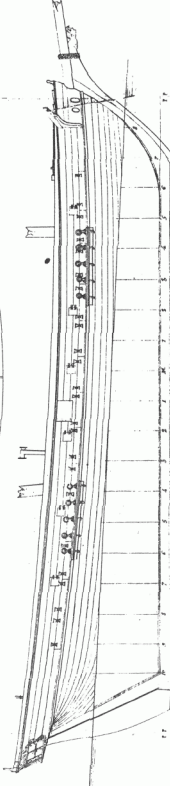
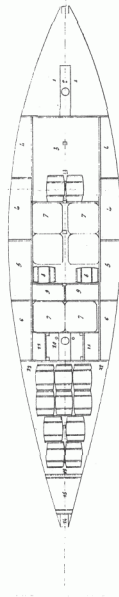
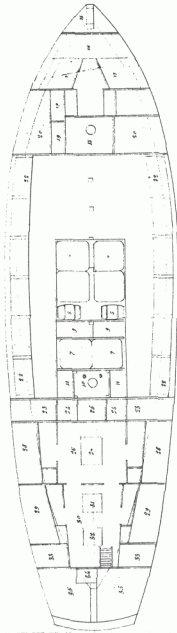
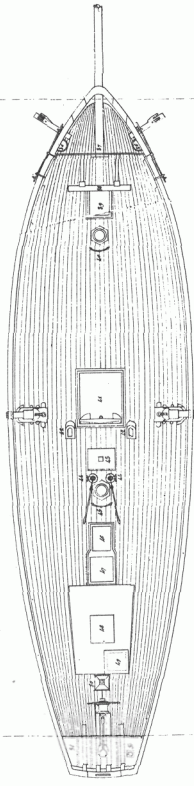
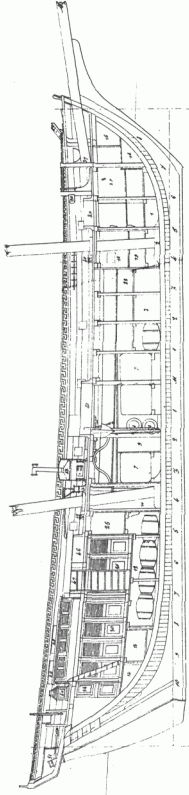
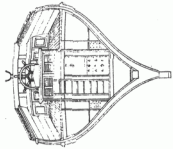
The main part of the hold is set aside for the water ration, contained in iron tanks containing 1,000 litres, and for the wine which is stored in casks. The chain-locker is situated abaft the main-hatch, below which it is possible to make out the spare anchor. A tiny magazine is placed beneath the Captain's cabin.

But many other details can be made out, with a little patience and a good magnifying glass!

To conclude, I should mention that the complement is 30 men including the officers, and the command of these little vessels is usually entrusted to an Ensign.

Plan détaillé d'une Goélette de 200 tonneaux de R.

(五 五 五 五 五 五)

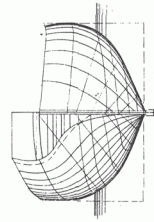


Plan type la jonquille, la Jacinthe, etc.

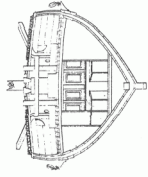
Par M. l'Ingénieur J. J. de la Marine.

Dimensions Principales.

Longueur	27,70
Longueur	5,40
Croûte au maître	2,56
Displacement	67,64
	sur le dry-dock
	68,77
Rapport du volume de la coque au pont et à l'équipement	
	0,45

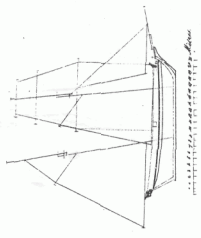


Toulon, Avril 1835.
L'Ingénieur de la Marine.
J. J. de la Marine.



Legende explicative.

1. Maître ou capitaine.
2. Complémentaire du maître ou ministre.
3. Lieu des vestiaires de maître et d'équipage.
4. Lieu des couchettes.
5. Lieu des couchettes.
6. Lieu des couchettes.
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45. Lieu des couchettes.
46. Lieu des couchettes.
47. Lieu des couchettes.
48. Lieu des couchettes.
49. Lieu des couchettes.
50. Lieu des couchettes.



Paris de Paris 1835, de la Marine, Ingénieur de la Marine.
Copié par le capitaine J. J. de la Marine.

Jean-François Delamorinière. Born in Meudon on the outskirts of Paris in 1791, he entered the Ecole Polytechnique in 1809. In 1811 he was admitted to the Ecole du Génie maritime, which at the time was in Antwerp. He qualified as a Student-Surveyor in 1813, was promoted Junior Surveyor (2nd Class) in 1816. Spent 1817 at sea on a number of different vessels. Director of Works at Bayonne in 1819, but his appointment there was brief since in 1820 he was attached to the General Inspectorate of Shipbuilding in Paris.

Promoted Junior Surveyor (1st Class) in 1821 and Surveyor (2nd Class) in 1831; living in Paris, Delamorinière occupied the post of Secretary to the Shipbuilding Council in 1832. He received permission to leave the service between 1834 and 1837 to take over the management of the Manufacture de St-Gobain. Following his return he was promoted to the rank of Surveyor (1st Class) in 1838. In the following year he moved to the management of Indret. He was put on the retirement list in 1841, retired in 1844, and died in 1867.

THE 12-PDR CARRONADE

The iron carronades adopted in 1804 were initially made in two calibres only, 24 and 36 (French) pounds. In order to extend the use of these weapons to the smaller vessels of the Navy, two further calibres were adopted in July 1818, those of 12 and 18 pounds. The weight of the little 12-pdr carronade is 381 kgs, and the bore measures 116.3mm. On the opposite page I have given a detailed drawing of the piece and of its carriage, together the detail of some of its ironwork.

The carronade is made fast on the "non-recoil" principle: the breeching is secured in a new way, and reeves through the ring of a bolt at the side of the gunport, where it is made fast by means of a throat seizing, i.e. crossed and turned back on itself, and the short end is lashed to the other part with two round seizings. The breeching is then passed back, through the breeching ring on the side of the carriage, through the cascable ring of the carronade, back along the other side through the opposing breeching ring, and finally reeves through the ring of the bolt on the other side of the gunport, where it is seized in the same manner as the other end.

The carronade is secured by tautening the breeching, using lashings passed through the after loops of the carriage and ringbolts in the deck alongside the carriage.

Side-tackles are not used to run the carronade out, this being done entirely by hand.

12-pdr Carronade, 1818 pattern.

This Plate gives a clear view of the piece and of its carriage. The latter is composed of a sort of bed of elm called the skead or sliding bed, on top of which is a similar timber called the carriage, which slides under the force of the recoil but is limited in the extent of its travel by the breeching.

A sort of pivot made of iron is fastened solidly to the skead, and slides in a longitudinal groove, binding the skead to the carriage but allowing the gun to recoil.

The carronade has a single trunnion or joint on its under side, secured between two cast iron joint chocks, and a round bolt passes through all three parts.

CARRIAGE AND 12-PDR CARRONADE, 1818 PATTERN.

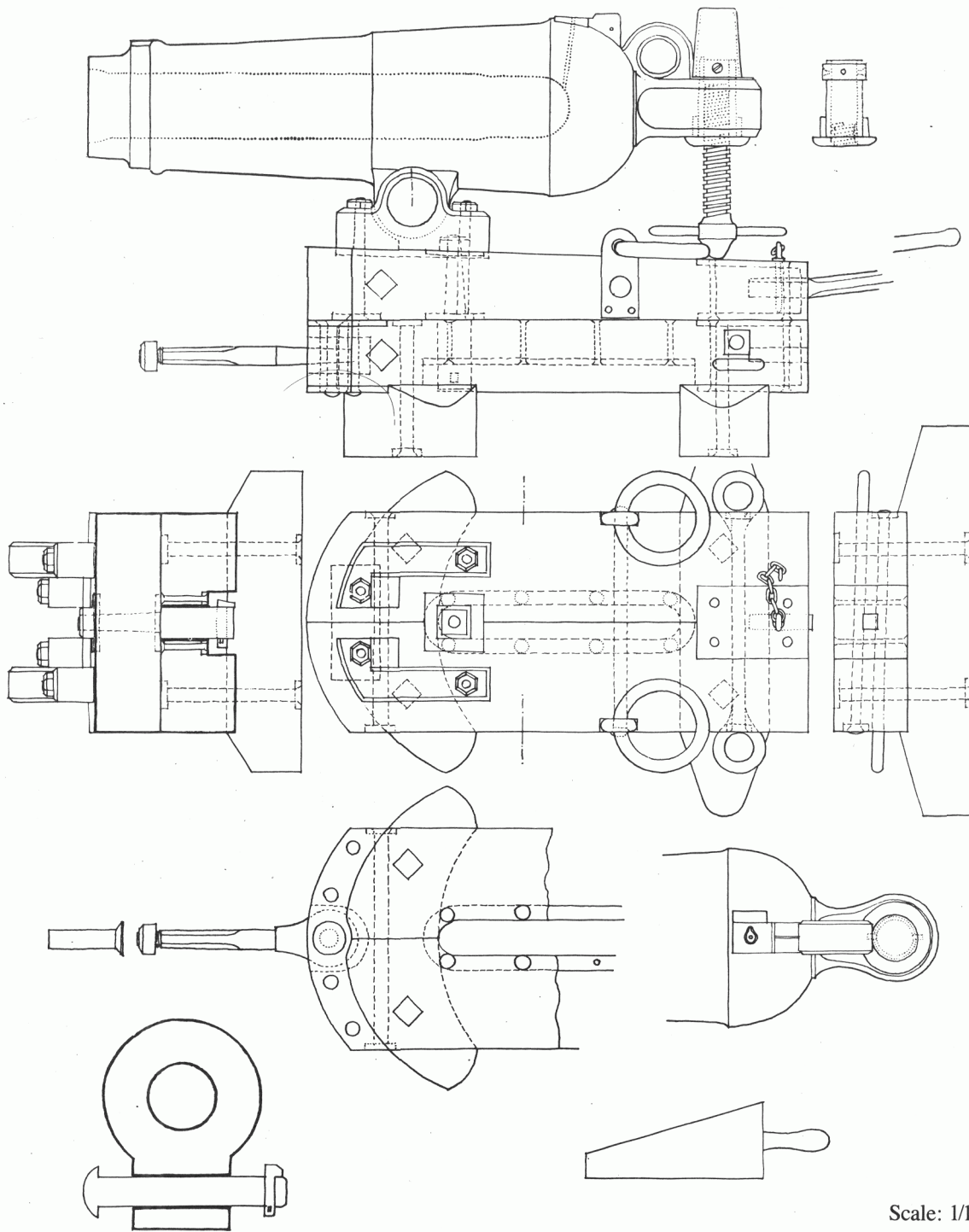
The carriage is composed of a skead or sliding bed formed of two timbers joined together by square bolts. The bed part is of elm, and it is supported by two deck blocks of oak. The upper part, called the carriage, is also made of two timbers.

Ironwork of the carronade: The elevating screw has a round head incorporating a handle (the horn). The elevating screw is of bronze, and after being threaded into the cascable it is secured in place by means of an iron collar. A cup-shaped screw box of copper is fitted over the top.

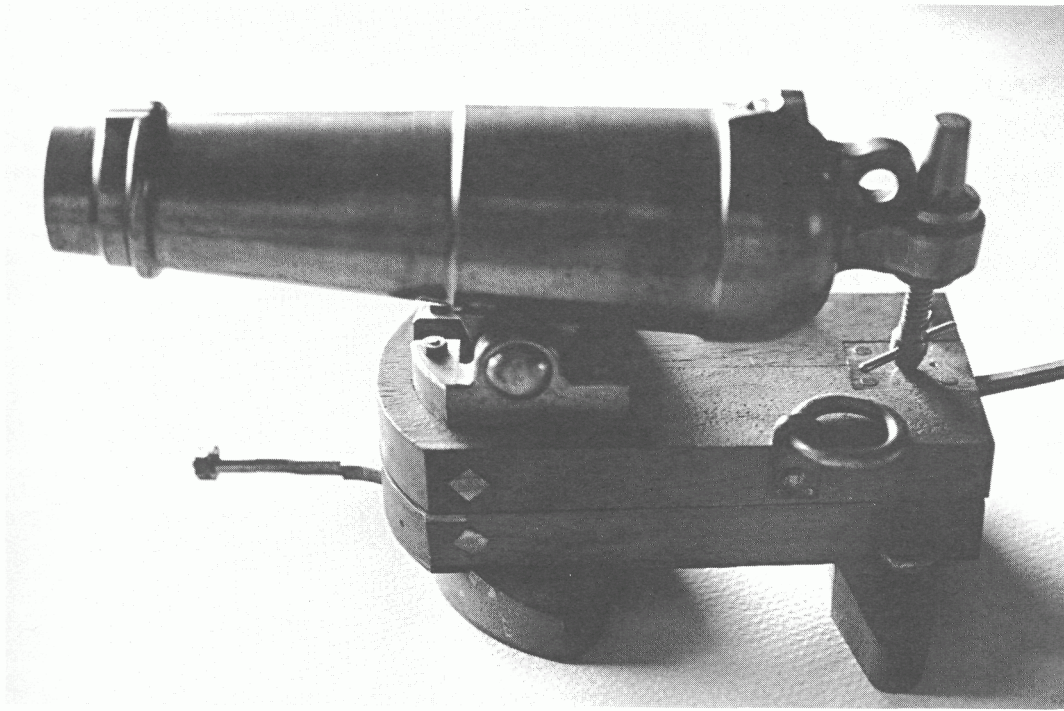
Ironwork of the carriage: One carriage bolt and rivet plate; two

cast iron joint chocks; one horseshoe plate; four joint chock bolts; four hexagonal nuts; one round joint bolt, running through the joint and the two joint blocks, and a forelock; one gudgeon and nut with gudgeon ring, rubbing plate and forelock; two breeching bolts with their rings; one training plate; one iron crow; one pin and securing chain.

Ironwork of the skead: One bed bolt; four deck block bolts; four rivet plates; one horseshoe plate; one under plate; one fighting bolt; a gudgeon plate lining the groove in the skead on the under side, which serves as a rubbing plate for the forelock of the gudgeon, fastened to the skead by means of eight rivets; one training plate; two loops for securing the piece; two rivet plates.



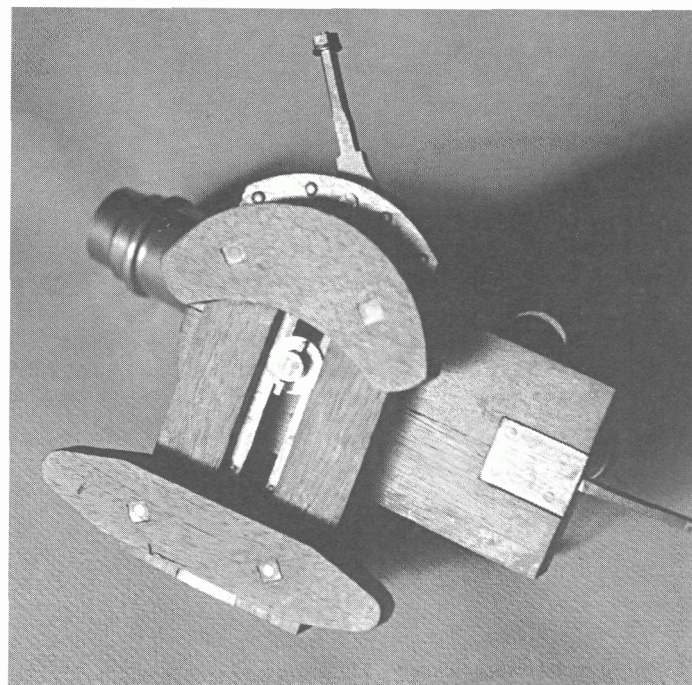
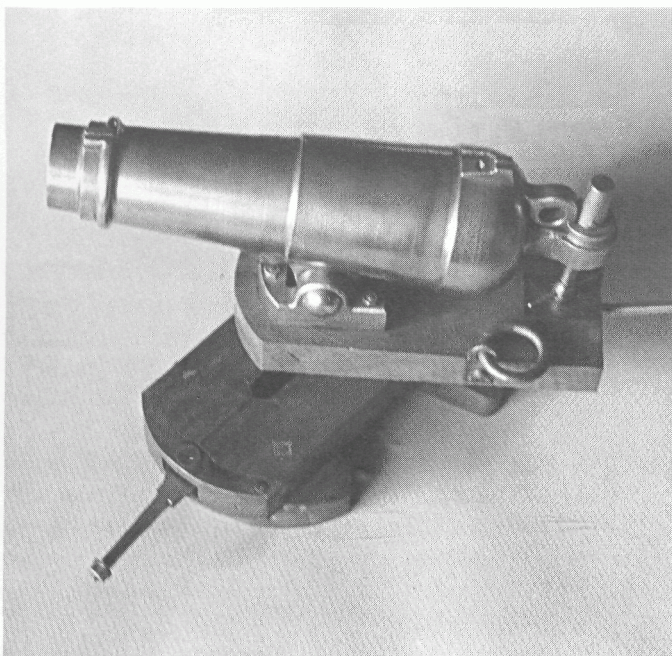
Scale: 1/12



Model of a 12-pdr carronade (1/10 scale).

This beautifully executed model is by an extremely talented modelmaker, Mr Marlin. The overall view should be compared with the Plate on the preceding page, which was used to make it. I would draw your attention in particular to the way the carronade is secured to its carriage, by means of the joint blocks bolted to the carriage and enclosing the trunnion. A large iron round-headed joint bolt passes through the joint blocks and the trunnion as I have already explained.

This view from below demonstrates the principle of the sliding carriage. Note the longitudinal slot or groove with its reinforcing plate (gudgeon plate), through which the gudgeon is inserted. Note also the metal horseshoe plates protecting the forward end of the carriage, and the fighting bolt which secures the skead to the side of the ship.



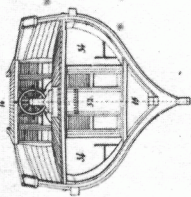
This third photograph complements the two others and illustrates the sliding of the carriage on the skead, which is supported on two deck blocks which can be varied in thickness to allow for the camber of the deck.

By way of comparison with la Jacinthe, here is another draught taken from the Mémorial du Génie Maritime. These are the draughts of the schooner la Béarnaise, which is larger than la Jacinthe.

PLAN DÉTAILLÉ D'UN AVISO MÂTÉ EN COÛLETTES, Portant 6 canonnades de 18 (la Béarnaise).

Les armements de ce bâtiment ont été faits en 1832.

5^{ème} Coupe arrière.



Plan type Chris. B. Rondelet et la Béarnaise,
par M. H. Dubois, Ingénieur de la Marine.

Dimensions principales.

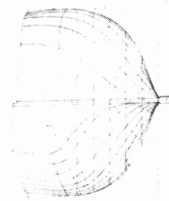
Longueur totale	46, 865
Longueur en dehors des canonnades	8, 319
Largeur en dehors de la quille	5, 428
Largeur en dedans de la quille	5, 268
Profondeur de la cale	5, 467
Profondeur de la soute	8, 385
Profondeur de la soute au fond	2, 680

Déplacement.

Nombre de tonnes en pleine charge	1, 205
En pleine charge	87, 651
En pleine charge	61, 516
Poids de la coque du bâtiment	46, 981
Déplacement de charge	83, 549
Déplacement pour un tonneau de commerce à la voile	1, 205

Mâtelle.

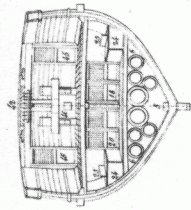
Distance de la quille au point de la soute	1, 205
Distance de la quille au point de la soute	1, 205
Distance de la quille au point de la soute	1, 205



Plan de la quille.

Chris. B. Rondelet et la Béarnaise,
par M. H. Dubois, Ingénieur de la Marine.

3^{ème} Coupe avant.



Legende explicative.

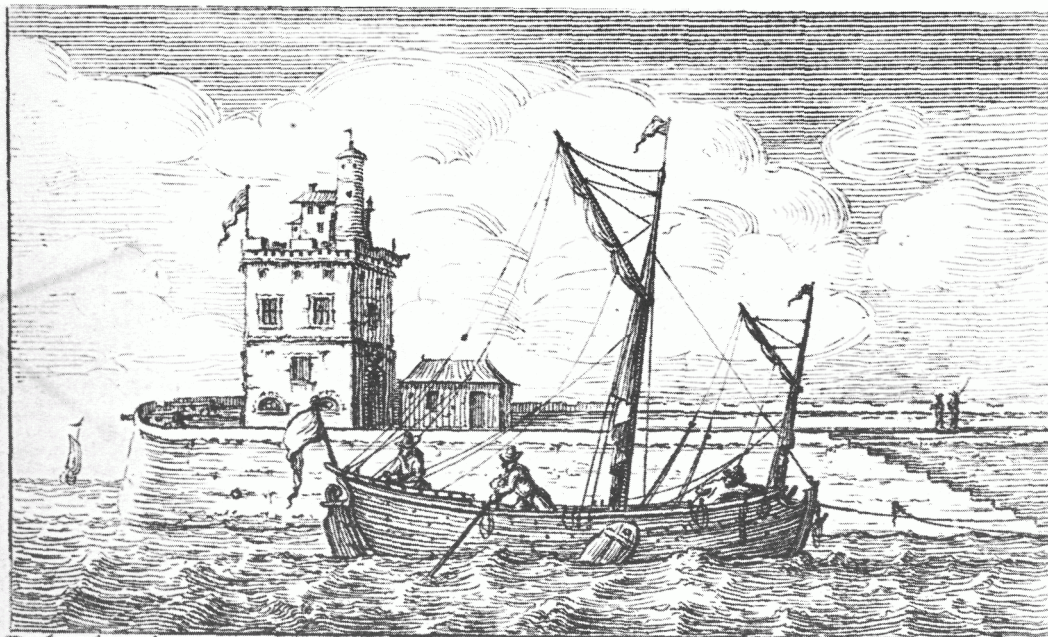
Cale.

1. Soute de charge de la soute d'appoint.
2. Soute de la soute.
3. Soute de la soute.
4. Soute de la soute.
5. Soute de la soute.
6. Soute de la soute.
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15. Soute de la soute.
16. Soute de la soute.

Suite de l'explicative.

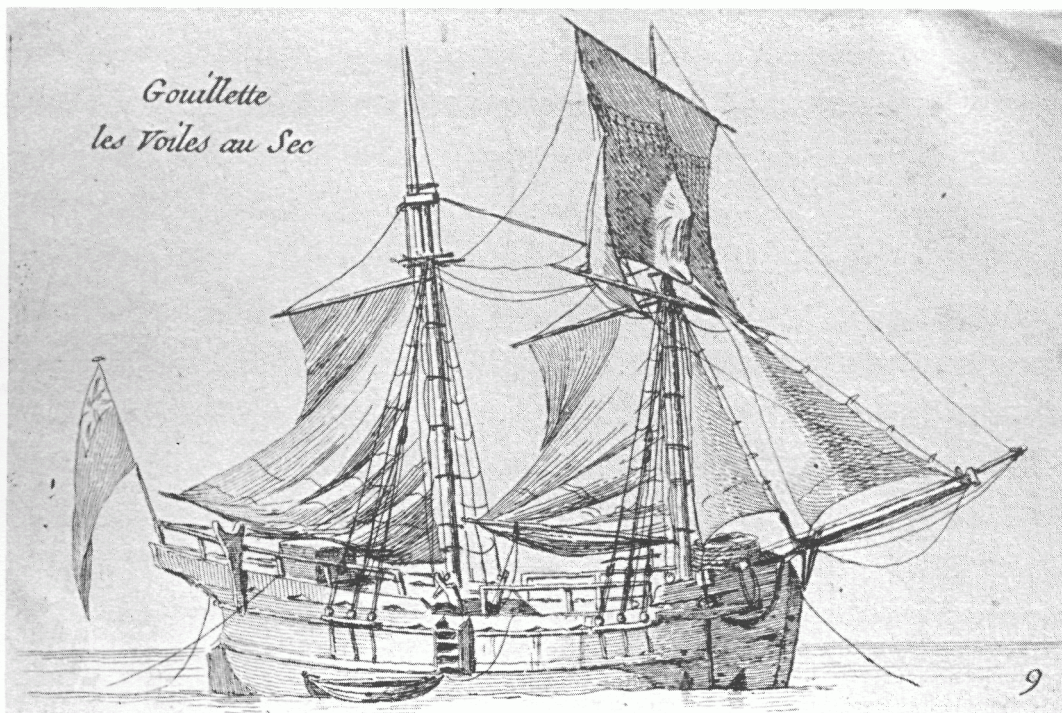
58. Soute de la soute.
59. Soute de la soute.
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96. Soute de la soute.
97. Soute de la soute.
98. Soute de la soute.
99. Soute de la soute.
100. Soute de la soute.

VARIOUS PICTURES OF SCHOONERS by P. Ozanne – F. Roux – J.-J. Baugean



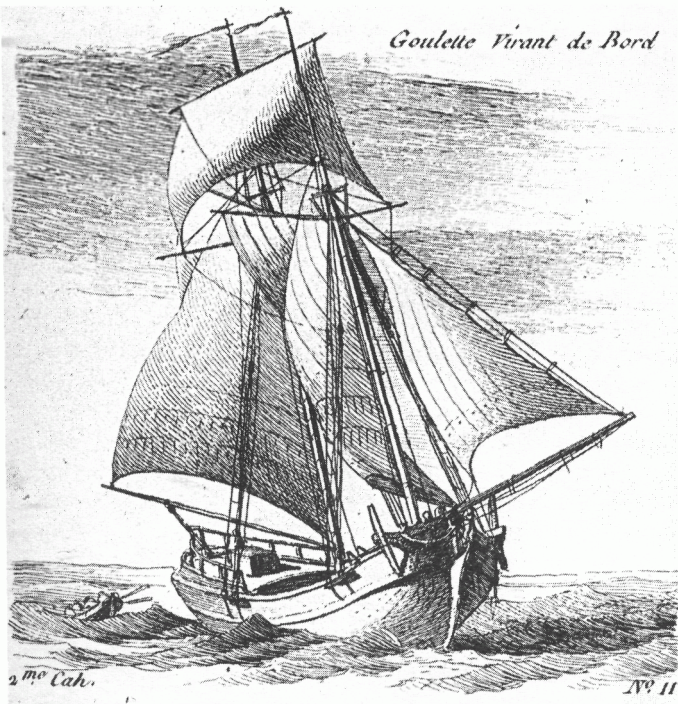
*Belandre, bâtiment plat de 80. Tonneaux servant pour le transport des 10.
Marchandises sur les Costes de Picardie et Flandre. D*

Selected from the collection of engravings by Guérout du Pas published in 1720, this picture of a bilander is only shown as evidence of an early two-masted rig with gaff fore-sail and main, but without booms.



This very modest vessel (the name is misspelt) flying the English flag is very far from demonstrating the elegance normally associated with the schooner! The jibboom is run almost entirely in, but shows that a third jib can be rigged. The topsail has only a single reef-band; note the way the sail is pressed against the mast-cap, which is all the more prominent because the topmast is hoisted abaft the lower mast. Note that the foresail is bent to a boom. The mainsail is out to port, allowing an ensign to be hoisted. The spar extending the mainmast appears to be intended for rigging a gaff topsail, but not a square topsail. The hull appears very ungainly, and the counter has a pronounced overhang.

Goulette Virant de Bord

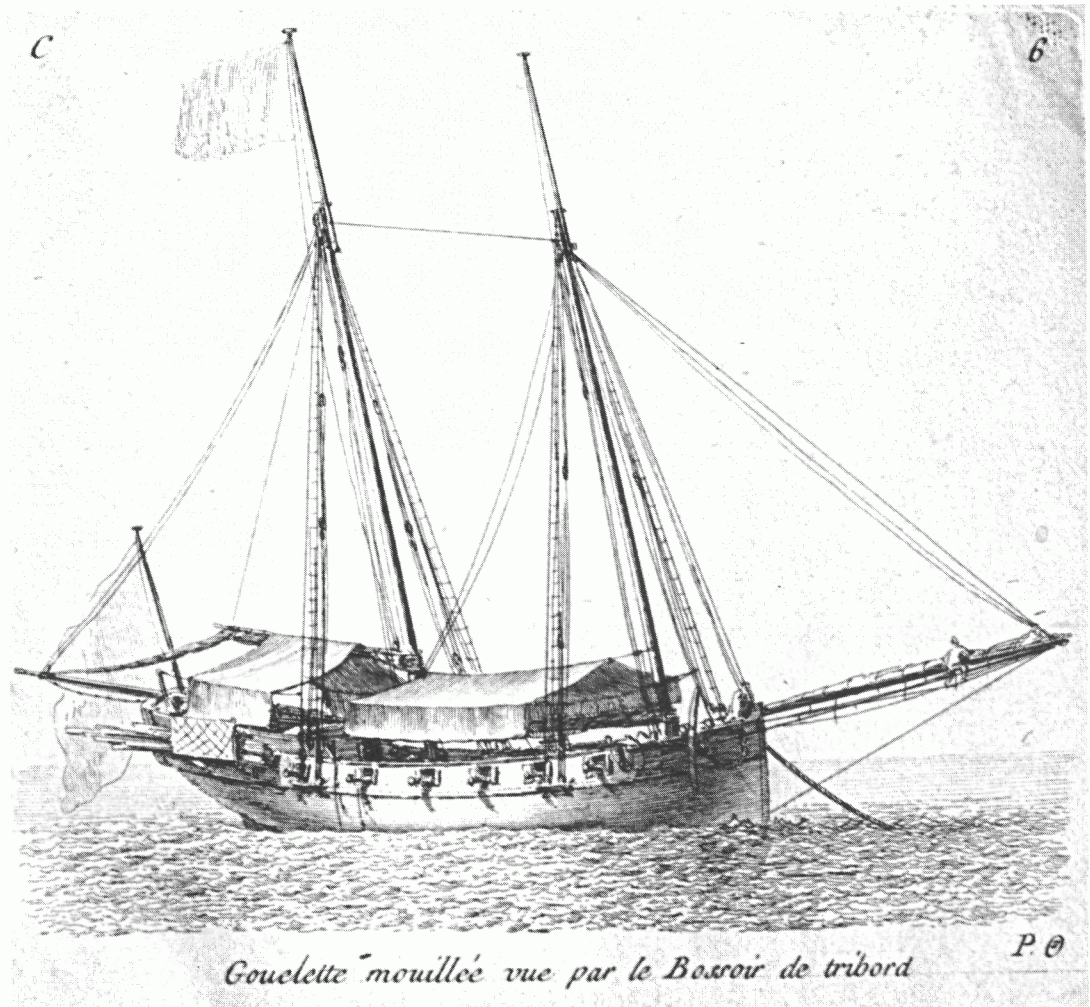


It would appear that the schooner is still something of a novelty, to judge by the spelling employed in the caption to this engraving by P. Ozanne. The rig is however typical of 18th century practice, with a single topsail as the only square sail. The same collection of engravings contains examples of other rigs on an identical hull: brigantine, cutter (see *Le Cygne*).

I have reproduced this drawing by P. Ozanne mainly as evidence of the widespread use of the schooner rig in the Colonies. We are in Martinique, and in the background can be seen the Cul de Sac Royal, the anchorage of Port Royal on the west coast.

There is another engraving by Ozanne showing the same view but from closer inshore and from a different angle, and we are informed by the caption that it was done from sketches made in 1780.





Goulette mouillée vue par le Bascoir de tribord

Compare this illustration with the one on the preceding page: the schooner is much smaller, and is unarmed. No more than a scout, its role is not to engage with an enemy. Note the flag at the end of the boom, indicating that it belongs to the white-and-blue squadron.

This little vessel has a square tuck. There are a number of amusing touches: the fishing lines trailing, some washing hung out to dry in the mainmast shrouds. The main-topmast has been struck, and the yard a-cockbill on the foremast appears to be a crossjack-yard which has been sent down.

The schooner has slacked off its main gaff in order to reduce speed. In the foreground can be seen a boat with three people aboard. This delightful sketch by Pierre Ozanne was never engraved. The scene is no doubt somewhere in the Greater Antilles in 1784 or 5, at which time Ozanne was staying in St Domingo.



Here is an excellent example of a naval schooner stationed in the Colonies. It is the purest form of fore-and-aft schooner, and the masts are only rigged with small iron caps to enable pendant staffs to be hoisted for signalling purposes. The extreme lightness of the spars is clearly in evidence, typical of the "Bermudoes boat" formula in its late 18th century version, i.e. schooner-rigged rather than as a cutter as earlier.

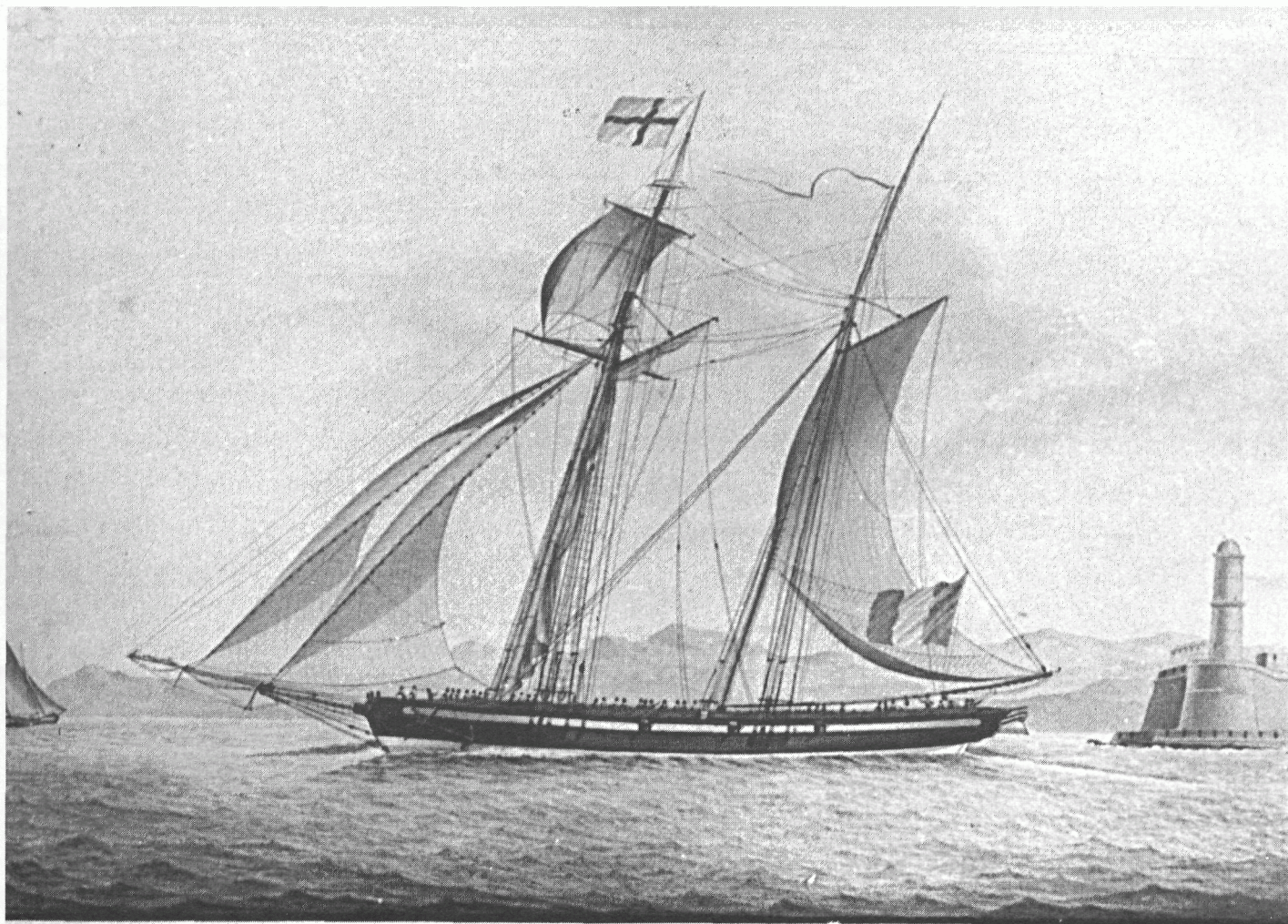
The great length of the bowsprit makes a jibboom unnecessary; the bowsprit passes to port of the stem, and is presumably stepped somewhere aft of the foremast since the normal rule is that one third of its total length remains inboard. The bulwarks are pierced for six guns, with port-lids which are divided vertically, a somewhat unusual arrangement. An awning has been spread between the two masts, and the manner in which it is rigged can be clearly made out. Beneath the awning can be seen the foresail furled round its gaff; having said that, it is not impossible that there is a boom as well, for the two lines hanging down between the masts look to me like lifts. Note the earlier arrangement of the mainstay, which runs forward to the head of the foremast just above the eye of the forestay.

This is one of the weaknesses of the schooner rig, since the mainmast is inadequately stayed against the effects of pitching. The presence of the fore-and-aft foresail makes it impossible for the mainstay to run directly down to the foot of the foremast. It is not until the beginning of the 19th century that the idea occurred to rig

a double mainstay, with the weather leg being set up taut and the other one eased, so as not to obstruct the movement of the foresail and its gaff.

The mainsail is furled on its gaff, the remainder of the sail being rolled up and extended out to the end of the boom. A second awning shades the break of the little raised poop over the cabin. There are sweeps placed aft on iron cranes, partly hidden behind a cloth, although there are no oar-ports to be seen between the gunports. The large ensign is being flown, and the schooner is anchored to her starboard bower.

This watercolour by François Roux the Elder is dated 1811, and illustrates what is probably a schooner-rigged privateer, despite the flag of Provence flown at the foremast-head, above the furled topgallant. Note the later arrangement of the mainstay. The clew of the mainsail is raised in order to spill the wind — see how the colours are blowing. The gaff-topsail or its equivalent is furled to a sort of sprit; it would have been interesting to have had another painting showing this sail spread. The diminutive size of the figures on board distorts the scale of the vessel.



0A.115 | *Gallie de Jeanbart, Cap. Honnore Haucheur, sortant de Marseille 1811*

This engraving and those which follow on the next few pages are taken from two albums published in 1814 and 1817 by the engraver Jean-Jérôme Baugean, who was born in Marseille in 1764 and who was granted the distinction, after the Restoration, of "engraver by appointment to the King". The album originally published in 1814 was reprinted in 1971 by Les Editions des Quatre Seigneurs, and an incomplete version of the second album was reprinted in 1987 by Les Editions de l'Estran.

I have selected all the engravings from both of Baugean's albums illustrating schooners, in order to increase the amount of iconographic material, and discuss a number of variants in the rig. This first engraving shows a small oddity in the form of a staysail which takes the place of the gaff-topsail on the foremast. The main gaff-topsail is bent to a small yard. The tack of the mainsail has been raised a little, probably to allow the foresail to catch the wind better, unless it is to allow the officer of the watch to get a better view of how the sails are drawing.

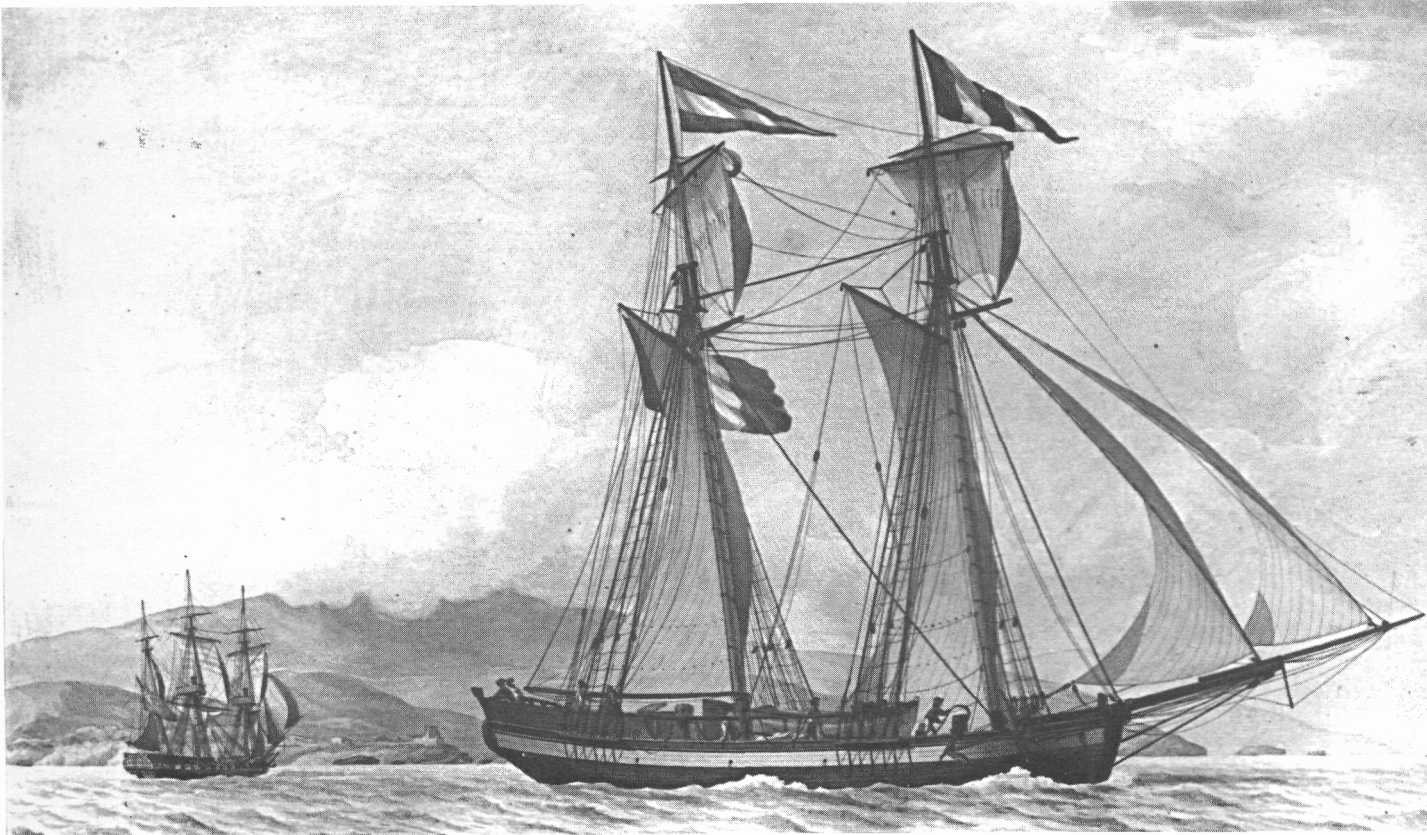
This schooner is flying a long pendant at the mainmast head, and the white national ensign at the peak of the mainsail gaff.

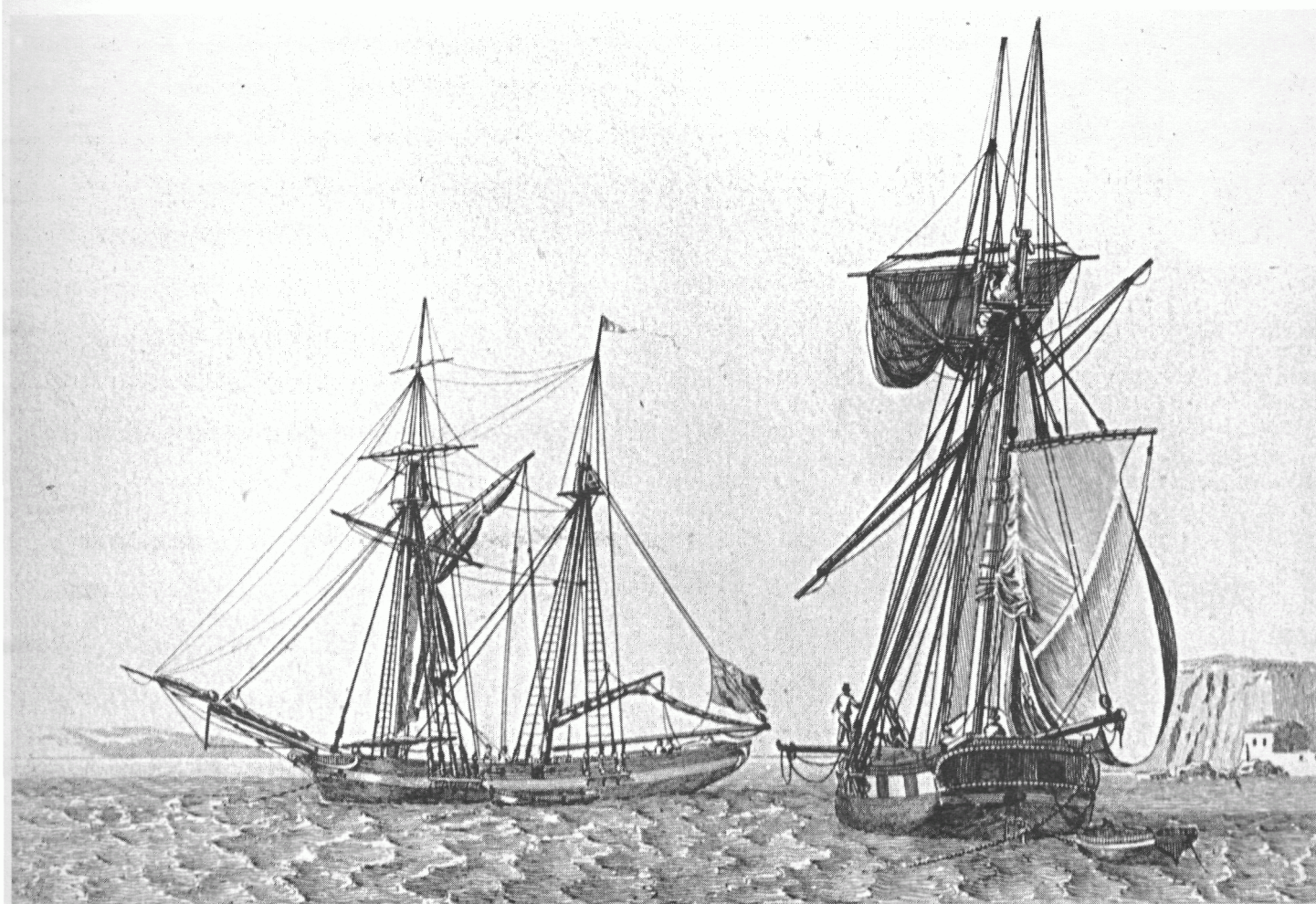
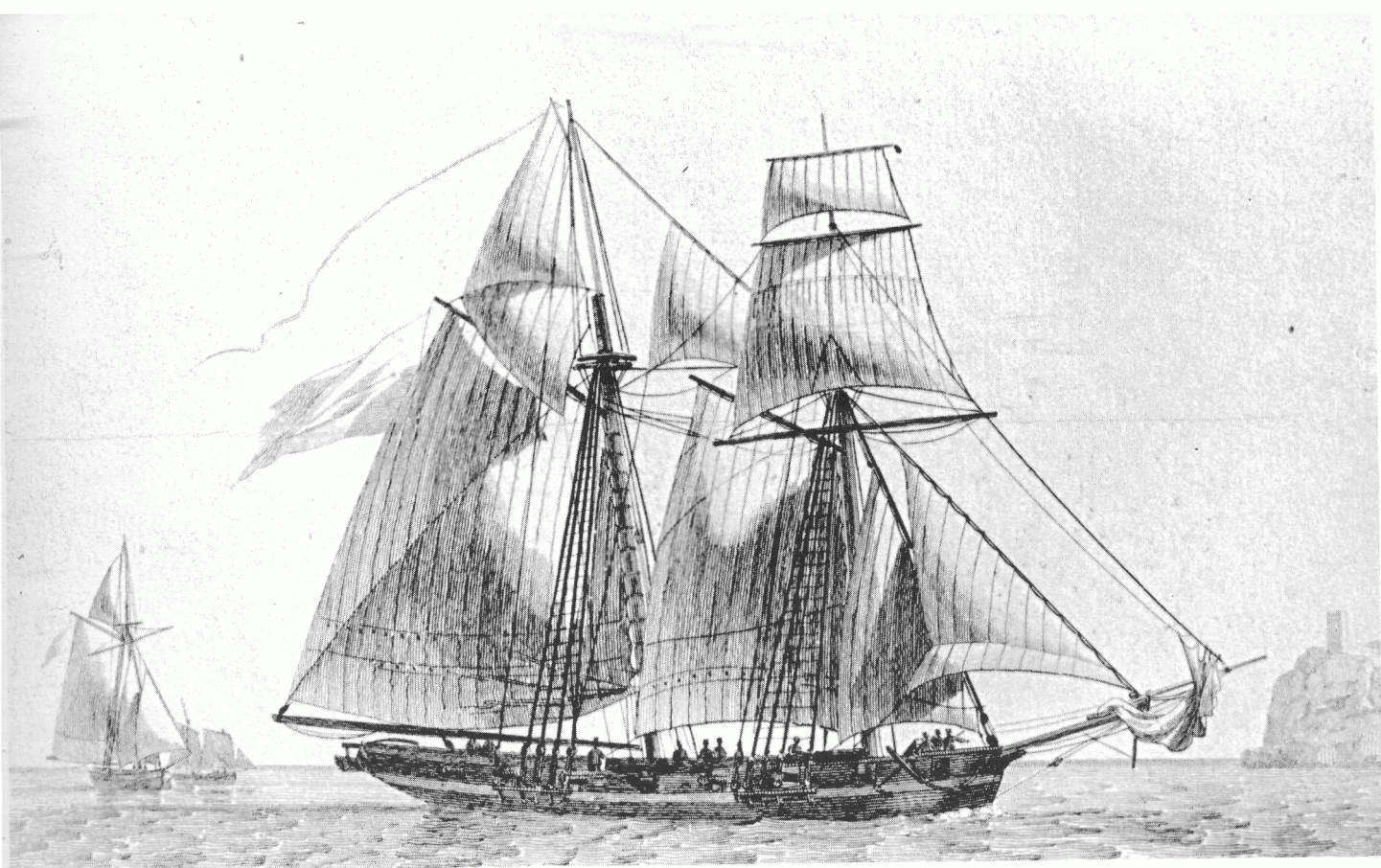
This is another watercolour by the elder Roux; the subject is a humble trading schooner, flying two flags at the mastheads which I have been unable as yet to identify.

The subject provides an excellent example of the use of topsails and topgallants on both masts. The rigging has been scrupulously drawn: note the presence of a double mainstay, the vang of the foresail gaff, and the dolphin-striker. There is what looks like the barrel of a capstan immediately abaft the small and probably temporary companion next to the mainmast.

On pages 16-17 I illustrated the draughts of what I called a "Balahou" schooner. Here is a picture of two English Balahou's, or in fact one only, seen from two different angles. The left-hand drawing shows her with all sails furled, and shows clearly the somewhat unorthodox manner of furling the mainsail on schooners. The foresail is furled in more conventional manner to its gaff and to the foremast. Note the cross-jack furled to a lower crossjack yard (see p. 10), which can be clearly seen forward of the foremast and a little way above the bulwarks.

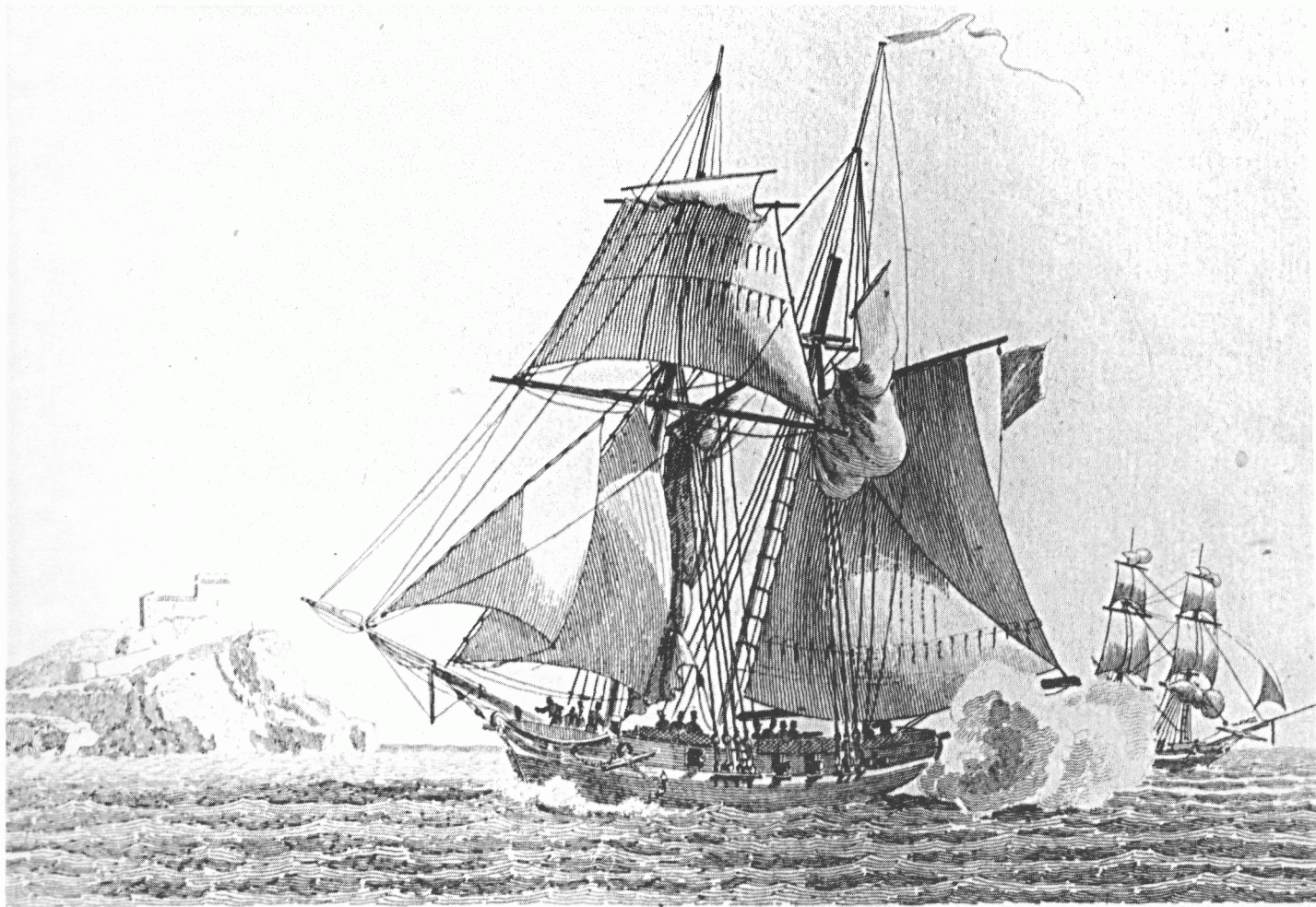
The right-hand drawing shows the same vessel with the gaff of the mainsail lowered and with the gaff-topsails furled on the crosstrees and heads of the lower masts.





Baugéan del. et sculp.

Goelettes Balaou, au mouillage.



Baugéan del. et sculp.

Goelette vent large.

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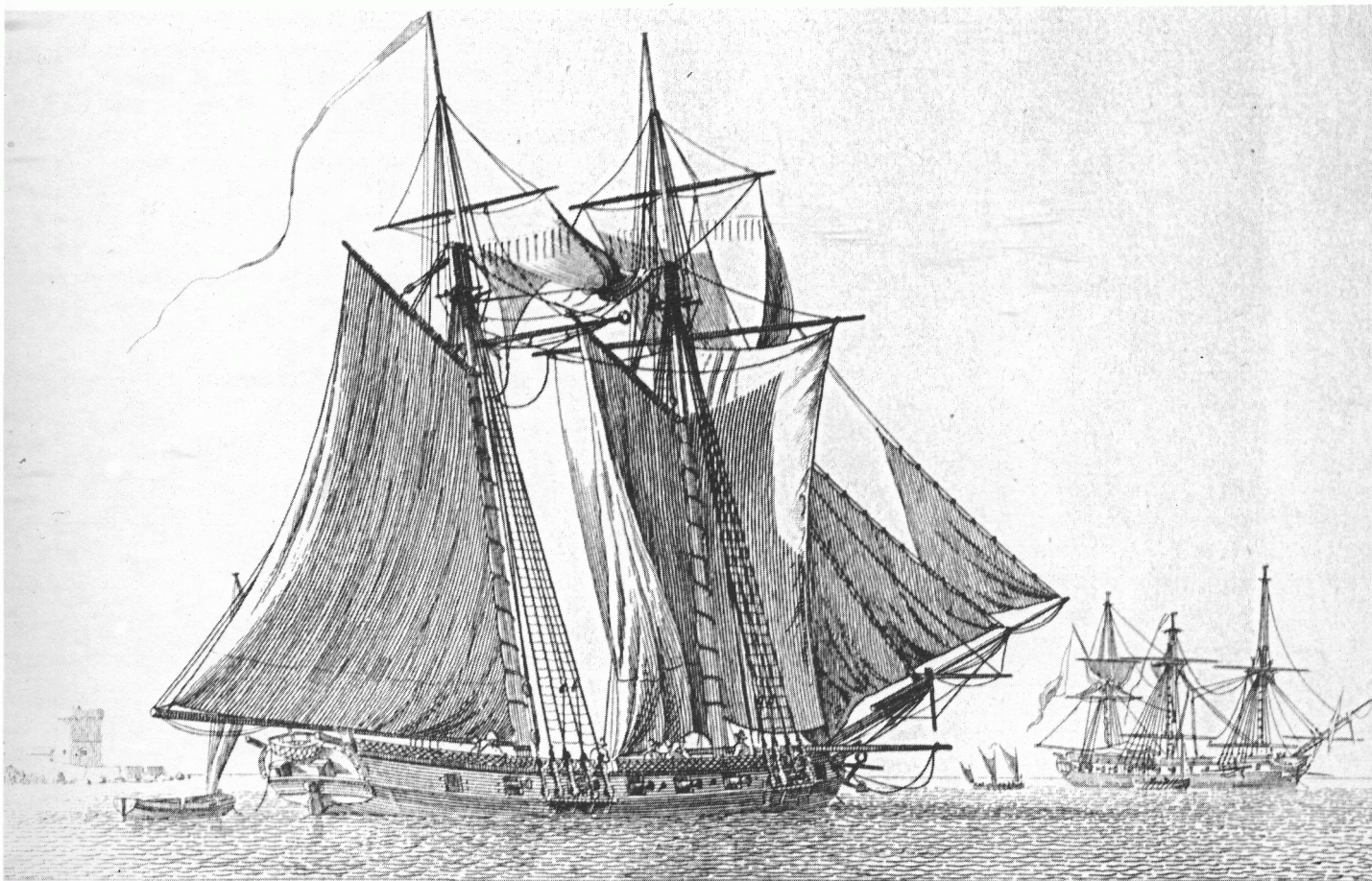


Classic representation of a naval schooner, rigged very much like la Jacinthe, although smaller. With the wind on the quarter, the fore-and-aft foresail has been brailed up, since it was being partially blanketed by the mainsail and was likely in its turn to blanket the inner jib. The topgallant has been lowered on the cap and the gaff-topsail which is bent to a yard has been lowered, which suggests that the wind is too strong for these upper sails, which tend to make the schooner heel excessively and reduce her speed through the water.

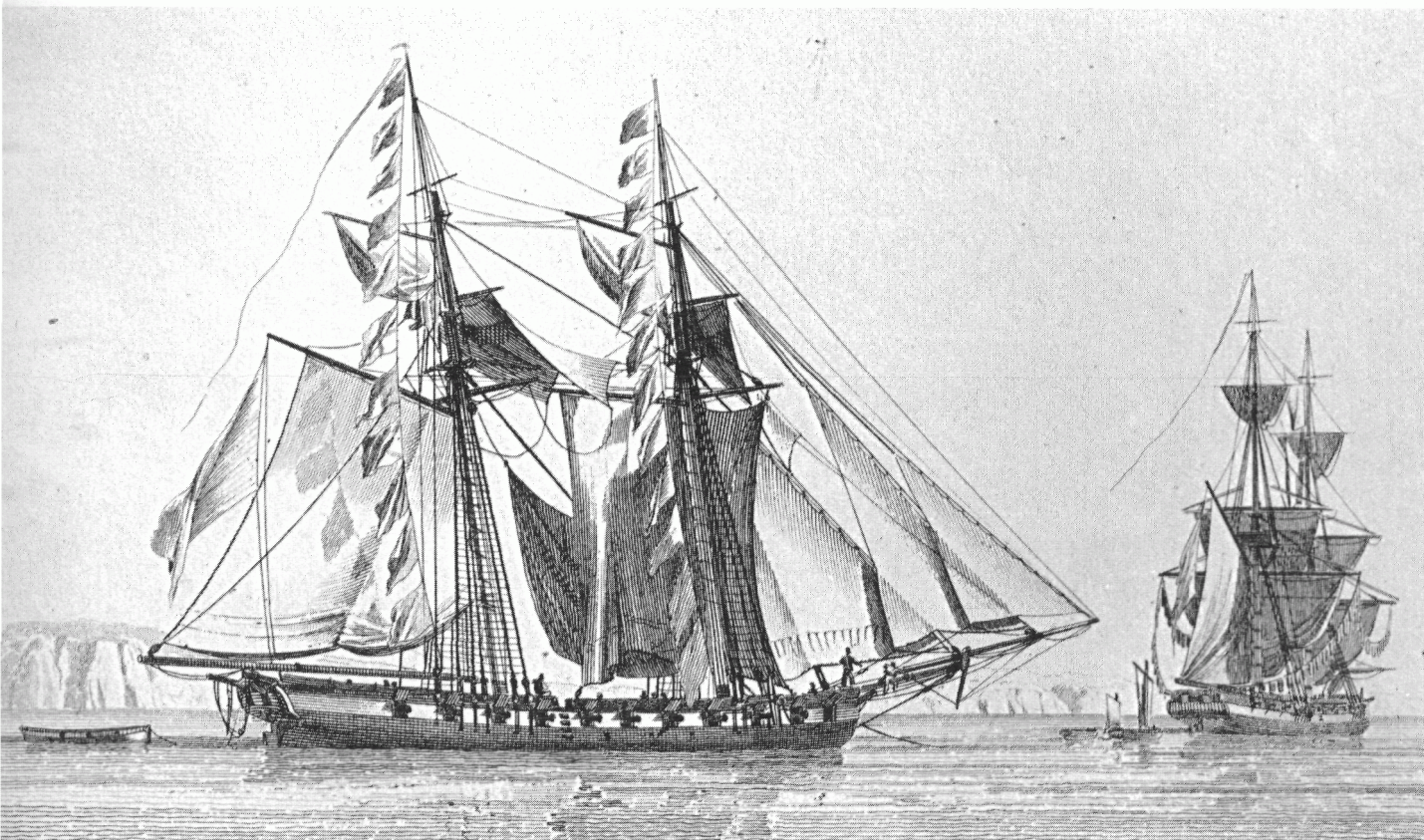
Large naval schooner of indeterminate nationality; the interest of this engraving is to show the size of the cross-jack. A swinging-boom can be seen, used to extend its tack like a bumpkin (see p. 22). This schooner carries topsails on both fore and main, but the pole of the topmasts seems to me to be too short to allow topgallants to be rigged even temporarily.

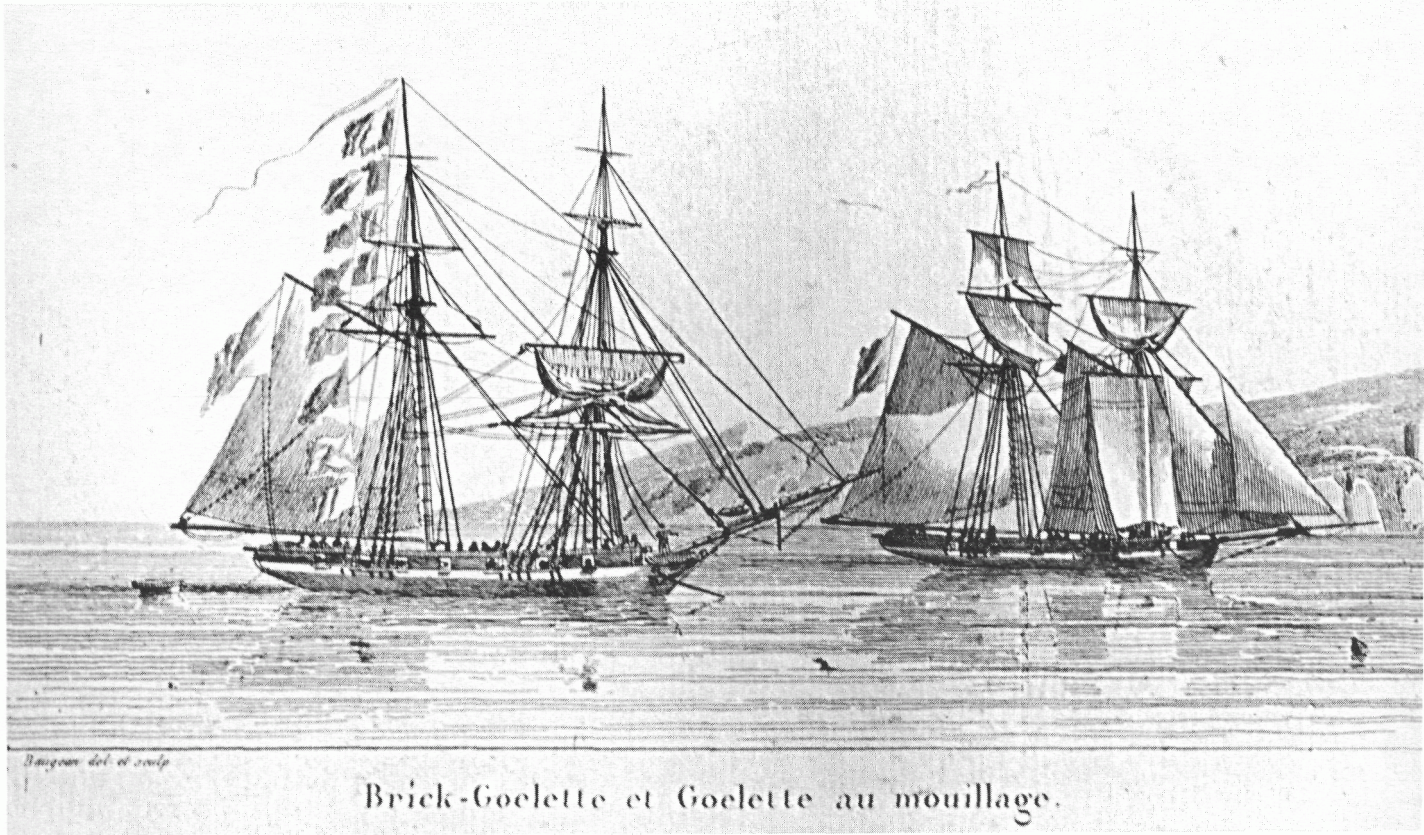
This schooner, which is as powerful as a small sloop-of-war, has relatively high bulwarks topped by hammock-nettings. There are two stern-davits for a boat, and hanging between them is a netting which can be used to barricade the stern if required.

Armed with 20 guns, this schooner is a true sloop-of-war. The ensign does not make her nationality clear, but the caption tells us that she is American. Heavily rigged, she carries topsails and topgallants at fore and main; another detail worth noting is that the gaff-topsails have been replaced by quadrilateral sails with their own gaffs, so that they are almost identical to staysails of the period. The rig is beginning to approach that of a brig. Note the way the gunports are closed by lids which are hinged horizontally in the conventional manner.

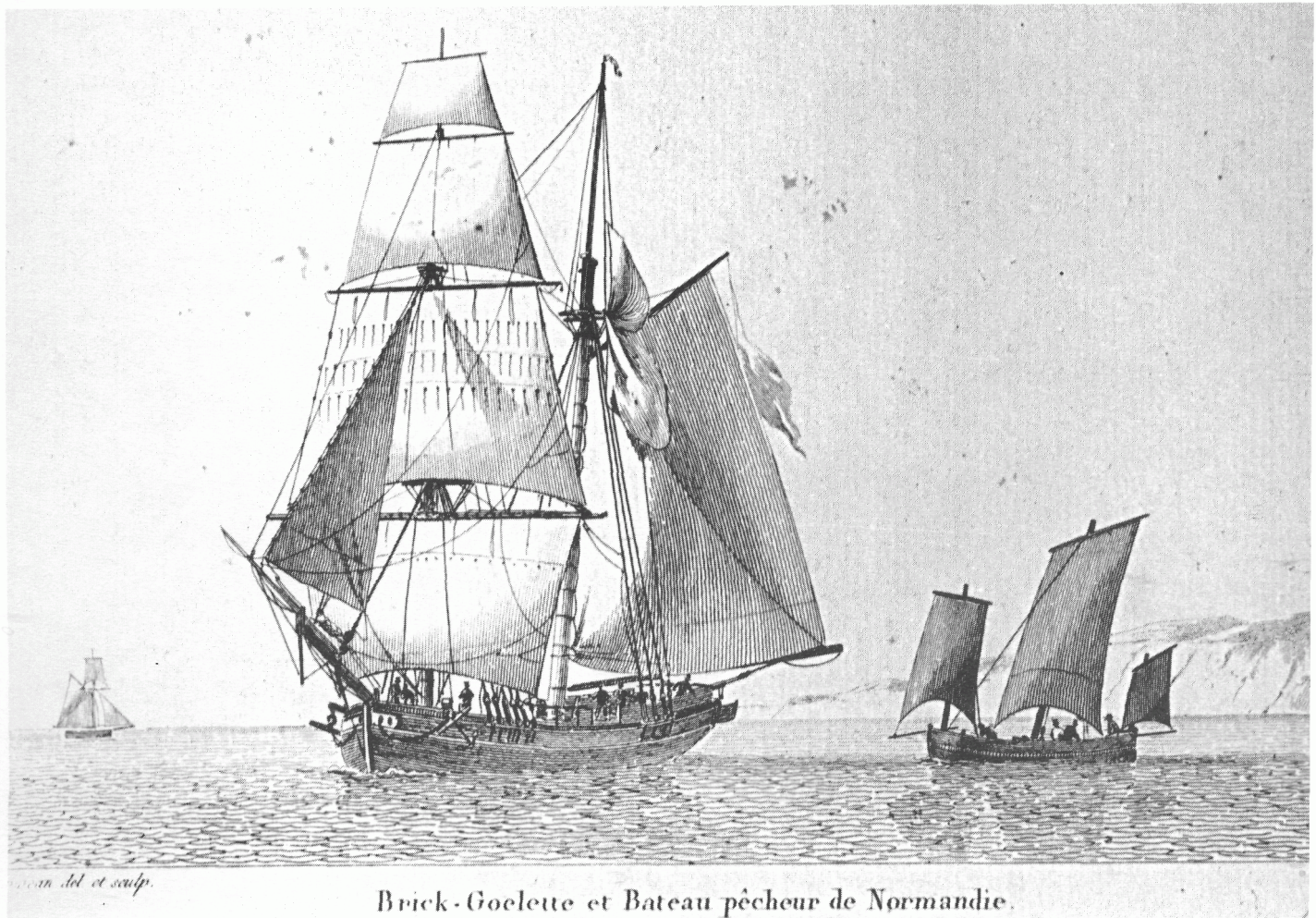


Goëlette au mouillage faisant secher ses voiles.





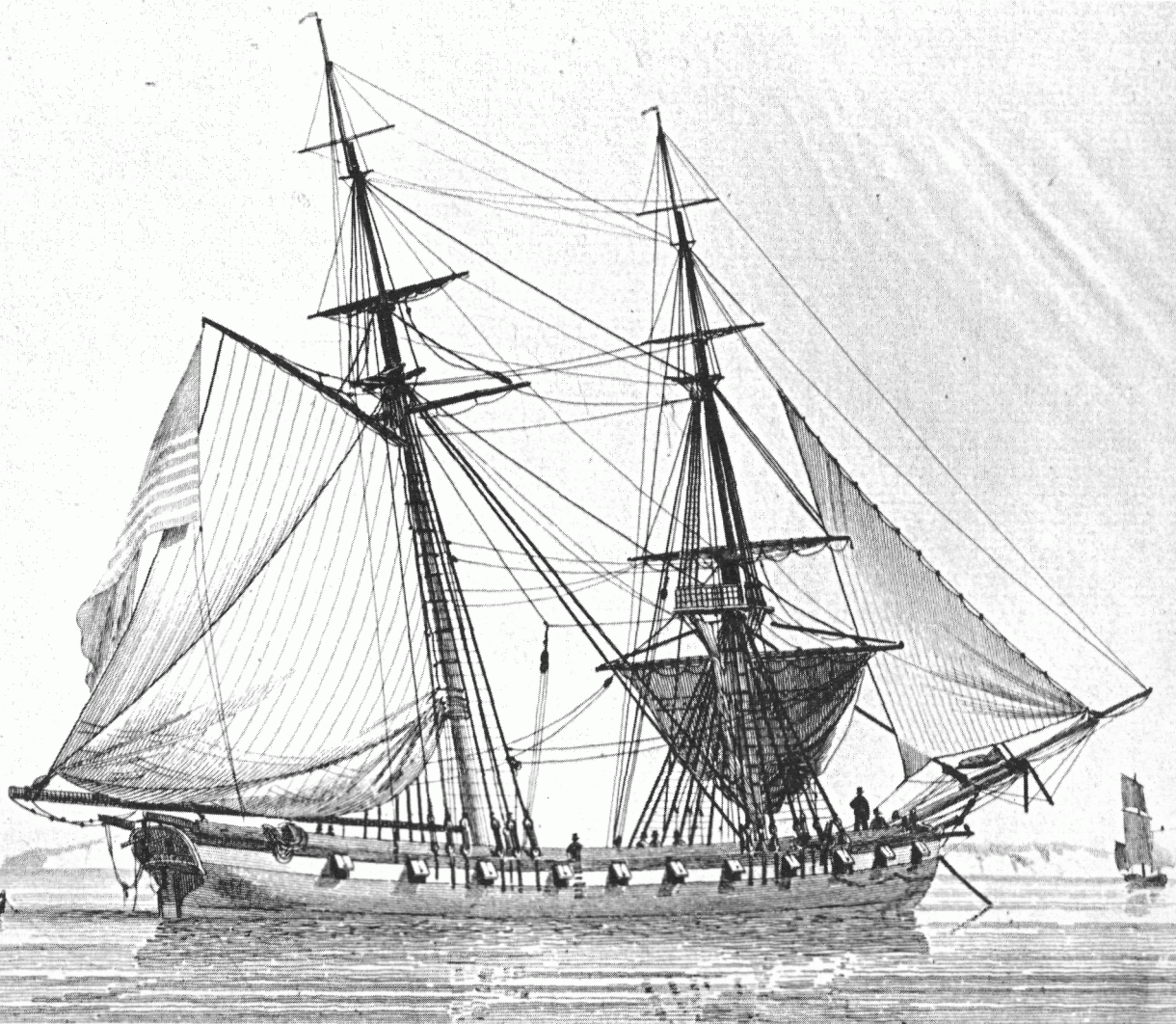
Brick-Goelette et Goelette au mouillage.



Brick-Goelette et Bateau pêcheur de Normandie.

The interest of this illustration is that it shows a brig-schooner and a schooner together. In the historical section at the beginning of the book I talked of the rig-variant called a brig-schooner or hermaphrodite brig, which is illustrated in all three engravings on these pages. It will be recalled that this type of vessel is square-rigged on the foremast and schooner-rigged on the main. Between the masts there may be either staysails, or a fore-and-aft sail bent to a gaff, although among Baugean's engravings there is not one single example of the latter arrangement. The rig is not therefore dissimilar to that of the early brigs of the 18th century, before they rigged the langard or square mainsail.

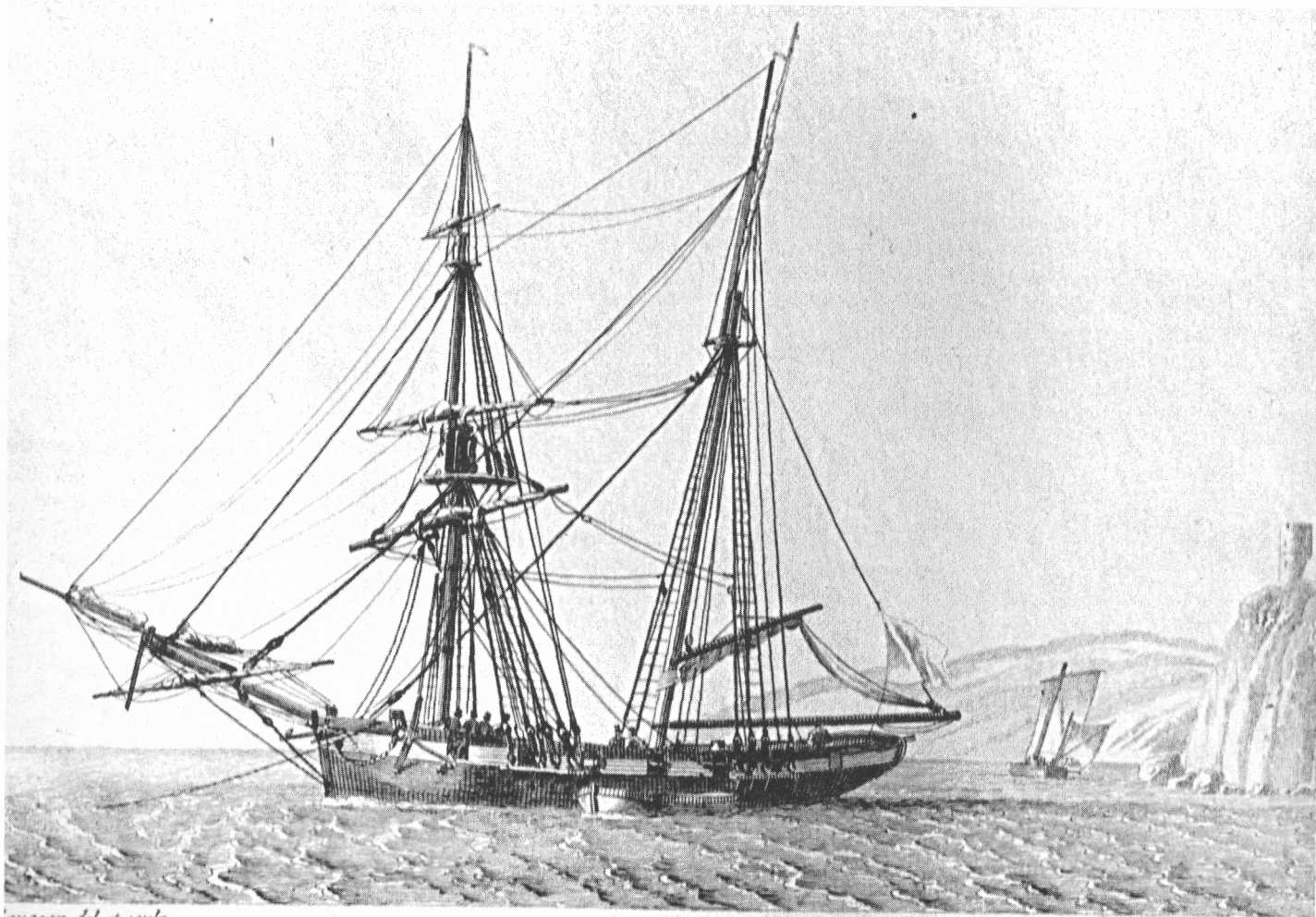
The hull of this brig-schooner should be compared with that of the American schooner on page 39, at anchor and drying its sails. It is clear that there is no fore-and-aft sail on the foremast of this vessel, although a staysail can be seen furled against the mast. On the other hand the foremast carries four tiers of square sails, including a royal. The mainmast is rigged somewhat more lightly, since there is no top like that on the foremast but simple crosstrees instead. Note the double dolphin-striker.



Baugean del. et sculp.

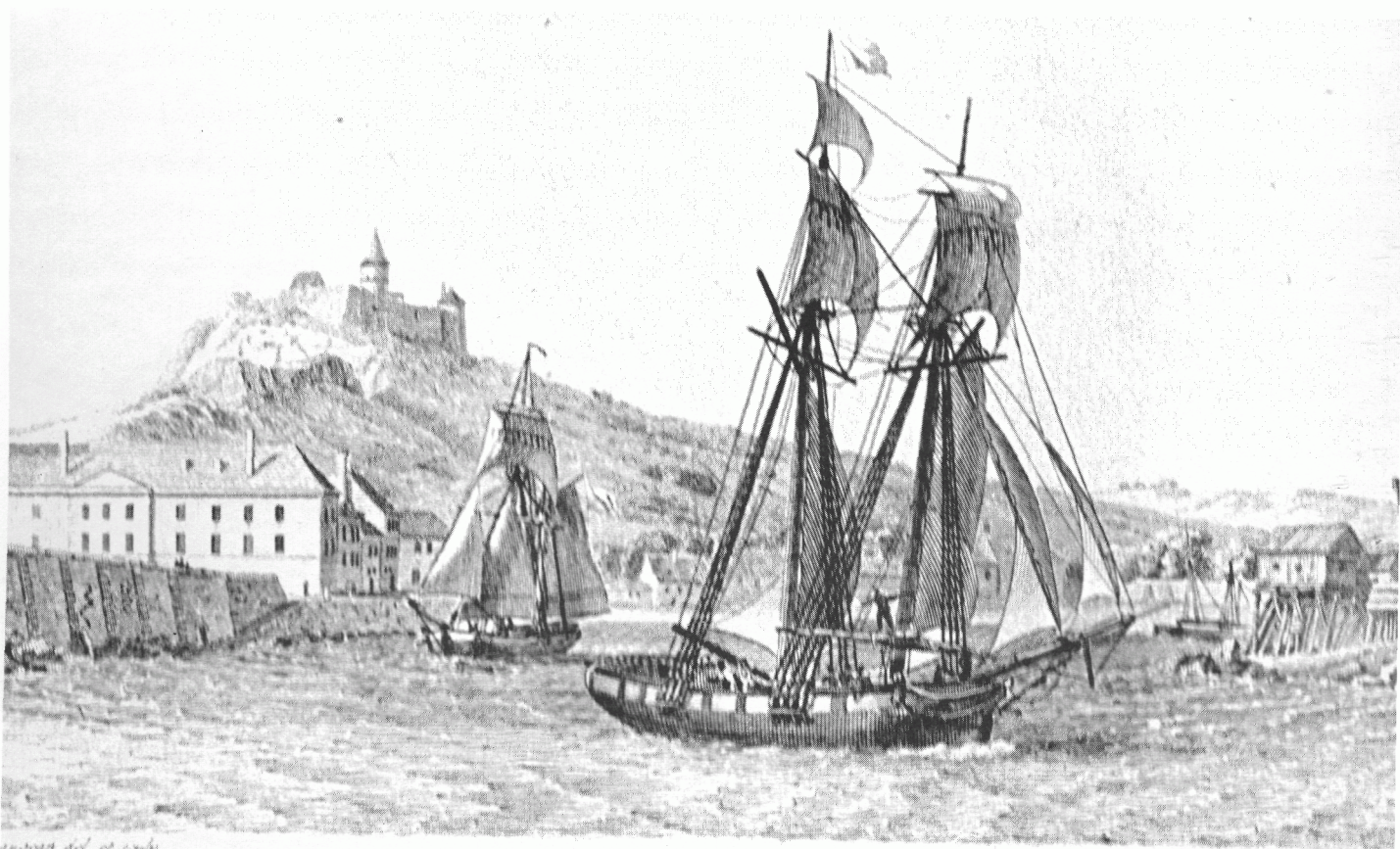
Goelette-Brick, au mouillage.

Small hermaphrodite brig in the merchant trade: four tiers of square sails on the foremast, with only a gaff mainsail and topsail on the main.



augéan del. et sculp.

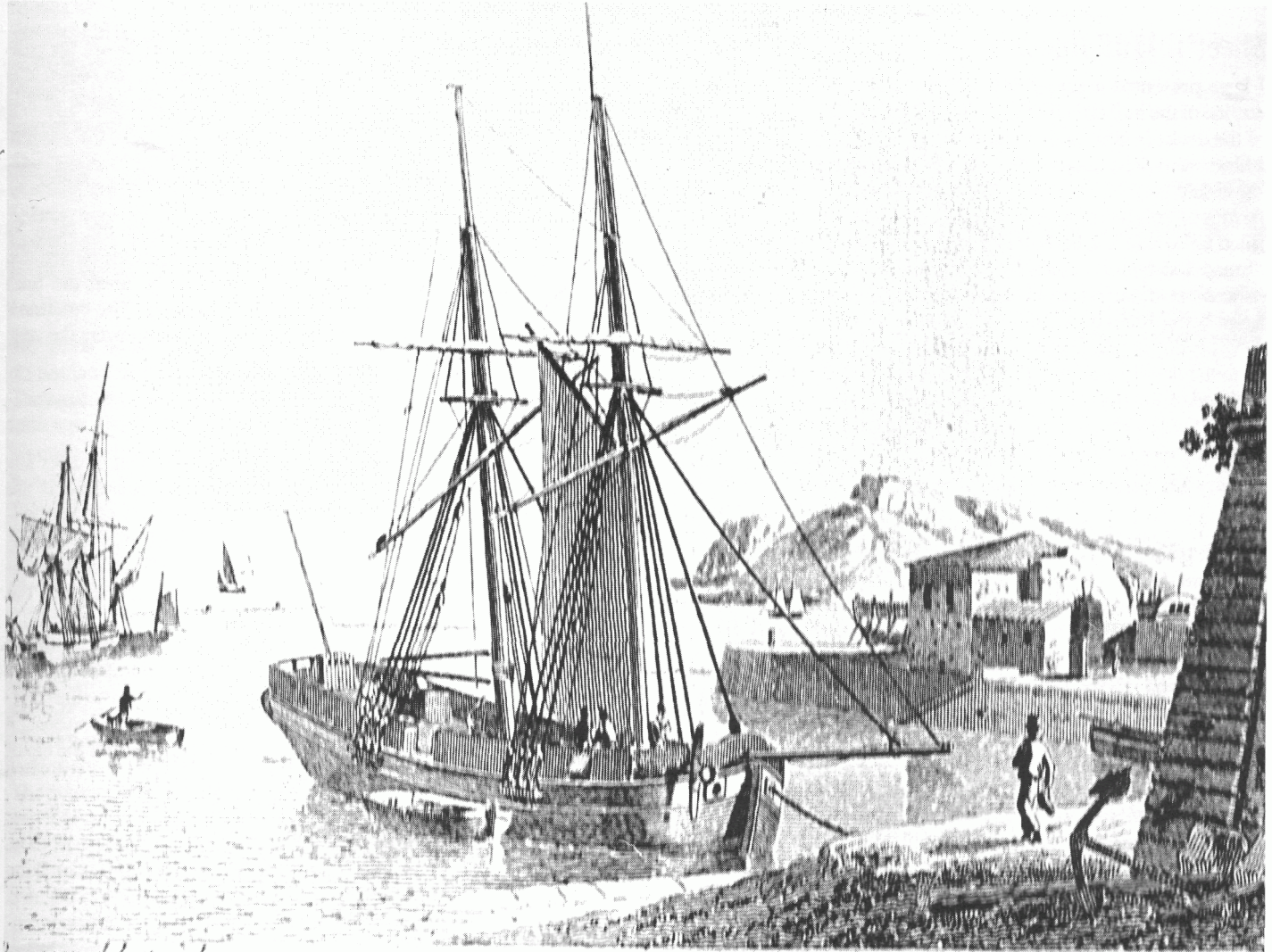
Golette-Brick, se touant.



augéan del. et sculp.

Golette venant d'appareiller d'un port de marée.

Another hermaphrodite. With all sail furled this vessel more closely resembles a brigantine than a schooner. Note the presence of a spritsail, what appear to be chain-cables, the lightly-rigged mainmast with gaff-topsail bent to at least one spar, although the way in which it is furled suggests the presence of two spars, one extending the topmast and the other a sort of boom.



ENTRÉE D'UN PORT,
Goëlette Suedoise, amarrée au Quai.

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On the Atlantic seaboard all the merchant ports are tidal so that vessels take the ground at low tide. The construction of wet basins was not undertaken until the second half of the 19th century. This merchant schooner assumes a warlike air with its painted ports, which on occasion were real ports fitted with "quakers" (false guns with wooden barrels); however, during the course of the 19th century these ports assumed the role of a decorative motif, in no way expected to deceive a possible enemy.

There is nothing especially remarkable about this particular schooner which we have not already noted on others, save that we see once again the cross-jack furled on a lower crossjack-yard in order to avoid straining the rigging by bending it to the upper yard.

↑
This Swedish schooner has hull lines which are typical of the Nordic countries, reminiscent of the cats of the Baltic, and only its rig justifies calling it a schooner. Note the weather-boards above the bulwarks, and the very different way in which the hawseholes are constructed when compared with French practice. Note also the presence of topsails at both fore and main.

LA JACINTHE: MONOGRAPH

Commentary on the Plans

Scale: 1/48 (1/4" = 1 ft)

Sheet 1. Hull lines.

I have presented a series of drawings which serve to define the outline of the hull structure upon which the planking of the hull and of the decks is laid, both of these being 2mm thick at this scale.

I have assumed that you will use a single dorsal bulkhead of the same thickness as the keel, 3.9mm, to which eleven transverse frames or bulkheads will be fastened, the spaces in between being filled up so that a solid hull is formed. At bow and stern a form of "bread-and-butter" method is recommended, with a number of "slices" at different waterlines, and the spaces in between once again being filled up solid.

Thus the hull is represented as a carefully defined solid, which must be meticulously executed and then "clad" with the planking of the hull and of the decks, laid in strakes 2mm thick.

But all this is described in detail in the section starting on page 61 devoted to the building of the model.

A. Profile. This drawing shows the longitudinal profile of the hull from stem to sternpost. The frame bulkheads are numbered **1** to **11**. Their thickness is 8.3 mm, except in the case of bulkheads **1** and **11**, which are half that thickness (4.15 mm).

The two upper strakes of hull planking forming the wale are marked, and above them can be seen a line representing the thickness of the deck planking, which is 1.3mm at 1/4" scale. Modellists will however find it easier to make these 2mm thick.

The uprights forming the rail-stanchions supporting the breast rail provide only the flimsiest protection, since they only have light planking nailed to them in the section from the stem to the foremast. I have indicated the deck-beams and the axes of the masts.

At the stern there are a series of vertical and horizontal sections marked **a.b.c.d.e.**, which are designed to help you to define correctly the volume of the hull in this part.

You will note the presence of a long dotted line, which is intended to represent the contour of the volume of the hull superimposed on the profile, **before** the planking has been applied.

Finally, there are a series of horizontal sections numbered **0, 5, 10** and **13**: the zero corresponds to the line at which the planking starts on the keel. The load waterline is indicated, and this is not parallel to the horizontal sections because of the very large difference in draught fore and aft.

B. Horizontal sections. The frame bulkheads are also shown on this drawing. All the horizontal sections from **1** to **14** can be followed, and I have also indicated the longitudinal sections **a.b.c.d.e.**. The counter, taffarel and helm port are shown viewed from below.

Note at the bottom of the counter a sort of rebate into which the planking of the hull fits.

C. Frame bulkheads. Numbered from **2** to **10** are the half-profiles of the frame bulkheads. Bulkheads **5.4.3.2.** are shown as if one were looking towards the stem, so that the outside profile corresponds to their after face, indicating the the strakes of the hull planking including the wale (which is 3.2 mm thick).

Bulkheads **6.7.8.9.10.** are shown as if one were looking towards the stern.

The sheer of the deck, particularly noticeable at the stern, is represented by two lines corresponding to the top of the bulkheads. On the outline of each frame bulkhead can be seen the lines corresponding to the seams of the deck planking. The outermost plank must be faired off in the small area where it covers the wale and overhangs the side.

D. The bow. On the right-hand drawing, bulkhead number **1** is shown as if one were looking aft. The horizontal pieces **a.b.c.d.** are shown in plan (lower drawing) and in longitudinal section (left-hand drawing), and they are fitted into the angle formed by the half-bulkhead **1** and the dorsal bulkhead. The dotted line on the left-hand (sectional) drawing indicates the external contour of the planking of the hull at the bow.

The plan view shows the shape at the level of the bulwarks, overhead bulkhead number **1**. I have added an additional section **y**. Note that both the wale and the hull planking as shown on the right-hand drawing appear to be too thick: this is because they present an **oblique angle** to the line of sight. A dotted line indicates the top of the deck planking.

E. The stern. The method of assembly is similar to that of the bow. The pieces **a.b.c.d.** are assembled to bulkhead **11**, which is shown as if one were looking towards the bow. Piece **d** is cut to an angle at its outboard ends, as can be seen in the view from below (middle drawing).

Completing the stern is the hardest part of the whole hull, and it is best to look at these drawings in conjunction with the text on page 63.

I have shown the stern viewed both from below and from above (bottom drawing), and they need to be understood perfectly before beginning to shape the timbers, so that careful examination is required.

The drawing on the left shows the stern full-size seen from the side.

F. Deck profile. The camber of the deck is drawn out at the midship frame, and the curve remains constant over the whole length of the deck, the narrowing of the width fore and aft being obtained by cutting back equally at either end of the "beams", so that the actual value of the camber reduces fore and aft.

Sheet 2. Planking of the hull.

A. Planked elevation. This drawing is what might be described as the "clad" form of the hull shown in the previous Sheet. The strakes of the hull planking show the volume of the hull. The nailing of the planks has been shown in part only, but it will be seen that each strake is fastened to each frame by means of four nails, and I have also shown the nails corresponding to the cant frames at bow and stern. It should however be noted that with the method of construction adopted for this model, these are imaginary frames which do not correspond to the positions of the bulkheads, and I would be inclined to discourage beginners from attempting to show these fastenings: there are a very large number of nails, the diameter of their heads at $\frac{1}{4}$ " scale is no more than 0.14 mm, and knowing where to position them, especially in the case of the cant frames, may well be beyond the knowledge of a beginner.

The channels are composed of bolsters of timber fayed to the hull, to which the chain-plates are shaped and nailed. There are further bolsters beneath the hawseholes. I have illustrated the rudder and its pintles and gudgeons, but I would refer you to the text accompanying Sheet 4 for more detail.

B. View of the bow. Note that three strakes of the hull planking do not land in the rebate of the stem: these are called "stealers". They can be seen more clearly on drawing A. A thicker line indicates the lower edge of the wale. The openings of the hawseholes and the hole for the bowsprit can be clearly seen. There is a bolster under each hawsehole. Also shown are the bolsters which on smaller vessels take the place of the channels, and the outboard arm of the catheads. The downward curve of the load waterline is explained by the fact that the model is presumed to be resting on its keel.

C. View of the stern. Below the two strakes of the wale can be seen 19 strakes of hull planking, although the bottom one only runs forward from the sternpost to mid-way between bulkheads 9 and 8. The two strakes of the wale and the four strakes of planking below land in the rabbet of the transom.

The counter is planked up with four strakes, likewise the taffarel, and it is to the planking of the latter that the counter rail is fayed, with its carved motif of oak-leaves. Carved-work in the form of an arch describes the taffarel, with a motif of laurel-leaves; where it meets the counter rail it finishes in a scroll and seaweed pattern which extends round the quarter-pieces and forward, as shown in drawing A.

The ribbon-shaped carving bearing the name of the schooner is made separately and fayed like the other carved-work to the planking of the taffarel. A saddle for the boom is fastened to the upper surface of the taffarel fife rail.

I have omitted on the port side the timber fayed to the stanchions of the bresttrail.

D. View of the deck. On the port side I have merely shown the run of the planking, together with the outlines of the hatchways and of the heels of the rail-stanchions. Note the way the deck-planking at the bow is "nibbed" into the waterway (this is to avoid them being weakened, which would be the case if they faired away to a point). The waterway merges into a sort of deck-hook composed of several timbers. The position of the hawsehole and of its bolster can be made out. At the stern can be seen the overhead view of the counter, which has a marked overhang, and also the shape of the taffarel.

The mast-partners and the holes through which they pass, the helm-port, the hole for the port pump and other details are shown in outline on this side of the deck.

On the starboard side I have filled in the detail of the fittings. The deck is viewed from above the bulwarks. Moving from bow to stern the following items have been illustrated:

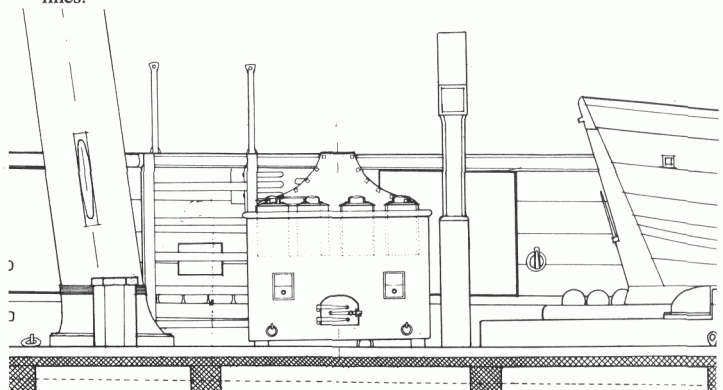
- a. Opening in the bulwarks for the bowsprit. The bulwarks are planked up solid as far aft as a point slightly forward of the foremast.
- b. Starboard hawsehole.
- c. Pinrail at the bow, with 10 belaying pins.
- d. Cathead.
- e. Step receiving the tenon of the heel of the bowsprit.
- f. Riding bitts, composed of standards which run forward as far as the step of the bowsprit, pins and cross-piece.
- g. Foremast, with the mast-hole and wedges.
- h. Forward hatchway leading to the crew's quarters.
- i. Forward pinrail, with 12 belaying pins.
- j. Bolsters forming the channels.
- k. Chocks for the ship's boat. The after chock rests on the intermediate head-ledge of the main-hatchway which is divided athwartships into two parts.
- l. Main-hatchway, divided into two parts. Note the semi-circular hole cut for the cables.
- m. 12-pdr carronade.
- n. Dotted line representing the space occupied by the boat. A small galley stove may be fitted between the stern of the boat and the mainmast (it is illustrated in *Le Cygne*); for the benefit of more ambitious modelmakers, the two small sets of drawings have been reproduced on this page and on page 47).
- o. Mainmast, with the pumps on either side.
- i. After pinrail, with 6 belaying pins.
- p. Raised roof over the wardroom.
- q. Roof-lights over the wardroom.
- r. Sliding hatch giving access to the ladderway leading down to the wardroom.
- s. Helm-port, with the rudder head and tiller.
- t. Iron bracket for the mainsheet.

E. Inboard profile (deck). I have restricted this profile to the deck arrangement, since the hull is solid; however, further details can be seen on the draughts on p. 27.

All the items shown on drawing D can be seen, so I will not itemise them again.

Note the thick line indicating the sheer of the deck along the midship line*, while the dotted line indicates the camber or round up athwartships. The distance between these two lines shows the way the round up alters along the length of the deck as the beams get shorter: it is at its maximum value at the midship bend, and reduces progressively fore and aft to zero at the stem and very little at the stern. The lower masts have a large cleat on either side.

* As is conventional in such drawings, certain fittings such as the masts, the roof-lights over the wardroom, etc. are not shown in section. Only the stem and the head, the counter and the taffarel are so sectioned, as is indicated by the cross-hatched lines.



Position of the galley stove abaft the boat on *Le Cygne*.

Sheet 3. Transverse sections and other details.

A. Bulwarks and rails. There was insufficient room on the previous Sheet to include this plan. Its main purpose is to show the positions for the heels of the rail-stanchions on the planking of the deck.

The line marked **w** at the bow is the point where the planking of the deck meets that of the bulwarks. Two other lines show the position and the breadth of the rail capping the bulwarks. The dotted line marks the area where the deck-planking extends outboard. Four lines marked **a.b.c.d.** define the profile of the bulwarks at the bow (the sectional views are shown in Plan F).

Marked from **e** and **m** are the heels of the stanchions, the dotted line indicating for each one the position of the outboard face of the stanchion at its head; this may be easier to understand by looking at Plan F. The top line (marked **x**) on the drawing is the extreme outboard line of the deck. The middle line (**y**) is the outer edge of the rail; and the inner line (**z**) corresponds to the inner edge of the outermost strake of deck-planking. These can be seen clearly on Plan E.

At the stern the deck-planking finishes along a curved line marked **o**. The upper part of the counter meets the planking along the curved line **p**, while the final curved line **q**, shown dotted, indicates the outer edge of the rabbet into which the two strakes of the wale and four strakes of the hull planking land.

B. Transverse section at bulkhead 3. This section is made at frame-bulkhead 3 looking forward. The hull and deck are shown planked. This drawing shows the section of the bolsters serving as channels, and also of the plank nailed to the rail-stanchions, the breastrail itself, and the pinrail. Amidships can be seen the hatchway leading to the crew's quarters, and the riding bits beyond the foremast.

C. Transverse section at bulkhead 5. This section is made more or less at the position of the midship bend and shows the mounting of the carronade. Between the two stanchions forming the sides of the gunport is a solid piece of timber designed to reinforce the stanchions. It is in this timber that the two ringbolts either side of the gun are fastened, to take the breeching. It also takes two hookbolts for tackles. Centrally placed between these is the fighting bolt of the sliding carriage of the piece. The breastrail is broken for the breadth of the gunport.

Visible above the coaming of the hatchway can be seen the after boat-chock: the left-hand side shows its after face, the right-hand side its forward face.

D. Transverse section at bulkhead 7. Similar to the preceding drawing. It shows the mainmast with its mast-cleats, the upper part of the mast-wedges and the pumps. We are looking aft.

E. Transverse section at bulkhead 9. The main interest of this drawing is that it shows the stern seen from withinboard. Note the planking of the counter and the taffarel, the way the plank fayed to the rail-stanchions finishes at the stern, and the junction of the breastrail with the taffarel fife rail. I have simplified somewhat the section of the raised roof and roof-lights over the wardroom.

You will also see the points **x.y.z.** referred to above in the notes accompanying Plan A.

F. Rail-stanchions. The stanchions bear the same numbers as in Plan A, with the stanchions of the after part of the vessel to the left, those of the fore part on the right. The heel of the stanchions as shown in these drawings corresponds to the line of deck.

G. Riding bits and step of the bowsprit. It can be seen that the standards of the bits are scored down over the deck beams, but beginners will find it simpler to fasten them directly to the deck-planking. Note the octagonal section of the heel of the bowsprit, the iron bitt-pin, and the eyebolts fitted with rings for the cable stoppers.

H. Details of the ironwork. The ironwork of the shrouds and backstays is drawn at 1/24 scale. The chain plates are 54mm wide and 14mm thick; \varnothing of the deadeye bindings is 20mm. The rings have an internal \varnothing of 42mm, \varnothing of the iron is 14mm. The plate on the left is only 42mm wide, and 9mm thick. All these dimensions are the full-size ones, so they must be divided by 48 for the model.

Sheet 4. Masts & spars, fittings, rigging.

A. Mainmast. The line of the deck is shown at **x**. The stop of the hounds is relatively pronounced in order to support the trestletrees. Note the length of the masthead above the hounds.

B. Foremast, deck line shown at **x**, mast-wedges drawn in, but account needs to be taken of the round up of the deck.

C. Bowsprit. The heel is octagonal in section. The iron cap for the jibboom is shown at **c**.

D. Jibboom. There is a small sheave just below the truck for the outhaul of the traveller.

E. Main-topmast. The masthead is much shorter than is the case for the fore-topmast since only the gaff-topsail is bent above the mainsail.

F. Fore-topmast. The heeling is square in section. Note the marks indicating the positions of the trestletrees and the cap, the marks being at an angle to take account of the pronounced rake of the mast. There is a sheave for the topsail-yard halliard in the hounds, and a second sheave in the masthead for the topgallant-yard halliard; alternatively, the latter may be replaced by a block.

G. Crossjack-yard for the cross-jack. There is a sheave for the topsail-sheet in the four-square of the yardarm. Boom-irons are fitted.

H. Topsail-yard. Has two sheaves, one in each of the squares of the yardarm; one is for the topgallant sheet, the other for the reef-tackle. Boom-iron at the yardarm.

I. Topgallant-yard. A spar of identical dimensions can serve as a lower crossjack-yard.

J. Gaff, identical for the foresail and mainsail. The jaws must be assembled to the gaff making due allowance for the angle formed with the mast. A parrel with trucks closes the jaws. Note the presence of a collar of strap-iron (width 50mm, thickness 13mm) reinforcing the assembly.

K. Boom. The jaws are assembled as for the gaff. A small mark indicates the position of the given (largest) diameter of the boom. Note the cleats formed in the thickness of the spar for reefing. The outer end of the boom is reinforced with an iron strap.

The weight of the boom is supported by a saddle nailed to the mast.

Notes on painting *la Jacinthe*

L. Crosstrees of the foremast. Two trestletrees are supported by the stop of the hounds of the lower mast, with the masthead projecting between them; the heeling of the topmast is fidded so that it rests on the trestletrees. Two crosstrees, one shorter than the other, are scored down over the trestletrees, and have holes in their ends for the shrouds and backstays. Between the trestletrees and on the fore side a transverse timber encloses the fourth side of the hole for the heeling of the topmast, while a similar timber on the after side fills the space between the lower mast head and the after crosstree. Bolsters for the shrouds are nailed to the trestletrees between the crosstrees.

The cap I must be made taking account of the fact that it does not form a right-angle with the masts.

M. Trestletrees of the mainmast. The arrangements are similar to those for the foremast, save that there is only one crosstree.

O. Rudder. The head of the mainpiece is of semicircular section on the fore side (see the section o). The head of the sternpost is shaped accordingly, so that it is concave. The rudder irons are 68 mm wide and 27 mm thick, reducing at the forward or after ends to 15 mm. Length of the pintle 163 mm, diameter 34 mm.

P. Iron-stocked anchor. Two bower anchors of approximately 800 pounds [390 kgs] required. The length of the shank is equal to 3/8 of the beam of the vessel or 2.18 m. The ring is intended for a hemp cable \varnothing 75 mm.

Q. Kedge anchors similar in shape to the bowers but weighing only about 200 pounds [95 kgs]; the schooner has two kedge anchors which are stowed ready for use abaft the mainmast and flat on the deck-planking, secured by lashings passed through ringbolts.

R. Boat 19 feet long [6.18 m.], six thwarts for single-banked oars.

S. Cathead. The inboard part must be carefully adjusted to lay to the inner planking of the bulwarks. Two bronze sheaves; cat-falls \varnothing 20 mm; shank-painters \varnothing 28 mm; ring-stoppers \varnothing 34 mm.

T. 12-pdr carronade (see text and photographs on pp. 28-30).

Also on this Sheet are the square sails of *la Jacinthe* (explained in the following pages).

The hull would have been coppered, but if it is decided to leave the hull bare then the part below the waterline must be painted with white "stuff". The wale should be black, likewise the stem and the head, and the sternpost, counter and taffarel. The carved-work of the head should be picked out in straw yellow, as should that of the stern, including the arch of the taffarel. The schooner's name can be executed in dark blue.

Above the wale the sides, rail-stanchions and breast-rail can either be in straw yellow, or in black like the wale. The deck-planking should not be painted, while the step of the bowsprit, the bitts, the deck structure over the wardroom and the carriages of the carronades should be in straw yellow.

The boat should be painted black outside, straw yellow on the inside, while the transom can be picked out in yellow or green.

As far as the rigging is concerned, the topsail- and topgallant-yards should be black, as should the crosstrees and caps. All the other spars should be left unpainted.

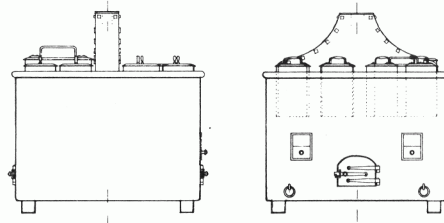
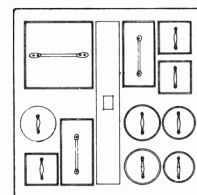
All the metal parts should systematically be painted black.

At this period the use of red and yellow ochre has been abandoned, and black and straw yellow dominate in imitation of the English Royal Navy, although white will come to replace the yellow before long. Green, commonly used during the Premier Empire, remains popular in the Restoration period.

But I hope I may be forgiven for recommending to those who are building the model that the vessel be left "natural", in my view an effect which is altogether more pleasing than paint.

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Iron galley stove (drawings from *Le Cygne*).

Sheet 5. *La Jacinthe* under sail. This drawing has been included more for aesthetic than for practical reasons, since in order to rig the model it will be easier to work with the information provided in the next section of the book than from the plan.

The proportions of the spars were derived from the information provided by the draughts reproduced on p. 27, which show *la Mutine*, the sister-ship of *la Jacinthe*.

The book by Costé to which I have already referred provided all the diameters of the rigging, and thus the dimensions of all the blocks. Other documents were used to establish the rigging plan, and these have either been reproduced in this book, or else I have given their catalogue number in the archives.

There is nothing absolute about the rigging, and several variants are possible. Thus I have chosen to show a temporary topgallant. I should add that this plan is conventional in its representation in that the fore-and-aft sails are assumed to be parallel to the keel, while the square sails have their yards braced to an angle of 40°.

RIGGING GUIDE

RIGGING TO THE MASTS

(see pp. 52-53)

Shrouds and pendants of the lower masts.

1. Foremast shrouds, three each side, \varnothing 45.
2. Mainmast shrouds, two each side, \varnothing 45.
3. Fore winding-tackle pendants, one on either side, \varnothing 45.
4. Main winding-tackle pendants, one on either side, \varnothing 45.

After fitting the softwood bolsters to the trestletrees the shrouds are got overhead in the following order for the foremast. The first eye has two short legs forming the fore winding-tackle pendants. The second has two legs, and forms the aftermost shrouds to port and starboard. The third forms the remaining two shrouds on the port side, and the fourth the last two to starboard.

In the case of the mainmast the order is as follows: first pair, pendants of the main winding-tackles; second pair, starboard shrouds; third pair, shrouds on the port side.

The \varnothing of the deadeyes is 270 (10"), \varnothing of the laniards 22. Winding-tackles: falls \varnothing 22, blocks (upper blocks treble, lower blocks* double) 217 long (8"). The eyes of the shrouds and tackle-pendants are served with spun-yarn down as far as the catharpins. Ratlings \varnothing 8.

Stays of the lower masts.

5. Forestay, \varnothing 45.
6. Fore preventer stay, \varnothing 22.
7. Mainstay, \varnothing 45.

The eye of the forestay is placed overhead the masthead and closed by an eye-splice. Its lower end turns in a heart, length 190 (7"); a collar \varnothing 45 goes round the bowsprit and at the other end turns in an identical heart; the two hearts are set up with a laniard \varnothing 14. The forestay serves as a jibstay for the fore-topmast staysail.

The preventer stay has a spliced eye which fits over the masthead; it serves two additional roles, bobstay for the bowsprit and jibstay for the outer jib. The preventer stay reeves through a sheave in a mortice cut in the outer end of the bowsprit and then turns in a heart length 108 (4"). This is set up by means of a laniard \varnothing 11 to a second heart which is stropped to the bobstay, composed of two legs passing through the bobstay-piece of the stem and spliced together. The mainstay is middled to form a bight which is seized and placed overhead the masthead. Only one of the two legs thus formed is used when the vessel is "on a wind". The lower end of each leg turns in a heart, length 190 (7"). The stay is set up to a second heart of the same size by means of a laniard \varnothing 14. The strap of this second heart turns in a thimble fitted with a hook. This is attached to one of two ringbolts at either side of the foremast at the foot.

* The long strap of the lower block reeves through a ringbolt.

Gammoning, bowsprit shrouds.

8. Gammoning, \varnothing 26.
9. Bowsprit shrouds, \varnothing 26.

The gammoning consists of about ten turns, securing the bowsprit to the head. The shrouds are formed from a single length of rope which is middled; the bight is seized to form an eye and is passed round the end of the bowsprit; the two legs pass back on either side and turn in a thimble with a hook at their ends; these in turn are hooked into ringbolts driven into the ship's sides abaft the catheads.

Rigging to the topmasts.

10. Fore-topmast shrouds, two on either side, \varnothing 19.
11. Fore-topmast backstays, one on either side, \varnothing 25.
12. Fore-topmast pole backstays, one on either side, \varnothing 13.
13. Main-topmast shrouds, one on either side, \varnothing 19.
14. Main-topmast backstays, one on either side, \varnothing 25.
15. Main-topmast pole backstays, one on either side, \varnothing 13.
16. Fore-topmast stay, \varnothing 15.
17. Main-topmast stay, \varnothing 15.

The fore-topmast shrouds form two eyes which rest over the stop of the hounds of the topmast; the main-topmast has only one pair. The shrouds reeve through the holes in the ends of the crosstrees, pass down to the futtock-staves (length of rope of the same diameter as the lower shrouds and lashed horizontally to the outside of them); there they reeve through an iron thimble made fast to the stave, and then pass back up one of the shrouds to which they are lashed. The fore-topmast shrouds are also rattled down.

The topmast backstays are formed from a single length of rope, which is middled and the bight forming an eye is placed over the hounds of the topmast, on top of the shrouds. The fore-topmast backstays reeve through a hole in the end of the after crosstree. The backstays are set up by means of little deadeyes, \varnothing 163 (6"), their iron bindings being fitted with a ring (see Sheet 3, H) which takes the hook of the binding of the lower deadeye. The pole backstays are middled to form a bight which is passed round the topmast-head below the truck, and the end of each leg reeves through a ringbolt in the ship's side abaft the channels, after which it is passed back up and seized to itself.

The fore-topmast stay has an eye spliced in its end which is passed round the topmast-head below the truck; the lower end passes forward to the outboard end of the jibboom where it reeves through the middle sheave of a treble block, length 163 (6"), lashed beneath the truck of the jibboom. The stay then runs back along the bowsprit and is belayed to a pin in the pinrail at the bow. Note that the occasional use of a fore-topgallant makes it impossible for the topmast stay to be made fast at the hounds of the topmast.

The eye of the main-topmast stay is spliced round the masthead beneath the truck, and the stay runs down to the foremast cap, reeves through one of the sheaves of a double block, length 163 (6"), which is lashed to the after side of the cap, then passes down the mast to be belayed to a mast-cleat at its foot, or else round one of the pins in the port or starboard forward pinrail.

Rigging to the jibboom.

18. Crupper, \varnothing 15.
19. Martingale stays, \varnothing 15.
20. Outhauler, \varnothing 15.

A small dolphin-striker or martingale is made fast by means of a hook and eye beneath the end of the bowsprit. The first stay has an eye in its end which is spliced beneath the truck of the jibboom, passes back to the martingale where it turns in a thimble made fast to the lower part; it then passes forward again and is seized to itself. A second thimble made fast above the first is turned into an eye formed in the bight of two stays which run back on either side of the bowsprit, reeve through eyebolts in the ship's side and are then seized to themselves.

The jibboom passes through the iron cap of the bowsprit, 2/3 of its length projecting beyond the cap. It is manoeuvred by means of an outhauler which is made fast at its standing end to the cap, reeves through a sheave in the end of the jibboom, runs back again to reeve through a block made fast to the cap, and is then belayed to a pin in the pinrail at the bow. The outhauler is used as a crupper when the jibboom is hauled out. The jibboom may be provided with horses.

RIGGING TO THE YARDS

(see pp. 54-55)

Rigging to the lower yards.

21. Foresail, gaff throat halliard, \varnothing 16.
22. Mainsail, gaff throat halliards, \varnothing 16.
23. Foresail, gaff peak halliards, \varnothing 16.
24. Mainsail, gaff peak halliards, \varnothing 16.
25. Mainsail, vang, one on either side, \varnothing 13.
26. Vang tackles, one on either side, falls \varnothing 10.
27. Boom topping-lifts, one on either side, \varnothing 20.
28. Topping-lift spans, one on either side, \varnothing 20.
29. Topping-lift tackles, one on either side, falls \varnothing 10.
30. Boom sheet tackle, falls \varnothing 17.
31. Guy pendant falls, one on either side, \varnothing 13.
32. Footrope, \varnothing 14.
33. Crossjack-yard slings, \varnothing 28.
34. Single lifts, \varnothing 18.
35. Braces, \varnothing 18.
36. Horses, \varnothing 17.

The gaff throat halliards, which are identical for both fore and mainsail, are composed of a tackle, the lower block of which is hooked to a sprig-bolt near the jaws of the gaff; the upper block is lashed between and beneath the trestletrees; the blocks are 163 mm (6") long, and are single-sheaved. The falls run down to the deck and are belayed to a mast-cleat at the foot of the mast. The peak halliards are identical for both sails. They are made fast at their standing end at the arm of the gaff, reeve through the sheave of a single block lashed to the after side of the mast-cap, pass back and reeve through a second single block made fast half-way along the gaff, then forward again to another single block lashed beneath the

crossrees, and finally run down to the deck where they are belayed to the second of the two mast-cleats. All these blocks are 163 mm (6") long.

The vangs are made fast at their standing end to the arm of the gaff, and turn in the upper block of a double purchase tackle; the falls are made fast at their standing end to the strap of the lower (single) block, which is hooked to a bolt near the taffarel. Both blocks measure 108 mm (4"). A simpler arrangement exists whereby the tackle is dispensed with, the vangs being formed of a single line on either side.

The boom topping-lifts are made fast at their standing end at the outboard end of the boom, reeve through the thimble of a span situated roughly mid-way along the part of the boom which extends beyond the stern. This brings the point of purchase nearer to the centre of gravity of the boom. Each topping-lift passes up and reeves through a double block made fast abaft and between the trestletrees, and then runs down the mast to turn in the upper block of a tackle, the lower block of which is hooked to a ring abaft the channels. Length of the blocks: double block 217 (8"), blocks of the tackle 108 (4"), the latter being either a double and a single block or two single blocks.

The boom sheet takes the form of a tackle with double blocks, the upper block has an eye formed in its strap which is lashed round the boom, while the lower block turns in a thimble in its strap which traverses freely on a horse (iron bar) fastened to the inside of the taffarel. Length of the blocks 190 (7").

The guys are composed of a pendant which is made fast to the boom a little way inboard of the boom-sheet, which turns in a thimble at its lower end, into which is hooked a tackle of which the lower block is hooked to a ring in the ship's side abaft the channels; the blocks measure 136 (5").

The crossjack-yard slings are placed over the head of the foremast and turn in a thimble at their lower end; a double strop is passed round the yard, with a thimble in the bight, and the two thimbles are lashed together.

The lifts are made fast over the yardarms and run up to a block (length 190 - 7") made fast to the mast-cap; from there they run down the mast and are belayed to one of the pins of the pinrail in the bow.

The braces are made fast over the yardarms and lead to a block (length 190 - 7") made fast to the forward lower mast shroud of the mainmast; from there they run down and are belayed to one of the pins of the after pinrail.

The horses are made fast over the yardarms and supported by four stirrups; they are composed of two ropes which turn in thimbles at their ends, and the two thimbles are lashed together amidships.

Rigging to the fore-topsail and topgallant yards.

37. Parrels of the topsail-yard.
38. Topsail-yard halliards, \varnothing 14.
39. Topsail-yard lifts, \varnothing 13.
40. Topsail-yard braces, \varnothing 11.
41. Topsail-yard horses, \varnothing 11.
42. Topgallant-yard halliards, \varnothing 15.
43. Topgallant-yard truss parrel, \varnothing 15.
44. Topgallant-yard lifts, \varnothing 8.
45. Topgallant-yard braces, \varnothing 8.

The topsail-yard parrel is composed of two rows of six trucks, although sometimes the parrel is a simple rope (i.e. a truss parrel)

as is the case for the topgallant-yard. The halliard is made fast to the yard, passes up and reeves through a sheave in the hounds of the topmast, then down to the deck where it is belayed to a pin in the forward port-side pinrail. The arrangement is the same for the topgallant-yard halliard.

The lifts are made fast at their standing end round the yardarm, reeve through a block (length 136 – 5") above the hounds and run down to the deck where they are belayed to a pin in the pinrail at the bow. The same arrangement for the topgallant lifts, save that a thimble made fast below the truck takes the place of the block.

The topsail-yard braces reeve through blocks lashed below the crosstrees (length 136 – 5"), and are belayed at the after pinrail. The topgallant-yard braces reeve through thimbles made fast above the hounds of the mainmast, running down thence to the after pinrail where they are belayed.

The horses are rigged in the same way as those of the crossjack-yard, but only have two stirrups.

RIGGING TO THE SAILS

(see pp. 56-57)

Rigging to the fore- and mainsail.

46. Foretack, Ø 12 (falls).
47. Maintack, Ø 12 (falls).
48. Foresheet, Ø 12 (falls).
49. Mainsheet, Ø 12 (falls).
50. Clue-garnet, foresail, Ø 15.
51. Clue-garnet, mainsail, Ø 15.
52. Foresail brails, Ø 15.
53. Mainsail brails, Ø 15.

Rigging to the other fore-and-aft sails.

54. Fore-topmast staysail halliard, Ø 12.
55. Fore-topmast staysail sheets, Ø 13.
56. Fore-topmast staysail tack and downhaul, Ø 10.
57. Inner jib halliards, Ø 12.
58. Inner jib sheets, Ø 13.
59. Inner jib tack and downhaul, Ø 10.
60. Outer jib halliards, Ø 12.
61. Outer jib sheets, Ø 12.
62. In-hauler and jibstay, Ø 10.
63. Gaff-topsail tack, Ø 10.
64. Gaff-topsail sheets, Ø 10.
65. Gaff-topsail halliards, Ø 10.

Rigging to the square sails.

66. Fore-topsail sheets, Ø 22.
67. Fore-topsail clue-lines, Ø 11.
68. Fore-topsail buntlines, Ø 12.
69. Fore-topsail leech-lines, Ø 11.
70. Fore-topsail reef-tackles, Ø 10.
71. Fore-topsail bowlines, Ø 11.

72. Fore-topgallant sheets, Ø 8.

73. Fore-topgallant clue-lines, Ø 8.

74. Fore-topgallant bowlines, Ø 8.

The tacks of the foresail and main are secured by means of tackles, hooked into a thimble at the tack of the sail and a ringbolt in the deck a little way forward of the mast.

The foresheet is arranged in the same way, save that the lower block is hooked to a ringbolt to port or starboard abaft the mainmast.

The mainsheet is made fast at the after end of the boom, reeves through a block strapped to the boom, runs back along the boom and is belayed to a cleat nailed to it.

The single blocks of all these tackles are 136 (5") long.

The brails are formed of two legs, which run up to the gaff on either side of the sail. The peak brail reeves through a single block on the gaff, then through a double block (the second sheave of which is for the middle brail), and finally to a threefold block also used by the clue-line; length of all these blocks 163 (6"). The brails and the clue-line are all belayed at the pinrails inside the bulwarks. The arrangements are identical for both the foresail and the main.

These sails are bent to gaffs, and are fastened to the masts by means of hoops, allowing them to slide up and down. Sometimes the lower part of the luff (fore leech) is laced to the mast rather than sliding on hoops. This allows the clue to be brailed up by means of a small line made fast to the corner of the sail and passing up to reeve through a block lashed beneath the jaws of the gaff and then down to the clue again, where it is made fast with one or two fathoms of slack.

The fore-topmast staysail is bent to the forestay, and it has a single halliard which runs up to a block on the port side and beneath the crosstrees, then down to the deck where it reeves through a lead-block strapped to a ring before being belayed to one of the pins of the forward pinrail.

The sheets are formed of a single line which is middled, and the two legs lead back to two blocks length 108 (4") lashed to the side; they are belayed to range-cleats.

The tack is formed of a length of ratling which secures the clue to the jibstay (forestay).

The downhauler reeves successively through the hanks fastened to the fore leech and then through a block length 108 (4") made fast at the clue; it is belayed to one of the pins of the pinrail in the bow.

The inner jib is bent to the fore preventer-stay, and otherwise it is rigged in the same manner as the fore-topmast staysail.

The outer jib is not bent to a stay, and it is hoisted by means of a halliard which reeves through a block lashed beneath the truck of the fore-topmast, from where it returns down to be belayed at the forward pinrail, sometimes passing through a lead-block first. The tack of the outer jib is made fast to a traveller, which is an iron ring sliding up and down the jibboom. A small out-hauler is made fast to the traveller, reeves through the sheave at the end of the jibboom, and returns down the jibboom and the bowsprit to be belayed at the pinrail in the bow. Another small line, the in-hauler, is also made fast to the traveller and is belayed likewise at the pinrail in the bow.

The sheets take the form of a pendant turning in a block, through which reeve the sheets proper, which are made fast at their standing end abaft the cathead and return to reeve through a block made fast near the sheets of the other jibs.

The tack of the gaff-topsail is at its fore lower corner and it is double, one leg reeving through a thimble turned into the strap of one of the blocks fastened to the jaws of the gaff, while the other leg is left free, being used as a down-hauler; both these lines are belayed at one of the pins of the after pinrail. The sheet reeves through a block made fast at the arm of the gaff, runs down the gaff

to reeve through a second block seized to the starboard after shroud, and then runs down to be belayed at the starboard after pinrail. The halliard reeves through a block made fast above the hounds of the main-topmast and then runs down to the deck where it is belayed at the port after pinrail.

All the blocks to which I have referred are 136mm long (5").

The fore-topsail sheets are secured at the clues by means of a wall-knot; they reeve through sheaves let into the arms of the crossjack-yard, run back along this yard, reeve through single blocks (length 217 – 8") lashed to the yard at the slings, and then run down to be belayed at one of the mast-cleats at the foot of the mast.

The clue-lines are made fast at their standing end on the topsail-yard abaft the sail, run down to blocks (length 136 – 5") at the clues, then up again to double shoulder-blocks of the same size which are lashed to the yard next to the standing ends; finally they run down to be belayed at the forward pinrails.

The buntlines, of which there are two, are secured to cringles centrally placed in each half of the footrope of the sail, run up the forward side of the sail to reeve through the second sheave of the double shoulder-blocks (length 136 – 5") lashed to the topsail-yard, and from there they run down to the deck to be belayed at the forward pinrails.

The leech-lines are made fast to the upper bowline-cringles, pass up the sail on the fore side to the shoulder-blocks and thence down again to be belayed at the forward pinrails.

The reef-tackles are single lines made fast to the upper reef-crinkle; they lead up to reeve through a thimble at the hounds of the fore-topmast, and then down again to be belayed at the forward pinrails.

The bowline bridles are made fast to three cringles, and the bowlines run down to reeve through two of the sheaves of the threefold block lashed below the truck of the jibboom, run back along the jibboom and the bowsprit and are belayed at the pinrail in the bow.

The fore-topgallant sheets are made fast to the clues of the sail, reeve through a sheave in the arm of the yard, run back along the yard and reeve through a single block length 217 (8") lashed to the yard at the slings, then down to the deck where they are belayed at the forward pinrails.

The topgallant clue-lines are made fast at the clues, pass up the after side of the sail and reeve through blocks length 108 (4"), then pass down to the deck where they are belayed at the forward pinrails.

The fore-topgallant bowlines run down to the forward end of the jibboom, reeve through a thimble lashed beneath the truck, and run back along the jibboom and bowsprit to be belayed at the pinrail in the bow.

Alternatively, the topgallant may only be rigged temporarily, in which case a length of line takes the place of the sheets, and the clue-lines and bowlines are dispensed with, as are the braces and lifts of the topgallant-yard. In order to take in the sail, either the yard must be sent down or else the sail must be unbent and the sheets detached before stowing it on deck.

Other sails may on occasion be rigged to *la Jacinthe*. First of all a **cross-jack**, bent to the crossjack-yard; and when this sail is not in use it is furled on a lower yard in order not to strain the rigging. This is called the **lower crossjack-yard**, and it is half the length of the crossjack-yard. In order to spread the sail to the wind, swinging-booms are required to extend the clues, and these booms are of iron. The cross-jack may be supplemented by studdingsails, as may the topsail. And if the topgallant-mast pole is long enough two small triangular sails called **fly-by-nights** may be bent to the topgallant-yards.

A **fore gaff-topsail** may be rigged, while a **ring-tail sail** may be rigged to extend and increase the surface area of the mainsail.

In foul weather a small jib known as a **storm jib** may be rigged, its tack being made fast to the stem. Still on the subject of foul-weather sails, a smaller mainsail called a **storm mainsail** may be used, bent to a shorter **storm gaff**, which is 2/3 of the length of the usual spar. Some schooners increase the number of square sails carried by rigging topsail and topgallant on the main.

Other variants exist, with a staysail rigged over the foresail, and with gaff-topsails bent to their own gaffs so that they are quadrilateral rather than triangular in shape. The foresail may be bent to a boom like the mainsail, but this arrangement seems rare on French schooners.

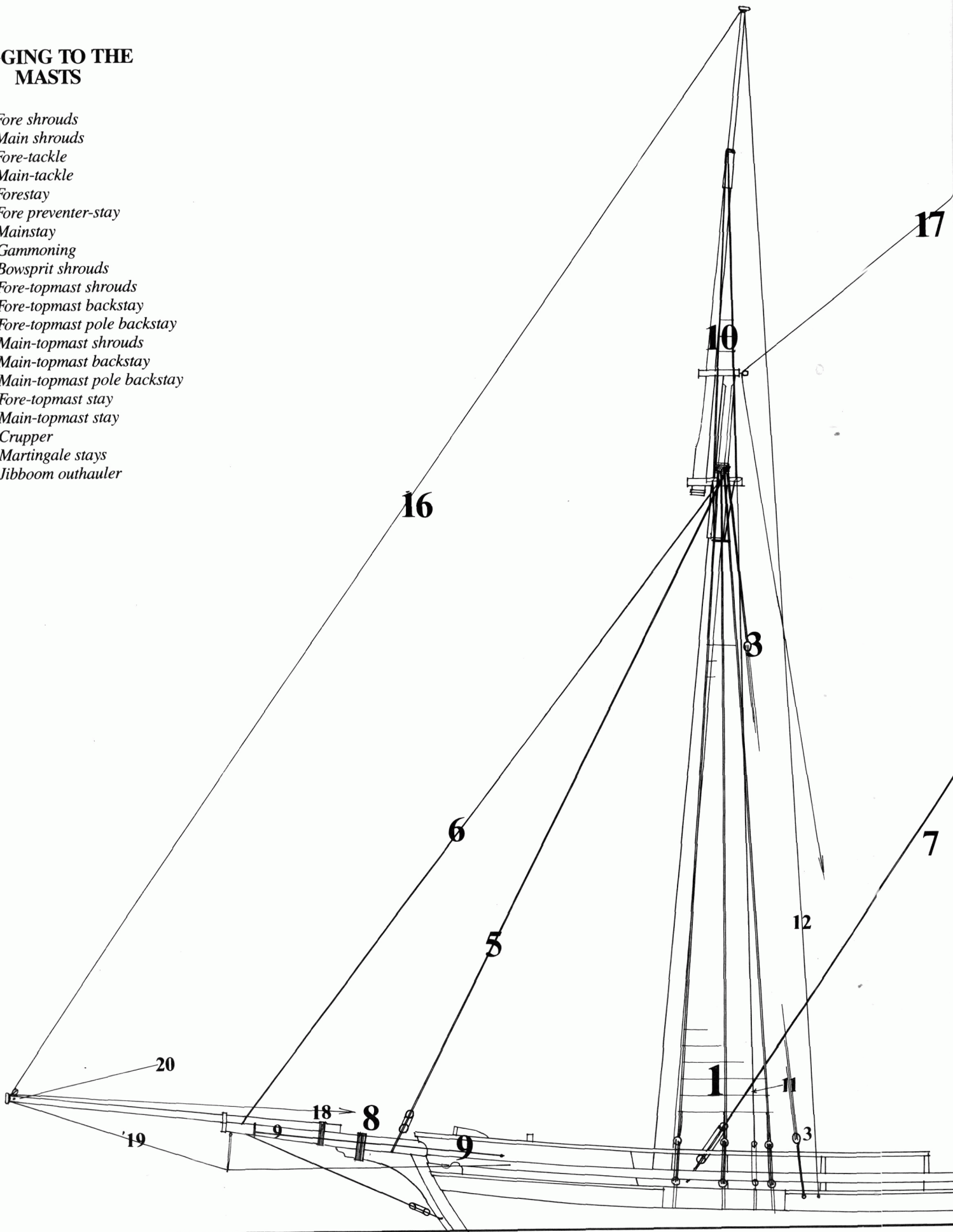
And to omit nothing, I should mention that some schooners bend their main- and foresails to a **try-sail mast** like snows (see *le Cygne*), while others prefer to rig **royal sails** in the place of fly-by-nights, or rig **spritsails** if the steeve of the bowsprit is sufficiently steep.

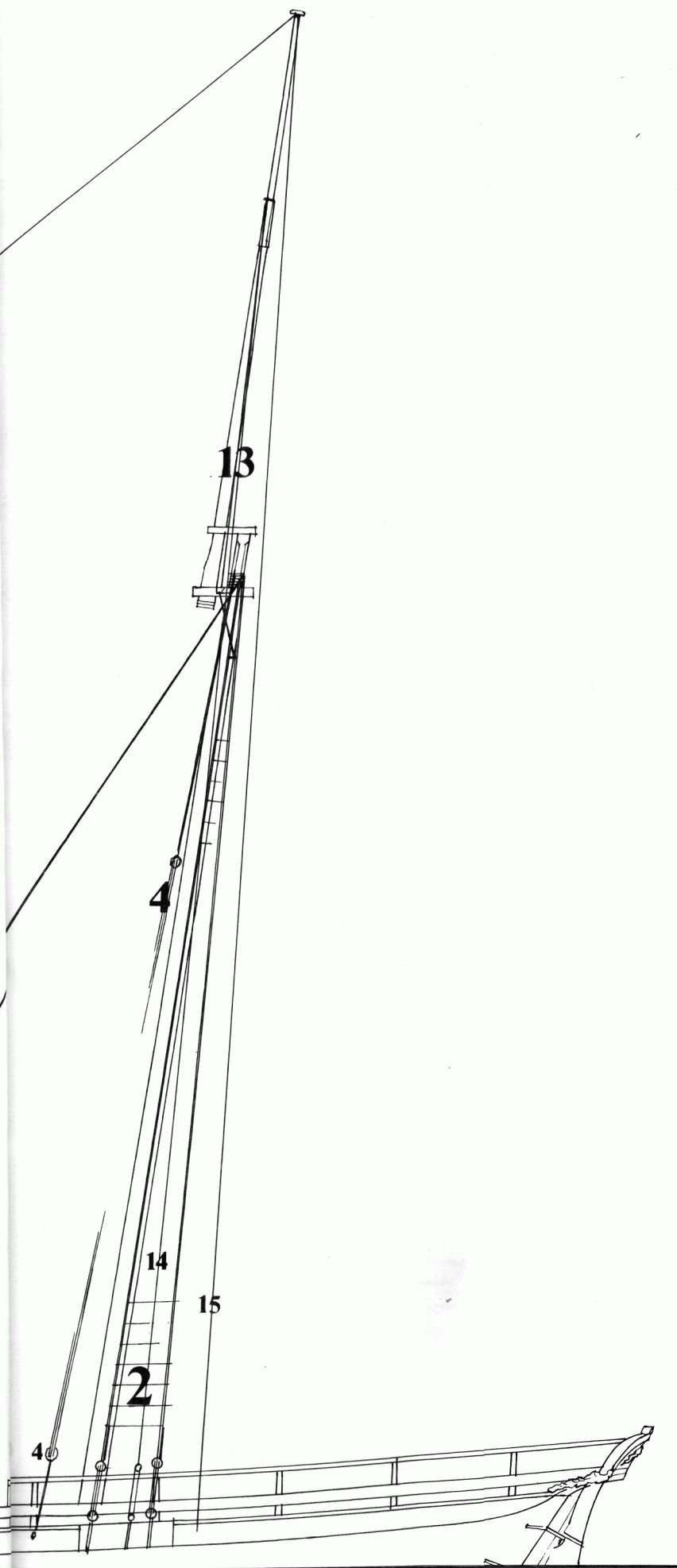
What a large number of variants for the rigging enthusiast! However, let us agree that all this is a long way from the pleasant simplicity of the archetypal schooner, whose only square sail is a temporary topsail on the foremast.

*
* * *

RIGGING TO THE MASTS

1. Fore shrouds
2. Main shrouds
3. Fore-tackle
4. Main-tackle
5. Forestay
6. Fore preventer-stay
7. Mainstay
8. Gammoning
9. Bowsprit shrouds
10. Fore-topmast shrouds
11. Fore-topmast backstay
12. Fore-topmast pole backstay
13. Main-topmast shrouds
14. Main-topmast backstay
15. Main-topmast pole backstay
16. Fore-topmast stay
17. Main-topmast stay
18. Crupper
19. Martingale stays
20. Jibboom outhauler





BELAYING POINTS

Foremast cleats

- 17. Main-topmast stay
- 21. Gaff throat halliard (foresail)
- 23. Gaff peak halliard (foresail)
- 66. Topsail sheets

Mainmast cleats

- 22. Gaff throat halliard (mainsail)
- 24. Gaff peak halliard (mainsail)

Bow pinrail

- 20. Jibboom outhauler
- 56. Fore-topmast staysail downhaul
- 59. Inner jib downhaul
- 62. Outer jib in-hauler
- 71. Fore-topsail bowlines
- 74. Fore-topgallant bowlines

Fore pinrails

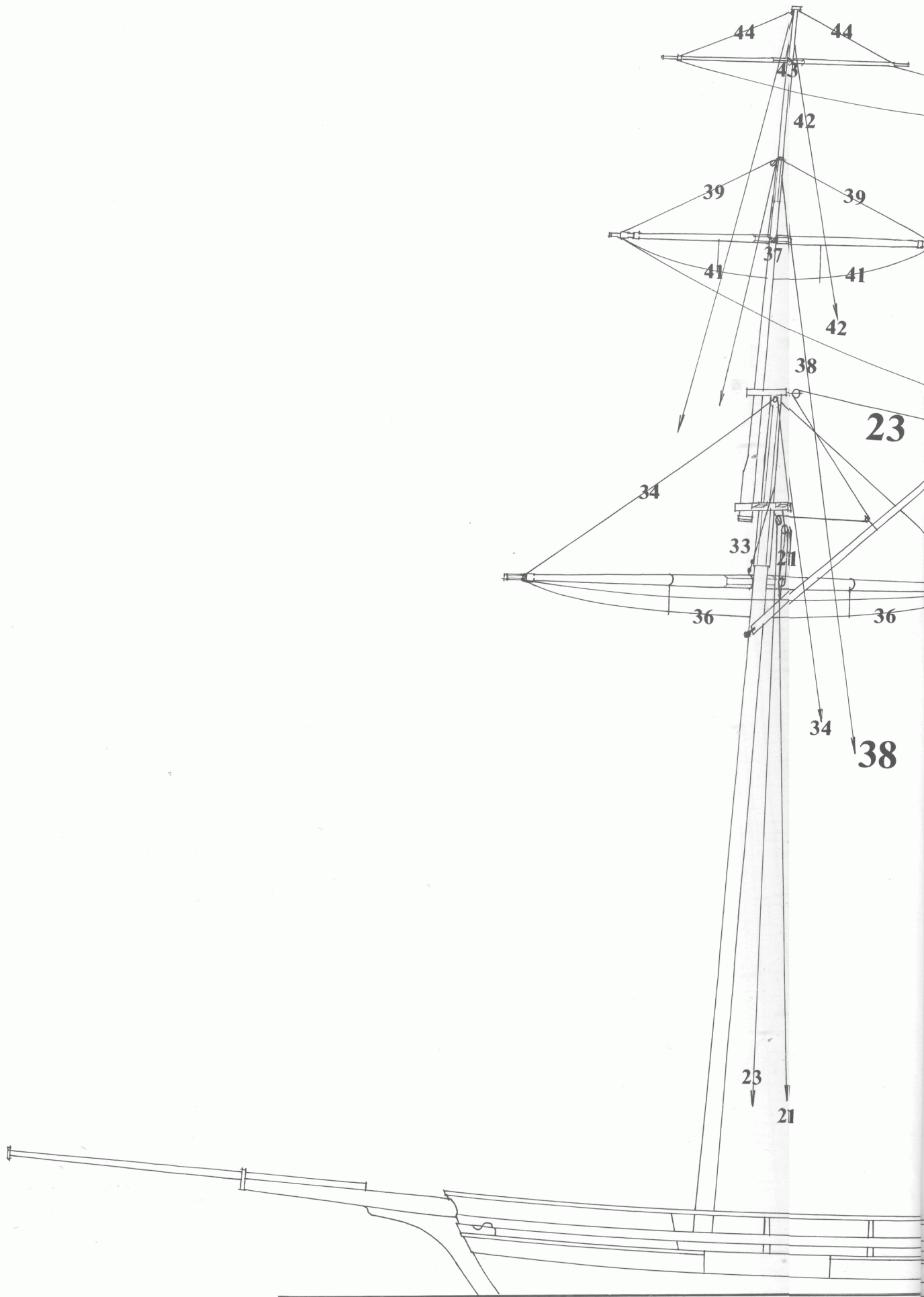
- 34. Crossjack-yard lifts
- 38. Topsail-yard halliards (port)
- 39. Topsail-yard lifts
- 42. Topgallant-yard halliards (starboard)
- 44. Topgallant-yard lifts
- 52. Foresail brails
- 54. Fore-topmast staysail halliard
- 57. Inner jib halliard
- 60. Outer jib halliard
- 67. Fore-topsail clue-lines
- 68. Fore-topsail buntlines
- 69. Fore-topsail leech-lines
- 70. Fore-topsail reef-tackles
- 72. Fore-topgallant sheets
- 73. Fore-topgallant clue-lines

After pinrails

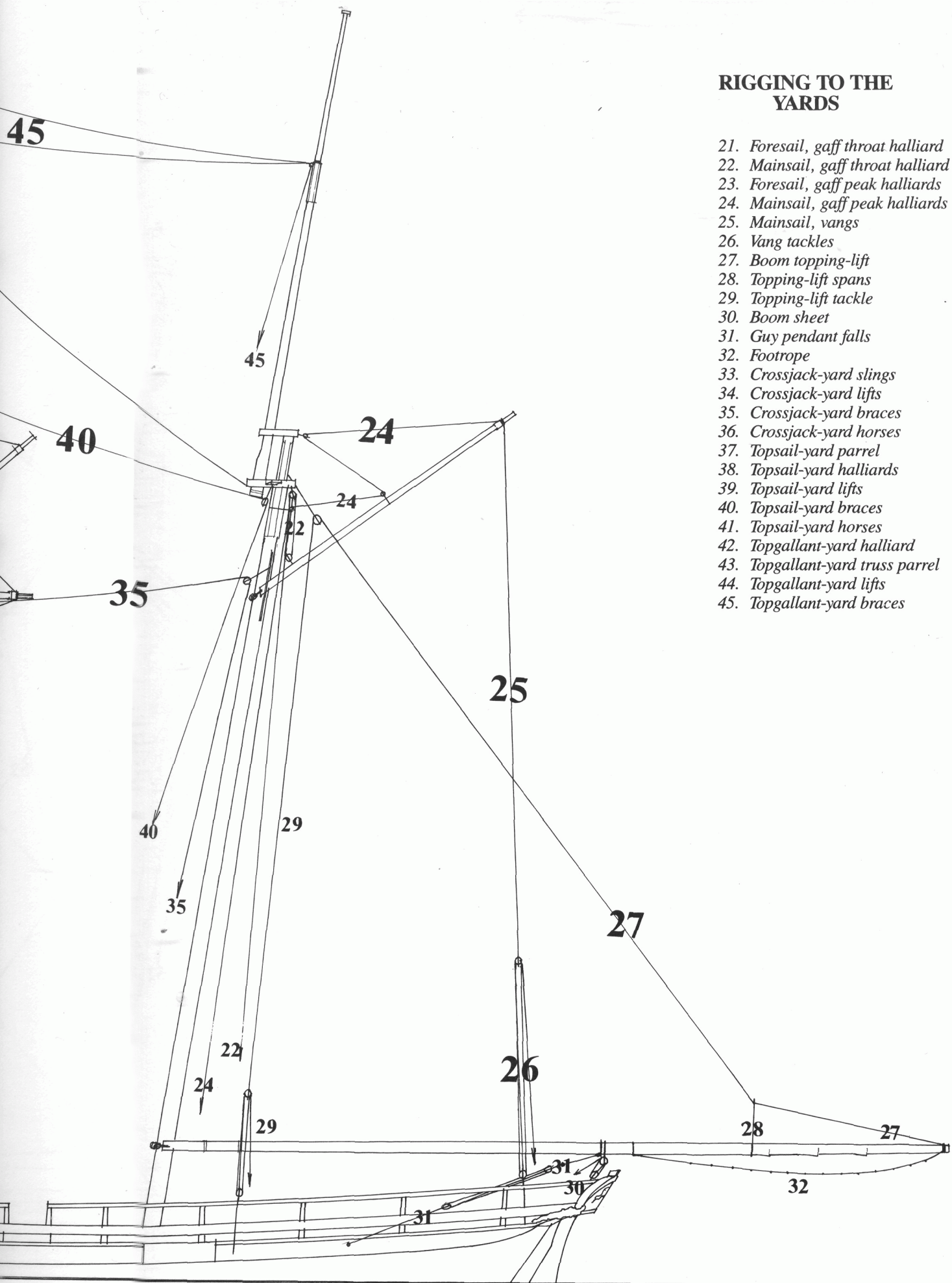
- 35. Crossjack-yard braces
- 40. Topsail-yard braces
- 45. Topgallant-yard braces
- 53. Mainsail brails
- 63. Gaff-topsail downhauler
- 64. Gaff-topsail sheets
- 65. Gaff-topsail halliards

Miscellaneous

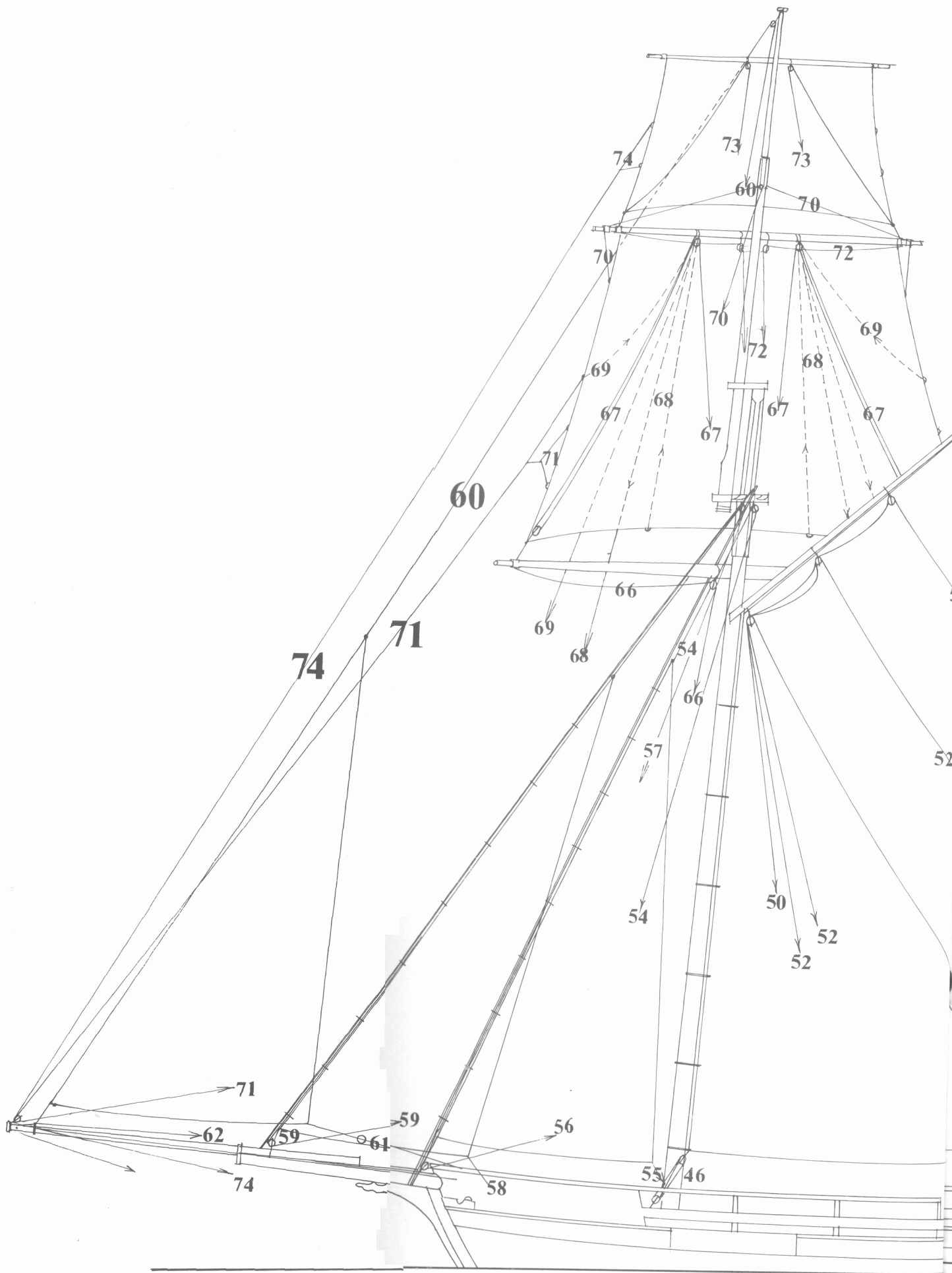
- Fore preventer-stay to sheave at end of bowsprit and to lacing, 6.
- Two rings at foot of foremast for mainstay, 7.
- Two rings abaft the channels for pole topmast backstays, 11-12.
- Rings near the taffarel for vang, 25-26.
- Rings abaft the channels for boom topping-lift and boom-sheet, 27-31.
- Foresheet to cleat, 48.
- Jibsheet to cleats, 61-55-58.



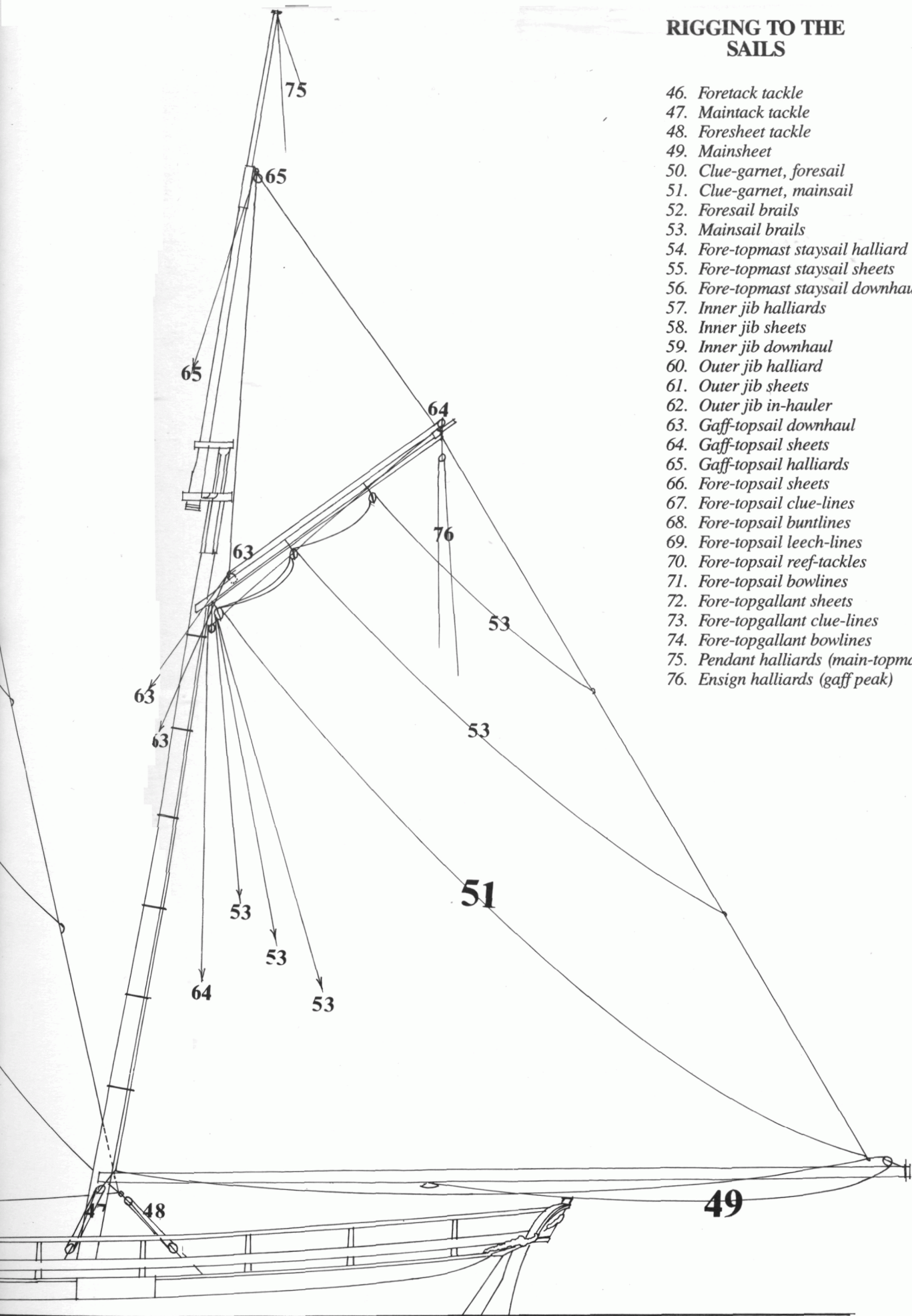
RIGGING TO THE YARDS



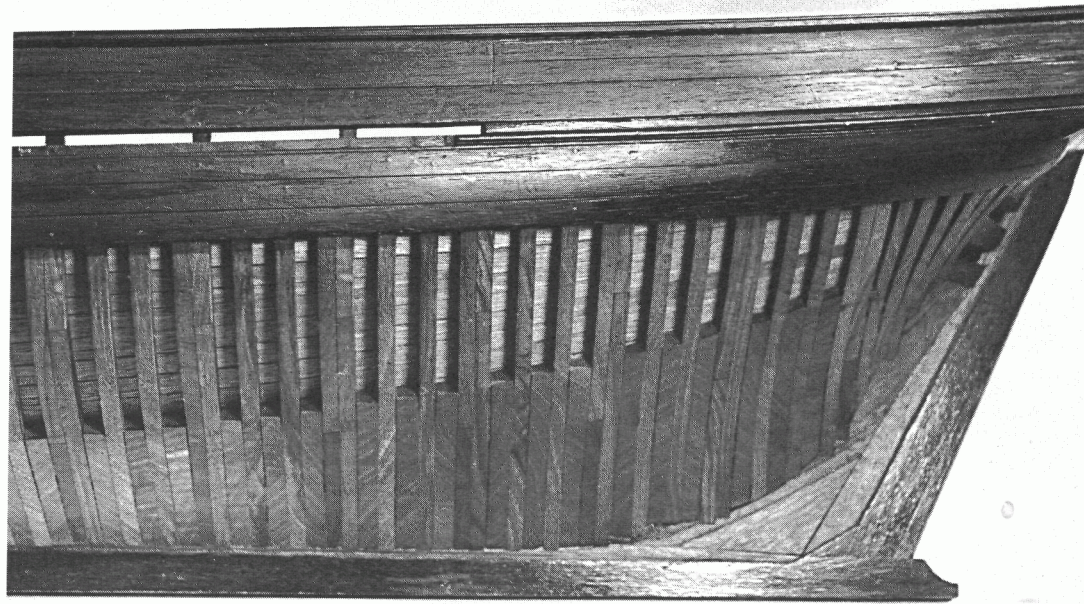
- 21. Foresail, gaff throat halliard
- 22. Mainsail, gaff throat halliard
- 23. Foresail, gaff peak halliards
- 24. Mainsail, gaff peak halliards
- 25. Mainsail, vangs
- 26. Vang tackles
- 27. Boom topping-lift
- 28. Topping-lift spans
- 29. Topping-lift tackle
- 30. Boom sheet
- 31. Guy pendant falls
- 32. Footrope
- 33. Crossjack-yard slings
- 34. Crossjack-yard lifts
- 35. Crossjack-yard braces
- 36. Crossjack-yard horses
- 37. Topsail-yard parrel
- 38. Topsail-yard halliards
- 39. Topsail-yard lifts
- 40. Topsail-yard braces
- 41. Topsail-yard horses
- 42. Topgallant-yard halliard
- 43. Topgallant-yard truss parrel
- 44. Topgallant-yard lifts
- 45. Topgallant-yard braces



RIGGING TO THE SAILS



46. Foretack tackle
47. Maintack tackle
48. Foresheet tackle
49. Mainsheet
50. Clue-garnet, foresail
51. Clue-garnet, mainsail
52. Foresail brails
53. Mainsail brails
54. Fore-topmast staysail halliard
55. Fore-topmast staysail sheets
56. Fore-topmast staysail downhaul
57. Inner jib halliards
58. Inner jib sheets
59. Inner jib downhaul
60. Outer jib halliard
61. Outer jib sheets
62. Outer jib in-hauler
63. Gaff-topsail downhaul
64. Gaff-topsail sheets
65. Gaff-topsail halliards
66. Fore-topsail sheets
67. Fore-topsail clue-lines
68. Fore-topsail buntlines
69. Fore-topsail leech-lines
70. Fore-topsail reef-tackles
71. Fore-topsail bowlines
72. Fore-topgallant sheets
73. Fore-topgallant clue-lines
74. Fore-topgallant bowlines
75. Pendant halliards (main-topmast truck)
76. Ensign halliards (gaff peak)



These photographs were taken of the model of la Topaze in the Musée de la Marine (ref.: 19.MG.10). The hull shows a number of significant differences when compared to the original draughts: for example, the bulwarks are berthed up (planked) all the way from stem to stern. However, the main purpose of reproducing these pictures is to show the timbering of the hull.

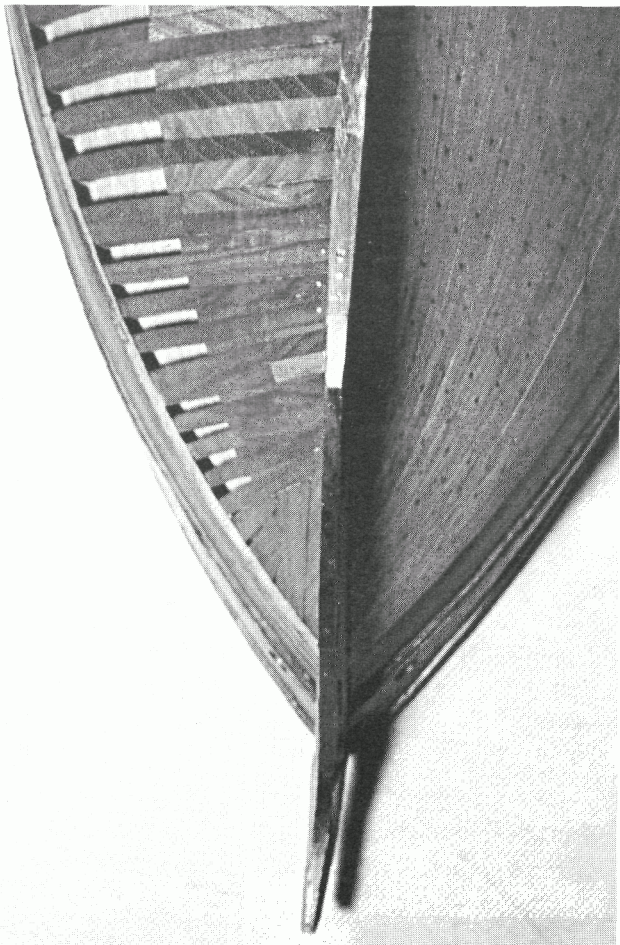
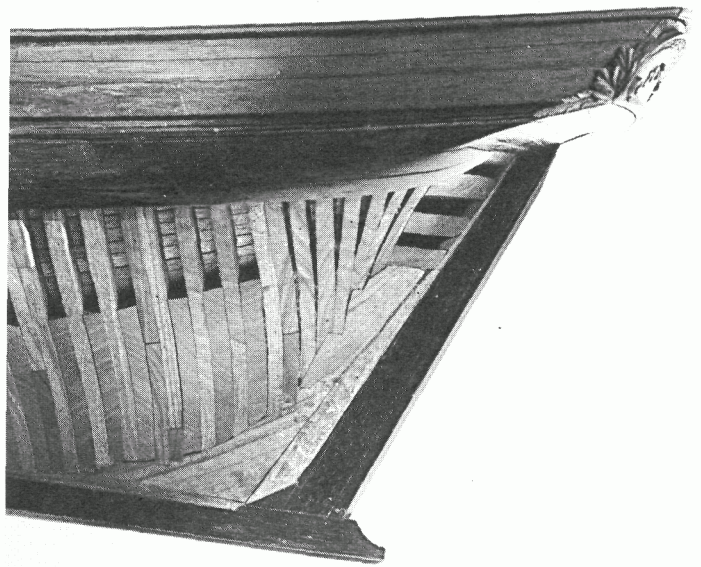
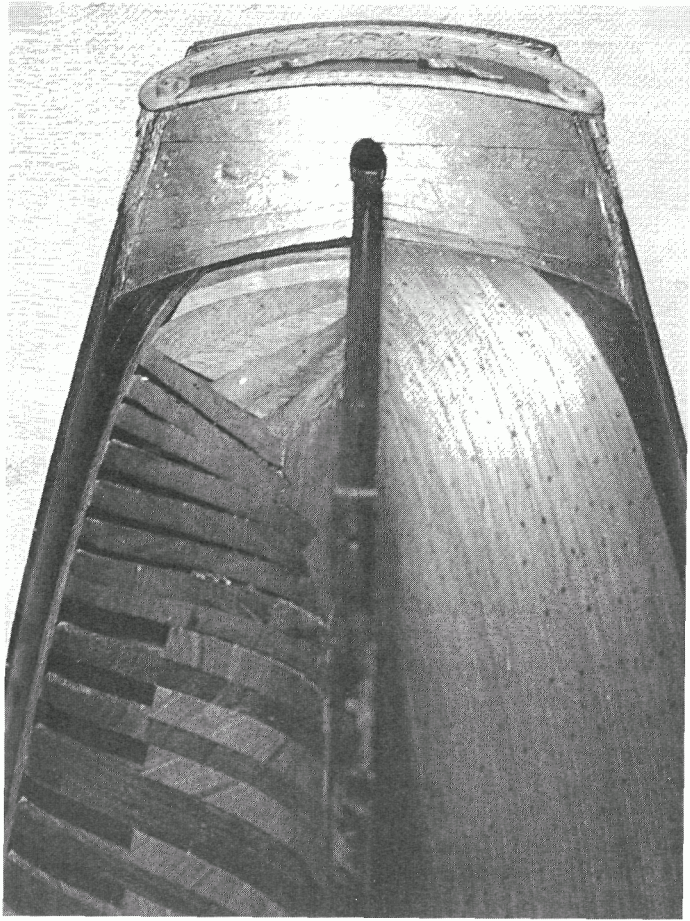
It will be seen that the moulded frames are composed of two frames of bends, while the filling-frames, two between each pair of moulded frames, are single. The room between the frames is considerable, since it is equal to the fore-and-aft thickness of the frames. In the floors, filling-timbers are inserted into the spaces between the frames so that they are solid. At the bow the frames are canted. The way the hawsepieces, deadwood of the stern and the transoms have been worked can be clearly seen in the photographs, as can the very light structure of the deck.

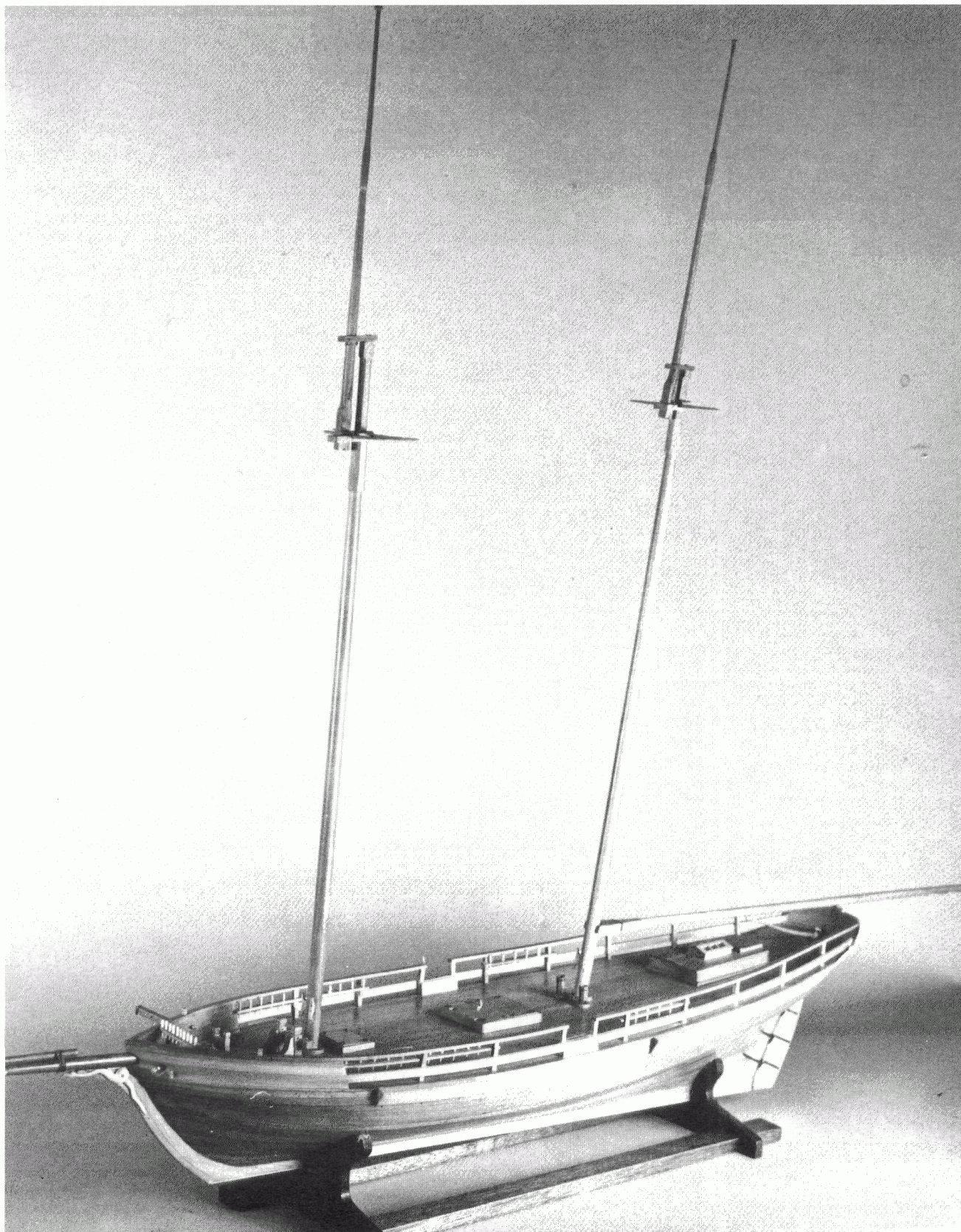
I append the scantlings of the principal timbers as laid down in the Regulations governing their size in ships of the French Navy, so that those of you who are more experienced or ambitious can undertake the difficult task of redrawing the plans and building a plank-on-frame or a "Navy Board" model.

*Transoms, height 16
Wing-transom, h. 19, b. 26
Beams, h. 12, b. 16
Deck planks, thickness 5
Ceiling planks, thickness 3
Middlebands, thickness 4
Thickstuff, thickness 5
Clamp, thick 10, h. 30
Wale, thick 8, b. 20
Hull planking, thick 2
Bottom planks, thick 4
Keelson, thick 15, b. 30
(all dimensions in cms).*

*Keel, breadth 18, height 32
Rising wood, b. 18, h. 4
Frames, moulded 15
Frames, sided 12
Toptimbers, moulded 7
Toptimbers, sided 10
Sternpost, b. 18, thick 48 (at heel)
Sternpost, b. 18, thick 28 (at head)
Stem, b. 18
Stem, b. 18, thick 30 (at head)
Deck shelf, b. 18, thick 18*







A model of la Jacinthe by Mr Bourguignon in course of construction. This model is beautifully executed in pearwood which has been very lightly stained using outdoor wood-stain. The model is intended to be rigged, but without sails. The photographs which appear on pages 68-70 show close-up views of the same model.

BUILDING THE MODEL

While this monograph was written with the beginner in mind, this does not mean that it is of no interest to more experienced modelmakers, who will be charmed by the elegance of the hull lines and the lightness of the rigging. It is not an easy task to choose a suitable subject for modelmakers who are inexperienced, but who for all that are looking to produce a model to standards of which they can be proud; it is crucial to select a type of vessel which is not too complicated, and I believe that this schooner meets those criteria.

I sought the advice of friends who are modelmakers, among them Mr Souchard, who is Secretary of the Society of Ship Modellers at the Musée de la Marine. My first questions concerned the draughts: exactly which plans were needed for a simplified building method. It took a number of discussions before we were satisfied that we had defined the sorts of drawings needed, and the method of building had been selected. It was here that Mr Souchard's experience was essential, for we were able to "test" our findings on one of the younger members of his group, Eric Aïta: our confidence was completely justified by the success of the model which he built, a remarkable feat in view of the fact that he had never built a model before. But almost all of us have the patience and skill to build an attractive model of *la Jacinthe*.

However, before going any further I think I should offer a few short words of advice; follow them carefully and you will be sure of building a model to be proud of!

"It is essential at all times to **remain in control**, even if at times this means taking greater pains and more time over it. Do not be tempted to simplify the proposed method of building, which is already elementary. Think about every stage, so as to understand the function of each part through careful study of the plans. Finally, do not rush the job, for the art of modelling teaches the essential virtue of patience!"

Mr Souchard was anxious to propose a method of building which would be within the reach of a beginner, limiting the tools required and the materials to a minimum. Granted, the completion of a fully-rigged model is ambitious for a newcomer to the art of modelmaking, but the hull is certainly within his capabilities, and there is no reason why this should not be an object of quality and beauty. Completing the hull will bring a great feeling of satisfaction, and then perhaps, armed with the experience gained through this first success, he may be tempted to move on to something more ambitious, such as a brig. Progressively the modelmaker will attain the essential skills of the "high art" of ship modelling, gaining along the way the knowledge which is the essential corollary and indeed justification of the art, a knowledge of the techniques of our forefathers and of the history of technology – in short, the "culture" of shipbuilding. I should add that reliable sources are the first essential before embarking on a project which will demand an investment in terms of hours which is often considerable.

Whatever the skill and application of the modelmaker, if the historical basis is not completely sound then disappointment and demotivation will be the inevitable results. But it must be said that in order to judge the quality of the source documents some basic knowledge is essential. Beware of "short cuts", of buying fittings such as blocks or guns off the shelf, at the risk of spoiling the effect of your own work however good. Only use traditional materials, avoid plastic. Visit the maritime museums nearest to you: you will learn many of the best lessons from the modelmakers of the past.

And if at all possible, do not cut yourself off, but seek out the company of others who share your interest: the result will be fruitful exchanges of experience, and a lively and stimulating spirit of emulation.

BUILDING THE HULL

There are a large number of different techniques for building the hull of a model, but we have chosen this one for *la Jacinthe* primarily because it seems to be both straightforward and accurate, with the additional great advantage of being easy to control.

This method, which is often called "the planked-up hull block", is something of a compromise between the "bread-and-butter" and the "plank on frame" or "plank on bulkhead" methods. The hull is worked on upside down, resting on "lugs", the keel lying along the centre-line of a building-board.

The building-board. Take a piece of 20mm blockboard measuring 50 × 25cms. The board must be perfectly flat and rectangular.

Mark out a longitudinal axis, dividing the board into two equal parts, and then mark out the lines of the frames, perpendicular to the axis. Finally, mark out the contour of the deck.

Stem, keel and sternpost assembly. This is made from a single piece of 2mm plywood, which should be marked on both sides with the positions of all the frames, and with the line of the bottom of the hull when planked. Omit the false post and knee of the head, which will be cut out later from 4mm pear and fayed to the rest of the assembly. Next glue to either side of the assembly a sheet of 1mm pearwood veneer so as to cover the whole area which will be visible once the frames have been planked. You should cut out the veneer carefully so as to show all the joints: the scarphs of the keel, the gripe, the timbers of the stem, and the line where the sternpost meets the keel. These are all marked on the plans. Take great care fitting the pieces of veneer together, and scrape off any excess adhesive carefully from the unveneered part which forms the "rabbet".

Frame bulkheads. On Sheet 1, Drawing A, the thickness of all the bulkheads except I and II is shown as 8mm (the latter are only 5mm thick). In order to make it easier to cut out the former and to control the saw blade, we recommend that the 8mm bulkheads be made from two 4mm thicknesses, which must be perfectly matched and symmetrical whichever way they are glued together. Trace the shape of each bulkhead from Sheet 1, Drawing C (Nos I and II are shown in Drawings D and E), and transfer the tracing to two identical pieces of 4mm plywood for each double bulkhead. Nos I and II should be traced onto a single thickness of 5mm ply. To one of the pieces forming each double thickness two lugs are added, which serve to raise the frames off the surface of the building-board, keeping the keel parallel to it. The lugs should be approximately 20mm wide, and if cut off along the top margin of Sheet 1, this will ensure that the keel is parallel to the building-board and raised sufficiently.

The two parts of each frame bulkhead are glued together. When marking out the shape of the frames it is important to mark also the inner line which corresponds to the shape of the forward face of frames 2.3.4. and of the after face of frames 6.7.8.9.10.

This whole process requires the utmost precision, and do not hesitate to reject any piece which has the slightest error, however small.

When the glue has dried, cut a 2mm wide notch in the heel of each bulkhead, into which the keel fits. **Note that the thickness of the unveneered part of the keel is only 2mm, although the full width as shown on the plans is 4mm.**

An 8mm square strip of wood is screwed to each lug, and the strip should be long enough to extend beyond the width of the bulkhead by a sufficient length to enable it to be screwed down into the building-board – about 20cms is adequate, but with care you can cut all 11 strips from a 2m. length. Having cut and drilled the strips, screw them to the bulkheads, and then to the building-board, taking care to ensure that the axes of each bulkhead correspond to those marked on the building-board, and that the mid-point of each bulkhead is immediately over the longitudinal axis of the board. The strips should be screwed to the after face of each bulkhead, except for bulkhead 10 where the strip must be screwed to the forward face, since the gap between Nos 10 and 11 is only 9mm wide.

If everything has been correctly done the keel should fit into the notches in the bulkheads perfectly without forcing, but nor should there be the slightest play in the joins, or any deformation. If all is correct, the keel can now be glued to the bulkheads, **except to Nos 1 and 11**, which will have to be disassembled later.

Bow and stern blocks. These are made as half-blocks cut out of any soft wood (except balsa), and formed “bread-and-butter” fashion from slices which are equal in thickness to the waterlines, the dimensions of which are shown on Sheet 1 in drawings **D** and **E**. The dimensions are transferred to the pieces of wood, and they are cut out in exactly the same way as the frames. Do not forget for each “slice” to draw in the upper and lower outline, the latter serving as a useful check when offering up each piece to its neighbour.

The bottom two slices are treated as one, which simplifies the work with these very small pieces.

Once each piece has been checked for alignment they can be glued together, but take care that they do not slip at all when cramping them by first nailing each piece to its neighbour before tightening the cramps.

Bulkheads 1 and 11 are now removed from the building-board and the four assembled half-blocks are offered up and checked for alignment. They are then sanded gently and glued to the bulkheads. A useful tip while this is being done is to insert a piece of scrap 2mm ply between the half-blocks (simulating the keel), removing it briefly after the glue has been applied to ensure that it is not welded into the assembly! (Alternatively, wrapping the scrap timber in kitchen film will prevent it from sticking.)

Filling between the bulkheads. The filling-pieces should be of a suitable soft wood (but not balsa), ensuring that the grain of the wood is parallel to the keel. It is important to leave a little timber protruding above the profile of the bulkheads.

The next task is to finish the hull block, starting with a rasp, and filing off the surplus timber from the filling-pieces and the bevel of the frames until the curve is fair. A flexible batten held across the frames first in one direction and then in another will help to make

the curves fair, by looking carefully to ensure that it lands evenly on all portions of the hull. It is particularly important that there should be no “flats” between the frames. The work is then cleaned up with sandpaper. Continue to check the work with the batten, and if at any stage small faults are discovered they should be corrected by means of a filler. Cellulose-based or resin-based fillers should not, however be used, since PVA adhesives will not bond to them. Shaping the hull block is long and painstaking work, but the finish must be absolutely perfect, since the whole quality of the model depends on it; it is thus worth expending a bit more time and care on this stage of construction.

Planking the hull. The run of the planks of the hull will be found on the plans marked on the after face of frames 2.3.4.5., and on the forward face of frames 6.7.8.9.10. These divisions must not be transferred to the edges of the bulkheads of the hull block, using a strip of paper and a pencil to mark each line. It will be seen (Sheet 2, drawing **B**) that three strakes – the stealers – do not finish in the rabbet of the stem but are hooked into a neighbouring strake. At the stern, towards the bottom of the sternpost, it will be seen that an extra strake has had to be inserted which finishes approximately on a line with bulkhead 8. When planking the hull it is absolutely vital that each strake follows a fair and even curve, otherwise the visual impact will be spoilt.

The butts of each strake are shown on drawing **A** of Sheet 2, and the length of each plank according to the Regulations as laid down at that time should be not less than 18 feet and not more than 60 feet; there should be not less than four strakes of planking between any two butts or scarphs landing on the same frame.

Drawings **A** and **C** on Sheet 2 show the landing of the strakes in the rabbets of the stem, the sternpost and the wing transom, and the marks should be transferred to the hull block using the same method as for the frames. Depending on the number of strakes and their dimensions, a stock of 2mm thick pear strips should now be prepared, making generous allowance both in quantity and in length.

The first strakes to be laid are the two strakes corresponding to the wale, which are 3mm thick; these are only laid temporarily at this stage (they will be replaced when the whole hull is complete), and they allow one to judge whether or not the line of deck is true; they should have a fair curve over the whole length of the hull.

The planking of the hull proper starts with the garboard strake which is the one which lands in the rabbet of the keel. The planks are glued in place using PVA adhesive, and all the time that they are drying they should be firmly secured in place with noticeable pins. In order to bend the planks they should first be dampened and then held close to a source of heat such as a soldering iron or a domestic iron (plank bending machines can also be bought from good model shops, but they are relatively expensive). The bend is particularly pronounced for the planks bordering the wing transom. Once the hull has been planked it can be smoothed (starting with a file and then moving on to sandpaper, first coarse then fine, followed by wet-and-dry paper. A polish can be obtained by scraping with a shard of glass. The final polish is obtained with a pad of steel wool.

At this stage the hull should be left to dry for a few days, and then removed from the building board. The tabs on the bulkheads should then be cut off.

Planking the deck. The drawings of the frames show the run of the deck, and the forward or after faces also show the cam with a dotted line. Cut carefully along these lines and then use

batten again to check that the upper surface of all the frames presents a fair run, with the batten touching each frame evenly. Draw out on a sheet of 1 mm plywood an *under deck*, traced from plan D on Sheet 2. Mark in the positions of all the deck fittings, the hatchways and other openings, etc. Then cut out the shape as accurately as possible, taking particular care with the openings, especially the holes for the rail-stanchions. The under deck is stuck down with PVA adhesive, and it is held in place while it is drying by means of elastic bands and weights.

The planking of the deck is done in the same way as for the hull, the planks being first marked out on a sheet of pearwood veneer. They are then cut out with a scalpel, having first stuck broad adhesive tape of the type used for packaging to the reverse side of the veneer; this is to stop it splitting. Take care also not to press too hard with the scalpel, since the blades are very brittle and can fly all over the place if they should snap.

Counter and taffarel. This is the most delicate part of the model to complete, but in fact it demands relatively little work by comparison with what has already been achieved, so that if anything should go wrong it is easy to start again, whereas a mistake on the hull is final.

The method used is that of "wood moulding". With the help of a half-round file a block of a soft wood such as lime (bass) or poplar is hollowed out until it matches the drawings. This is the mould, and it is the shape of the counter. A piece of double-sided tape is then stuck to the block, and the outer layer of planking is laid. Next a second layer of strips is laid over the top at an angle of 45 degrees. This is followed by a third layer laid in the opposite direction. The final stage is to lay the inner planking of the stern. The whole assembly should by now be 3 mm thick. **Note:** allow each layer to dry for at least 24 hours before applying the next. Next unstick the counter from the mould and follow the same process for the taffarel. The two parts should then be glued together, and the whole assembly is then glued to the model.

At this stage the two temporary upper strakes of hull planking corresponding to the wale should be removed and replaced with the wales, which might otherwise have suffered with all the handling of the hull. The rail-stanchions can now be inserted, a relatively simple job thanks to the holes already cut in the under deck. The planking of the deck is then completed, taking care with the outside plank to follow the overhang and reduction in thickness as indicated on drawing E, Sheet 3.

FITTINGS. No particular method can be recommended for this part of the model. It requires a perfect understanding of the drawings, meticulous attention in following even the smallest detail, and a great deal of care. In order to make the two carronades a lathe will be required, but try to persuade a friend with one to help you! The anchors can be made either of wood or metal.

The boat may well present some difficulties. The frames must be cut out leaving temporary tabs on them. Then cut out the keel, stem and transom. Assemble all these parts and glue them to a small building-board with spots of glue on the tabs. This assembly "on stilts" demands skill, but the lessons learned while building the hull should stand you in good stead. The marks indicating the position of the planks were pencilled in on the frames after they were cut out, although it is only necessary to do this on every other frame. The width of each plank is measured out, starting with the garboard strake next to the keel. An extremely flexible ruler is then laid over the frames as close as possible to the keel but without forcing, and

it is held in place with clothes pegs. A strip of paper is then spot-glued to the ruler at the intersection of each frame, in order to show the width of the plank. The ruler is then removed and laid flat on a sheet of pearwood veneer so as to show the way the curve of the strake develops. Note that there is no question of hoping that the planks can be formed from straight strips of wood.

CARVINGS. These can be made from boxwood or from pear. In order to hold such a small piece of wood as is required for example for the snake at the head, it should (after being roughly cut to shape) be fastened to a wooden base with double-sided tape. Be careful that the tape does not come unstuck when exerting pressure on the carving, since it is extremely fragile at this stage. The carvings should be done with a scalpel, or with a mini-drill and small burrs (ask your dentist!). But you can also grind minute chisels from needles.

FINISH. The hull can be left as it is, or it can be treated with lacquer or waxed; however, be careful that there are no splashes of glue left on the hull, which will reappear under the finish. Give it a last polish with 000 grade steel wool. A good result can be obtained using an indoor/outdoor wood stain (xylophene), which soaks well into the wood.

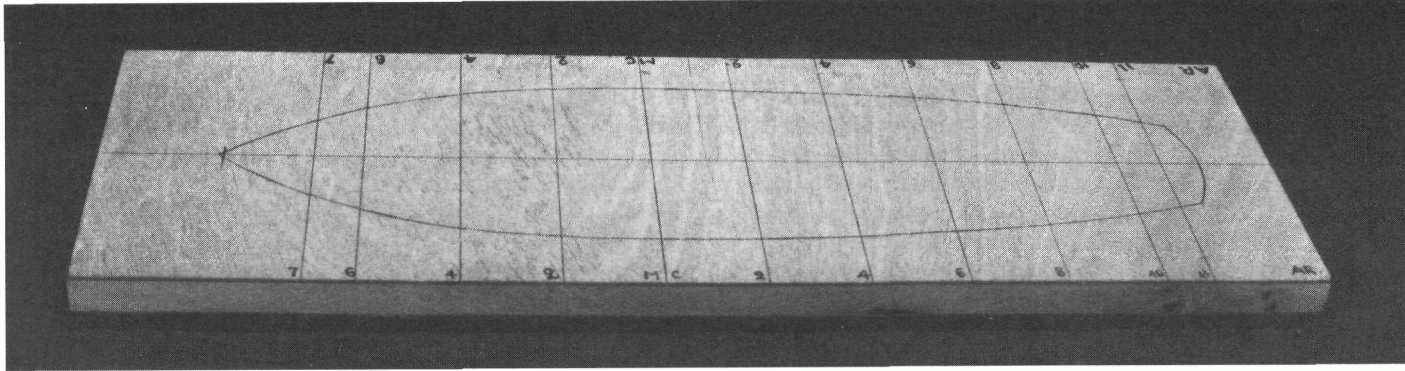
Alternatively the hull can be painted, following the guide on page 47, but it is a pity to cover up the beauty of the natural wood with paint, which does not enhance its appearance.

RIGGING. As we stated for the fittings, there is no "trick of the trade" for rigging, but by all means consult one of the excellent books on the techniques of modelmaking. Making the masts and spars will call for the use of a lathe, so warn your friend! Beginners however might well be better advised to concentrate on making an absolutely perfect hull, with just stumps in place of the masts. There are numerous contemporary models in maritime museums which were made like this, so the practice is sanctioned by tradition.

The model should be displayed on as light a stand as possible in order not to obscure the delicate lines of the hull. A good trick is to drill two holes in the keel prior to assembly, and glue two nuts on the inside with cyanoacrylate. You can then insert two threaded pillars when the model is complete. But whatever the solution you adopt, do try to avoid cradles, especially those made of plexiglass, which does not harmonise with the wood.

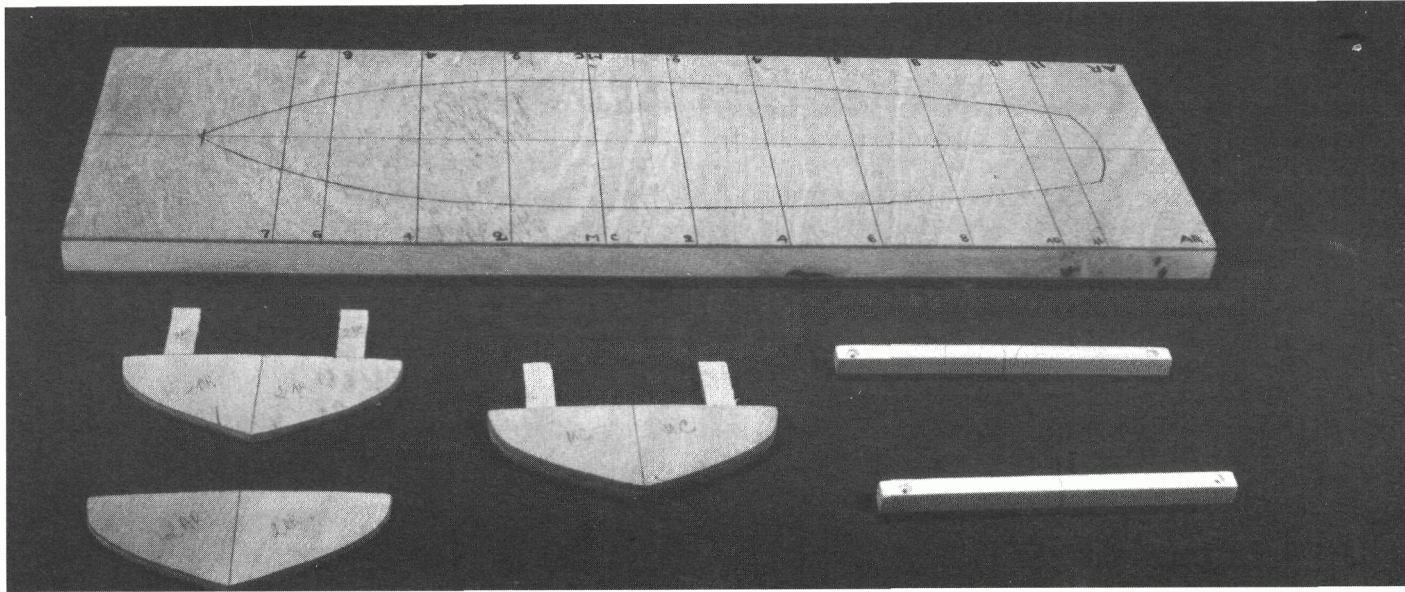
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The building-board. It must be perfectly flat and the corners must be square. Marked on the board are the longitudinal axis of the keel, the joint-lines of the frames, and the outline of the deck.

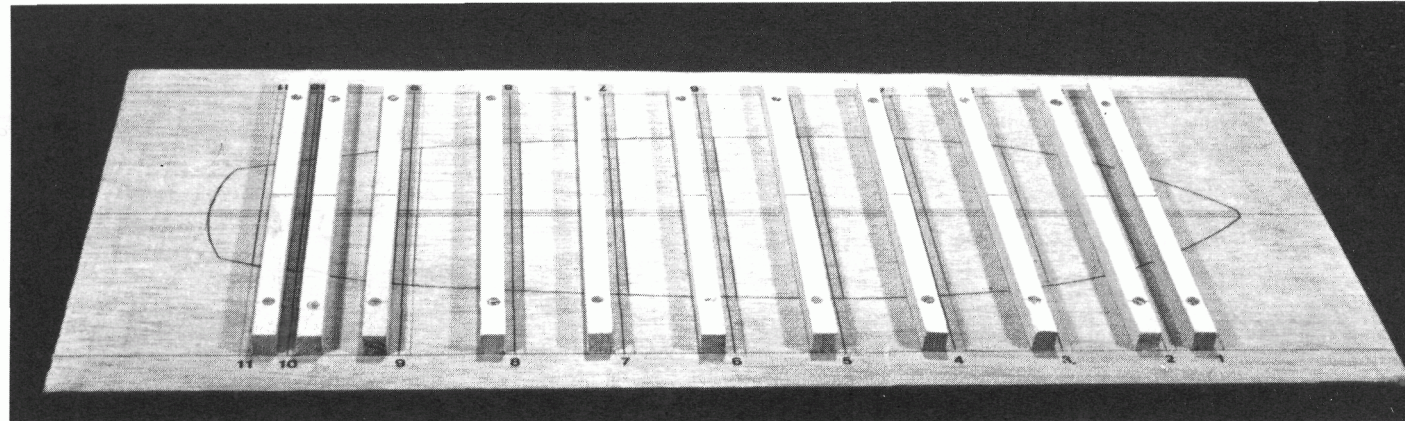
It is a good idea to screw two 50×25 mm strips of wood to the bottom of the board, running transversely: this stiffens the board and also makes it easier to lift it up to move it about.

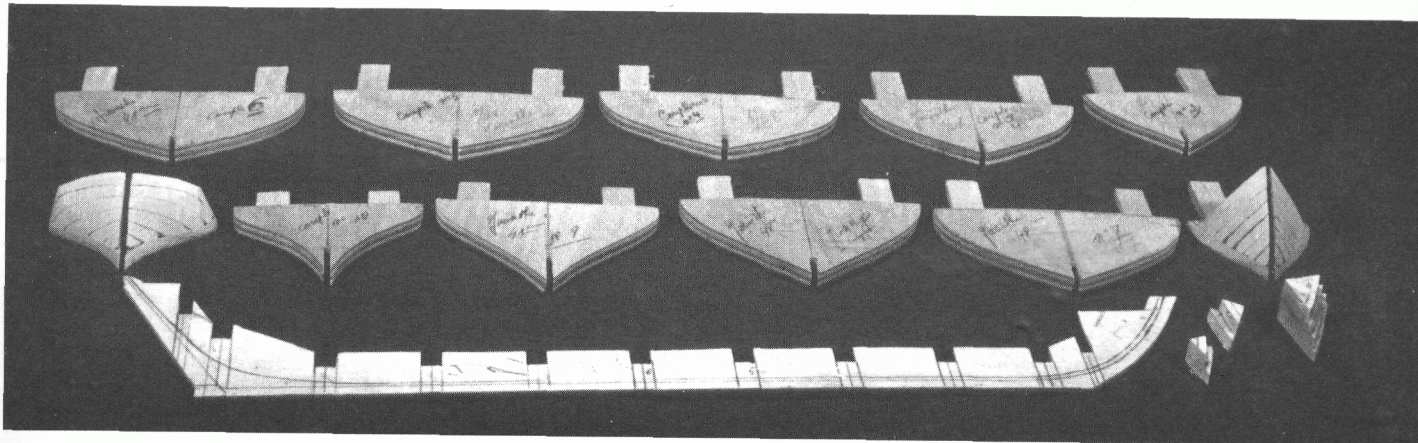


The wooden strips have been screwed onto the building-board, leaving a space 4mm wide between each strip and the joint-line of the frame, so that they align with the after face of each. It will be obvious how important it is that the transverse lines drawn on the board be perfectly straight and perpendicular to the line of the keel.

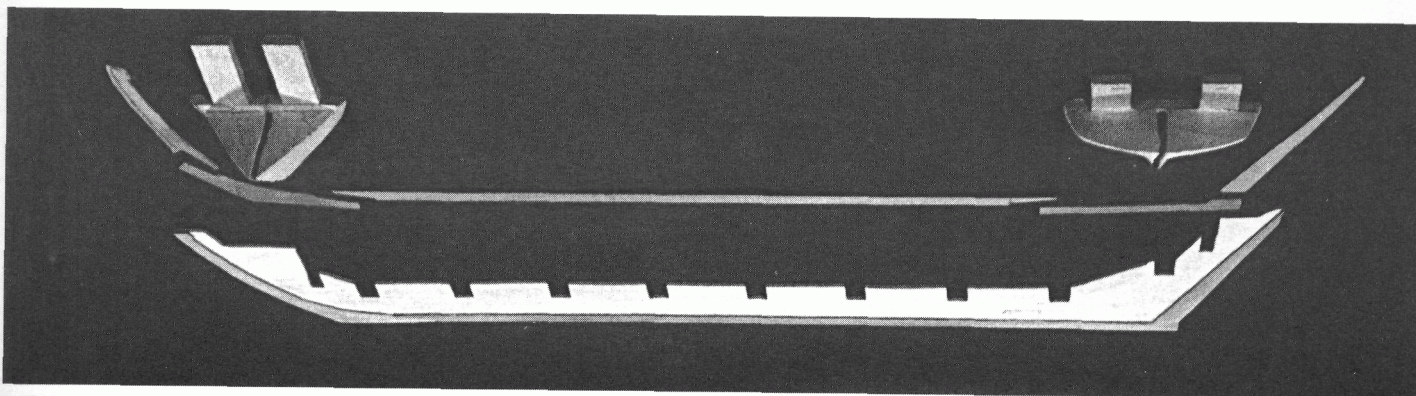


In the foreground on the left can be seen two pieces cut from 4mm plywood; the upper one has two lugs. On the right, the two pieces have been glued together to form one frame bulkhead. Next to it are two lengths of 8mm strip for securing the bulkheads to the building-board.



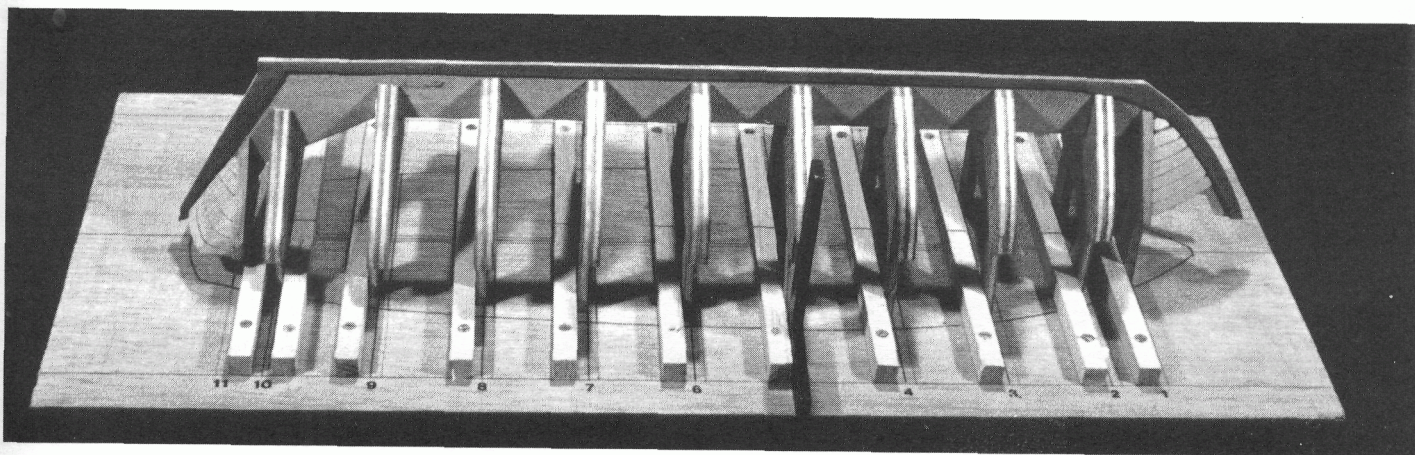


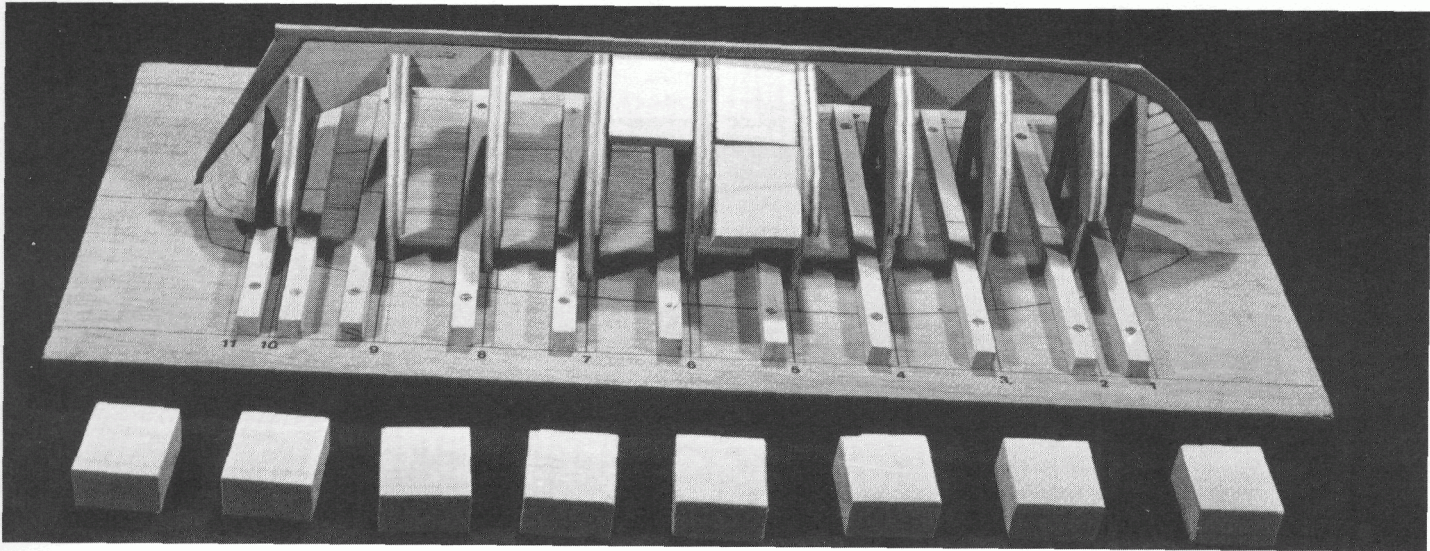
All the frame bulkheads assembled, complete with lugs and with the notch cut in their heel for the keel. Below them can be seen the stem-keel-sternpost assembly, into which corresponding notches have been cut to receive the frames. The outline of the rabbet can be seen drawn in pencil. To left and right can be seen the bow and stern blocks, made "bread-and-butter" fashion; in fact they are half-blocks, each block being assembled in two parts.




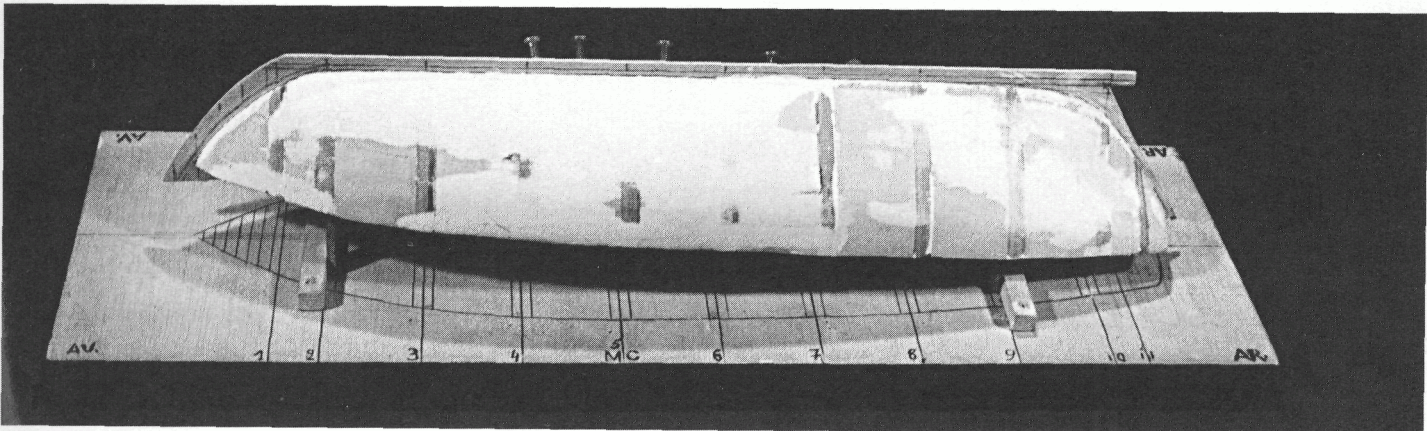
Here the half-blocks have been glued to the bow and stern bulkheads. Below them can be seen the pieces of veneer cut out to clad the visible part of the keel assembly. At the bottom of the picture the veneer has been stuck to the stem, keel and sternpost, leaving the "rabbet" showing as a dark line.


The frame bulkheads have been screwed to the forward face (except for No 10, which is screwed to the after face) of the wooden strips screwed to the base-board. The keel assembly is then slipped into the notches and the bow and stern blocks attached. The engineer's steel square is being used to check that the outline of the deck corresponds exactly to the positions of the bulkheads: this must be done with extreme care, and checked several times before the glue is dry. The bulkheads must be perfectly square to the keel and perpendicular to the board.



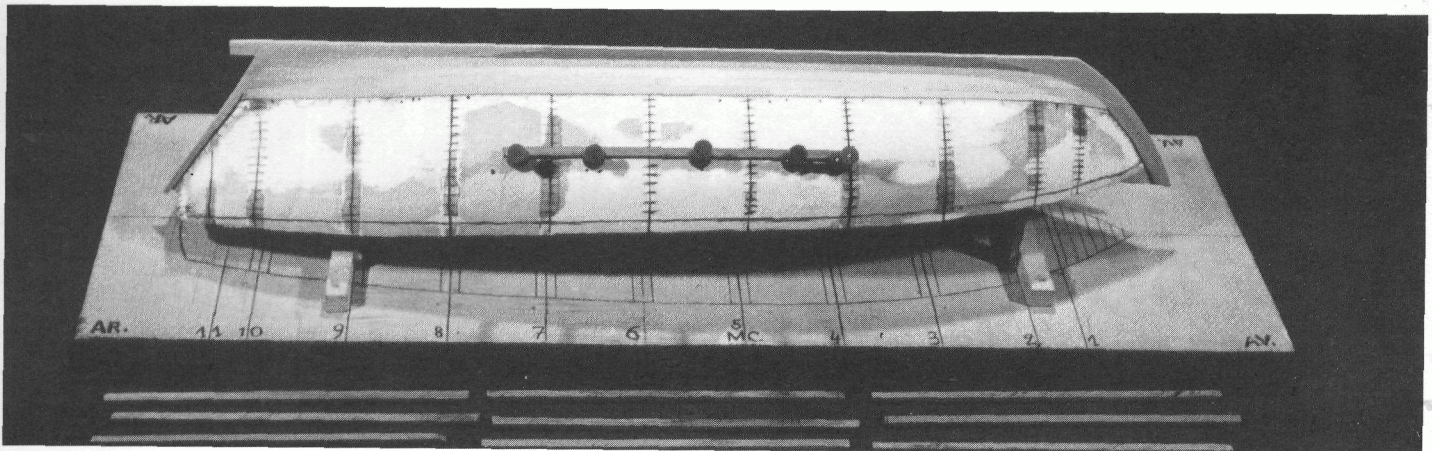


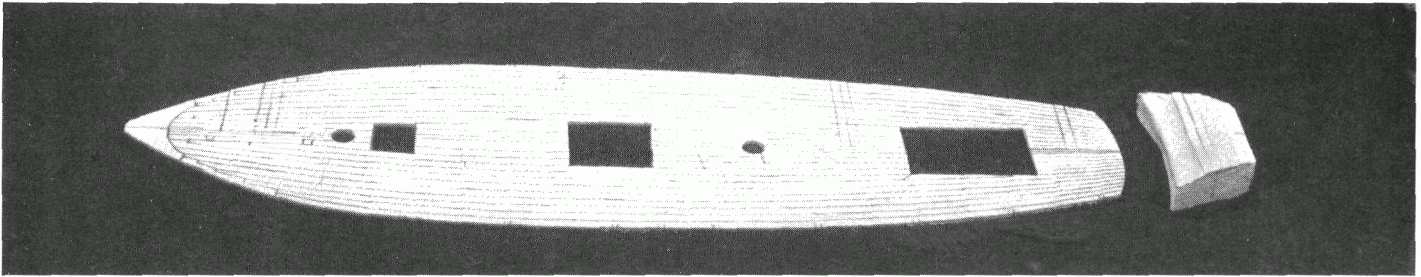
 Insertion of the filling blocks between the bulkheads. The grain of the timber should run longitudinally (fore-and-aft). Use any soft wood (lime/bass, poplar, even pine), but not balsa.



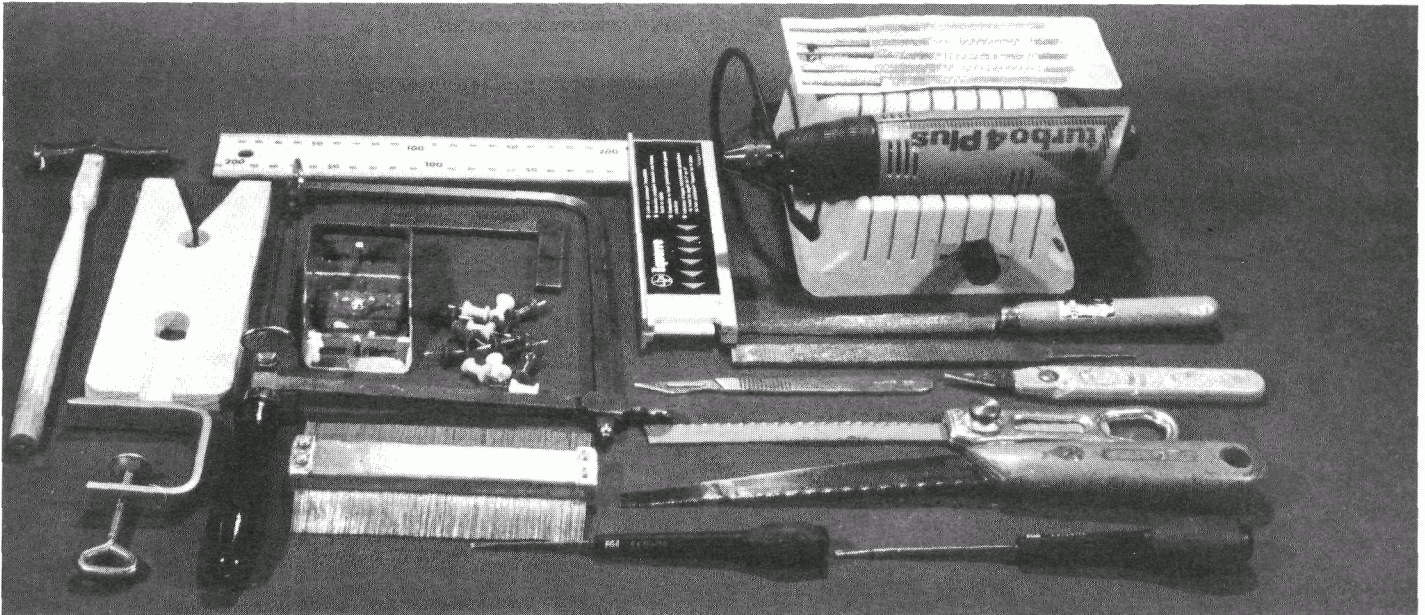
 The hull must be perfectly smooth and even, with no bumps or hollows between the frames. Use a flexible wooden batten to check for evenness, laying it over the hull in several directions. Any slight hollows can be corrected with filler.

The position of each bulkhead has been drawn in on the finished hull block, with little lines indicating the run of the planking at each, the lines being taken off the drawings. Take care with the three stealers which do not land on the stem, and with the extra strake at the stern. The planks are held in place with plastic-headed noticeboard pins while the glue is drying.





The under deck, marked out with all the details in the plan: hatchways and other openings, the run of the deck-planking, the positions of the rail-stanchions. To the right is a partly hollowed-out block which will be used to "mould" the counter and the taffarel.



All the tools used to build the model. Note the profile gauge.

* Photographs by Mr. Soucard.

TOOLS

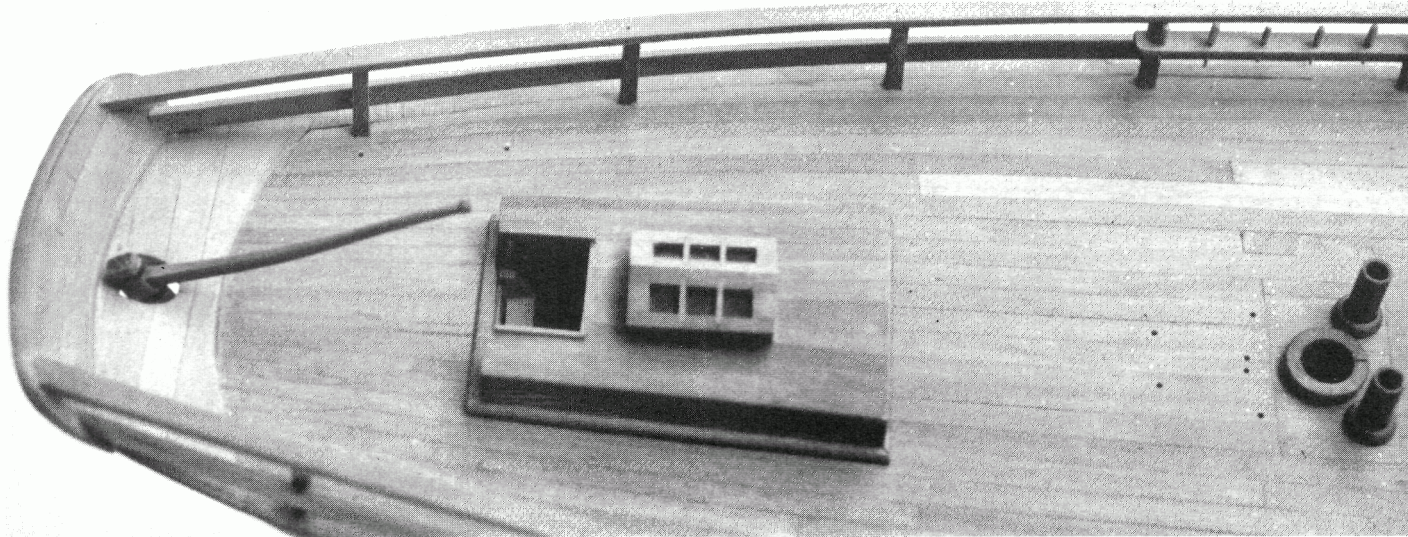
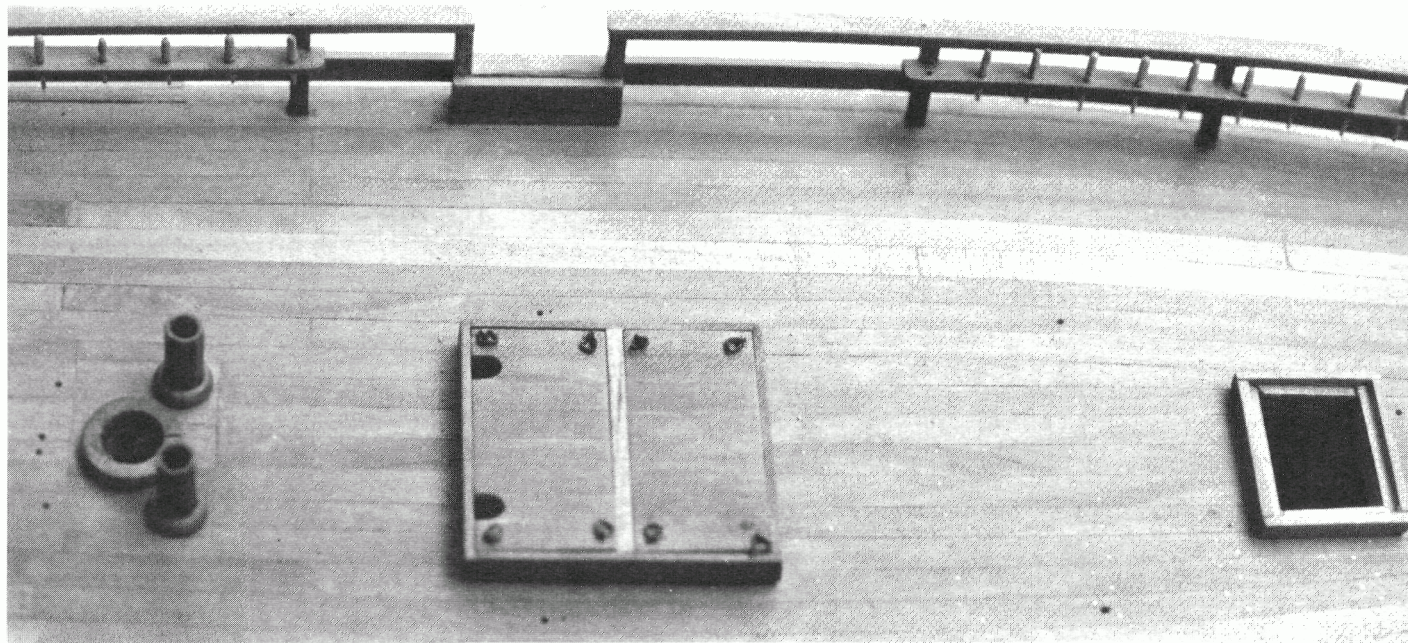
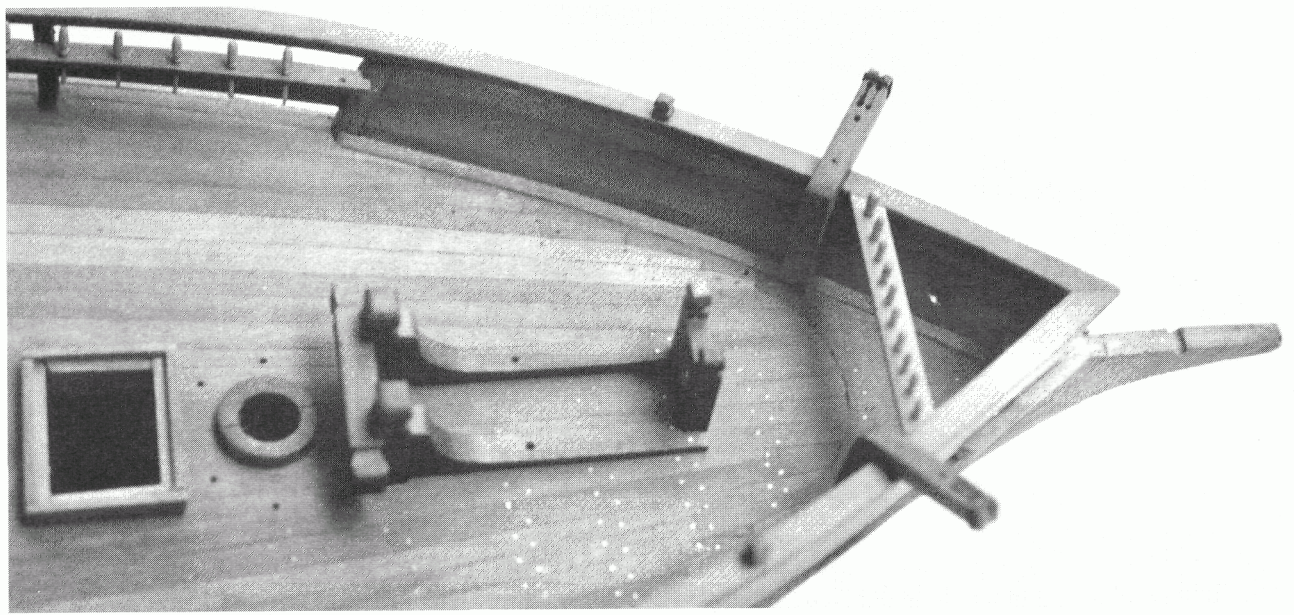
Nowadays there is a bewildering choice of specialist tools available to the modelmaker, and it is up to you to decide what you need, and what you can afford! However, the following can be regarded as a basic minimum for building *la Jacinthe*.

- 1 small hammer; 1 small saw; screwdrivers; 1 small filling knife
- drawing box (ruler, compasses, square, French curve)
- 1 engineer's steel square
- 1 fret-saw and blades
- 1 keyhole saw
- some plastic clothes pegs
- 1 scalpel
- 1 Stanley knife
- 1 set of needle-files
- 1 wood rasp (100 or 150)
- 1 file (100 or 150 bastard-cut)
- 1 profile gauge
- 1 mini-drill, with bits and dental burrs
- some plastic-headed noticeboard pins.

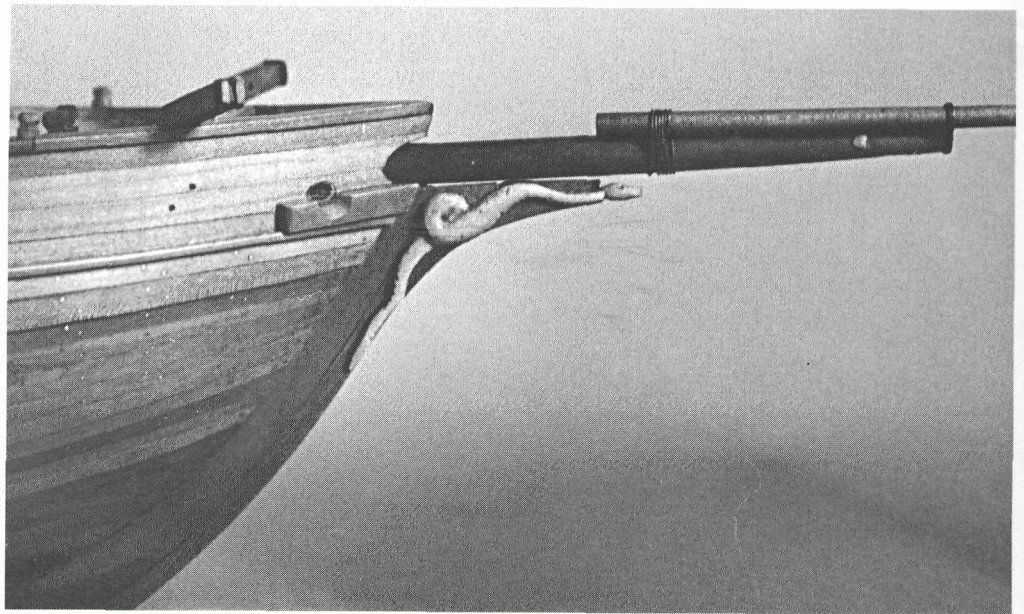
MATERIALS

The best woods to use for an unpainted model are pear or cherry. Box is a traditional material for hull-planking, but is very expensive and not easy to work with. Holly works very well for deck-planking, although we recommend that you cut the planks from a sheet of veneer. Ebony was often used for the wale, but it is rather brittle and very expensive – it is easier to use a lighter wood and stain it black. Model shops will be able to advise you, but avoid any woods which are too soft, or which have a noticeable grain such as obeche, pine, oak etc. Allowing for wastage, you will need about 50 2 mm thick strips (plus 4 3 mm strips for the wale). In addition, you will require:


- a piece of 25 mm blockboard, 50 × 25 cms
- 8 × 8 mm strip, about 2 m.
- 5 mm plywood (very little, frames 1 & 11 only)
- 4 mm plywood (frames): 500 × 500 mm
- 2 mm plywood (keel): 500 × 100 mm
- 1 mm plywood (under deck): 500 × 150 mm
- 5 mm lime/bass or similar (bow & stern blocks)
- a small piece of boxwood for carvings
- a sheet of pear veneer (deck-planking, keel)
- minute quantities of other woods for deck-fittings.




These three photographs show the detailed work of the bulwarks and of the deck. Note the way the planking of the deck is "ribbed" into the waterway at the bow. Careful study of the photographs on these pages will help you to understand the plans and to complete the deck-fittings of your model.

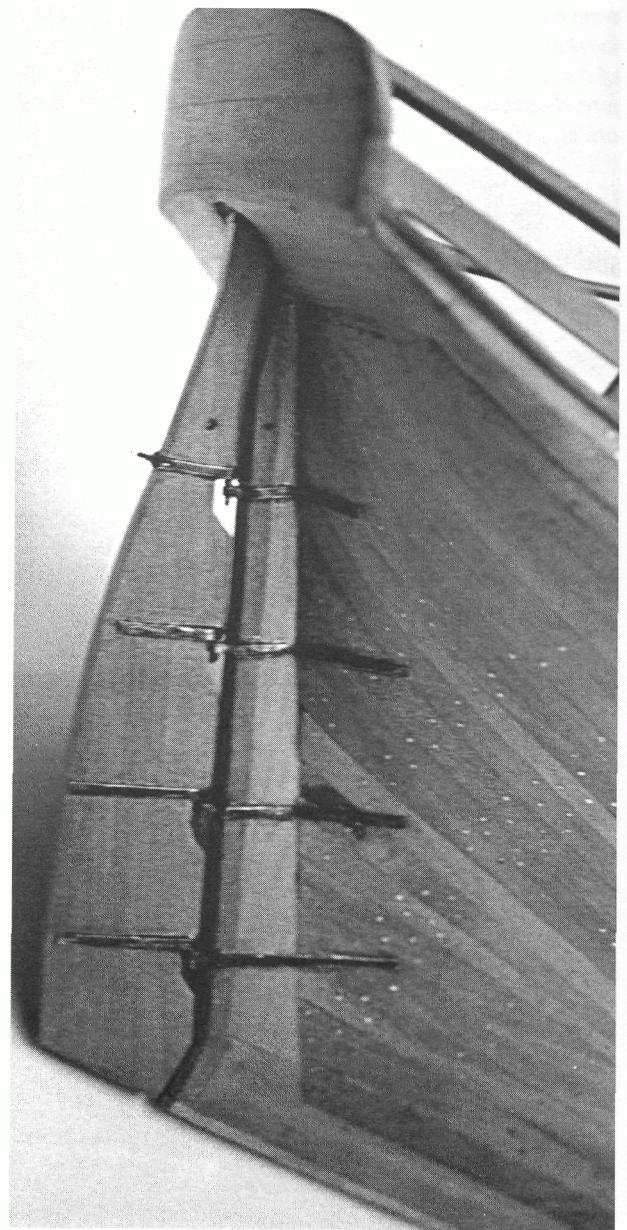


Detail of the stem, with the serpent decorating the head (its scales have yet to be carved in). 

Detail of the rudder with its pintles and braces. The curve of the counter and taffarel can be appreciated, and the helm-port for the passage of the rudder-head. 



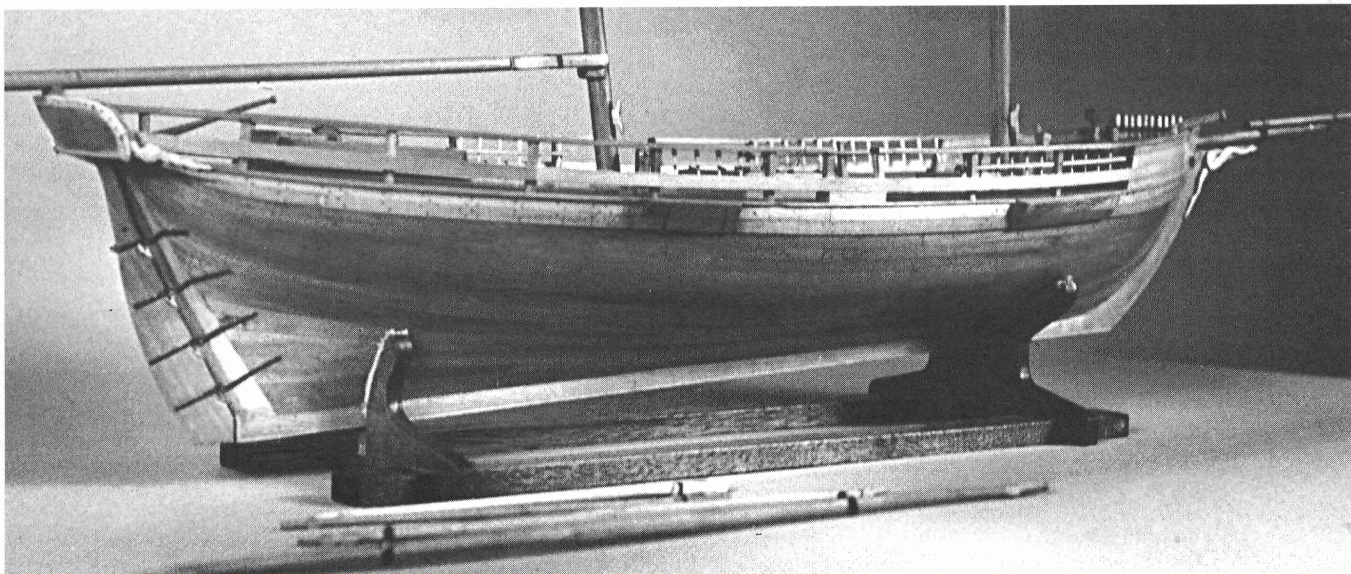
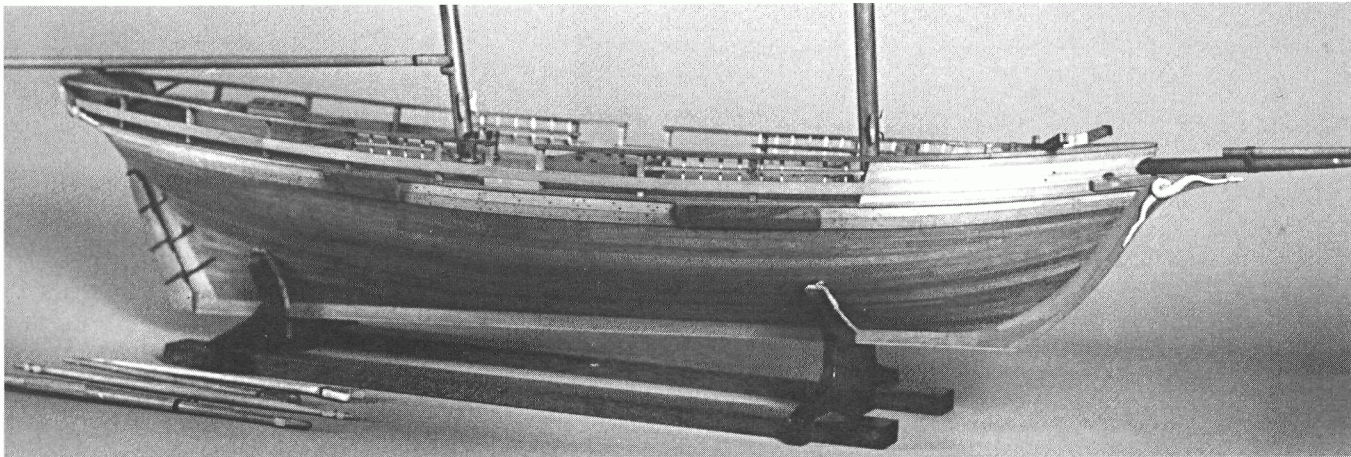
 View of the stern, showing how the planking finishes in the rabbet of the wing transom. The carved surround to the taffarel has been completed, but the scroll bearing the vessel's name has not yet been fastened in place.





Note on this photograph the way the outer strake of deck-planking overhangs the side, with its edge chamfered so that it takes the form of a decorative rail above the wale. The solid bolster forming the fore-channels, and the berthed-up section of bulwarks at the bow, are also clearly visible.

These two overall views of the hull give a good idea of its elegant lines, and also of the quality of workmanship which has gone into this little model.



LA JACINTHE

Plans



Scale of Sheets 1.2.3.4. 1/48 (1/4" = 1ft)
Sheet 5. 1/100

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The Plans

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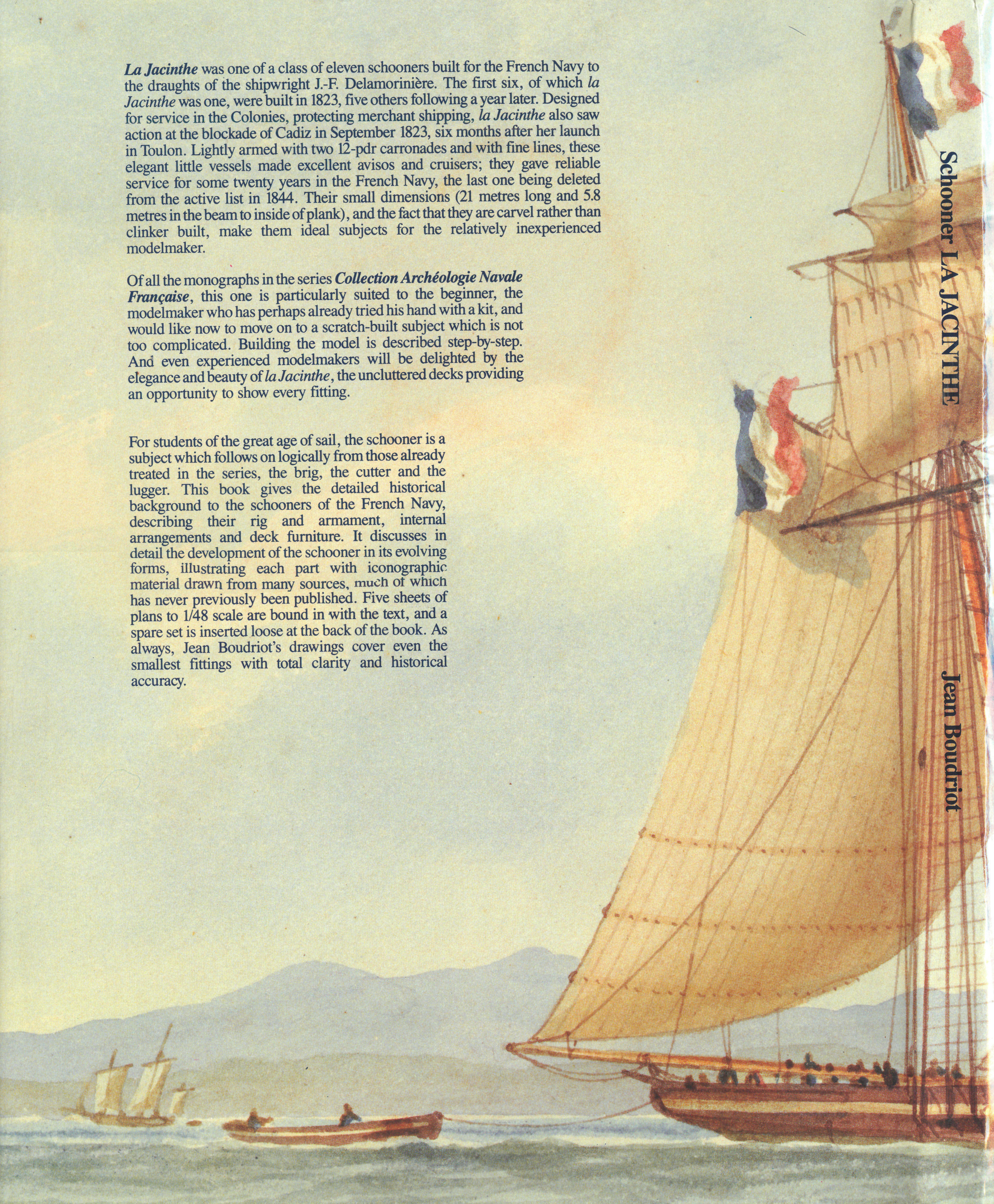
La Jacinthe was one of a class of eleven schooners built for the French Navy to the draughts of the shipwright J.-F. Delamorinière. The first six, of which *la Jacinthe* was one, were built in 1823, five others following a year later. Designed for service in the Colonies, protecting merchant shipping, *la Jacinthe* also saw action at the blockade of Cadiz in September 1823, six months after her launch in Toulon. Lightly armed with two 12-pdr carronades and with fine lines, these elegant little vessels made excellent avisos and cruisers; they gave reliable service for some twenty years in the French Navy, the last one being deleted from the active list in 1844. Their small dimensions (21 metres long and 5.8 metres in the beam to inside of plank), and the fact that they are carvel rather than clinker built, make them ideal subjects for the relatively inexperienced modelmaker.

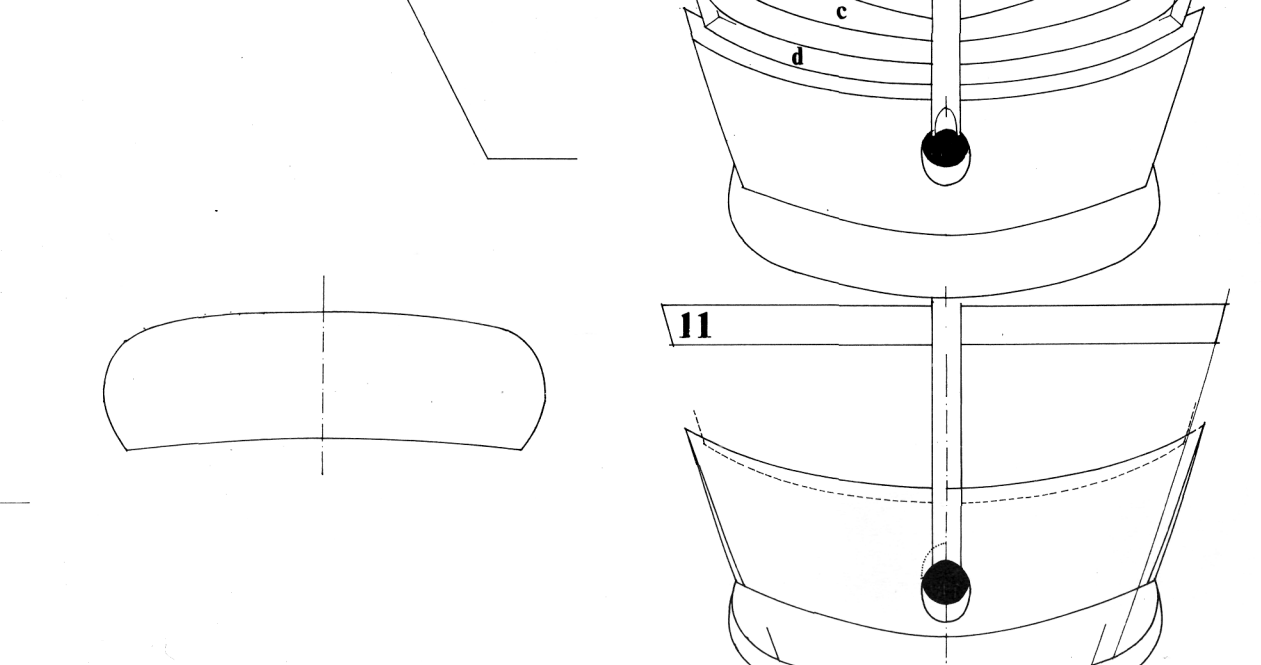
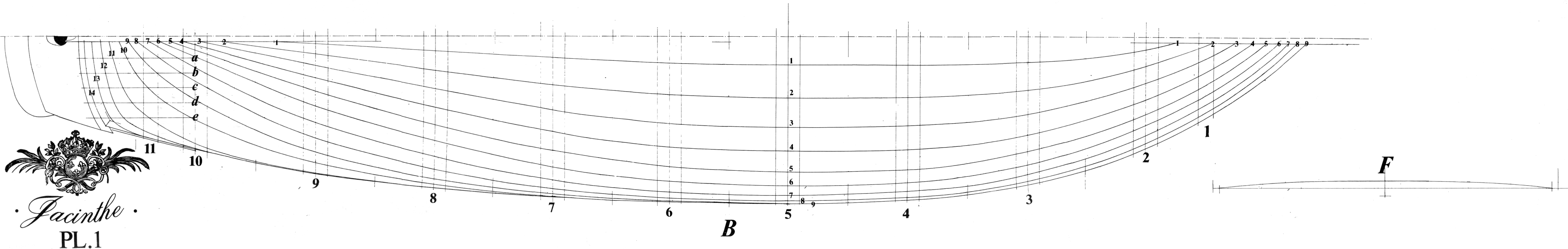
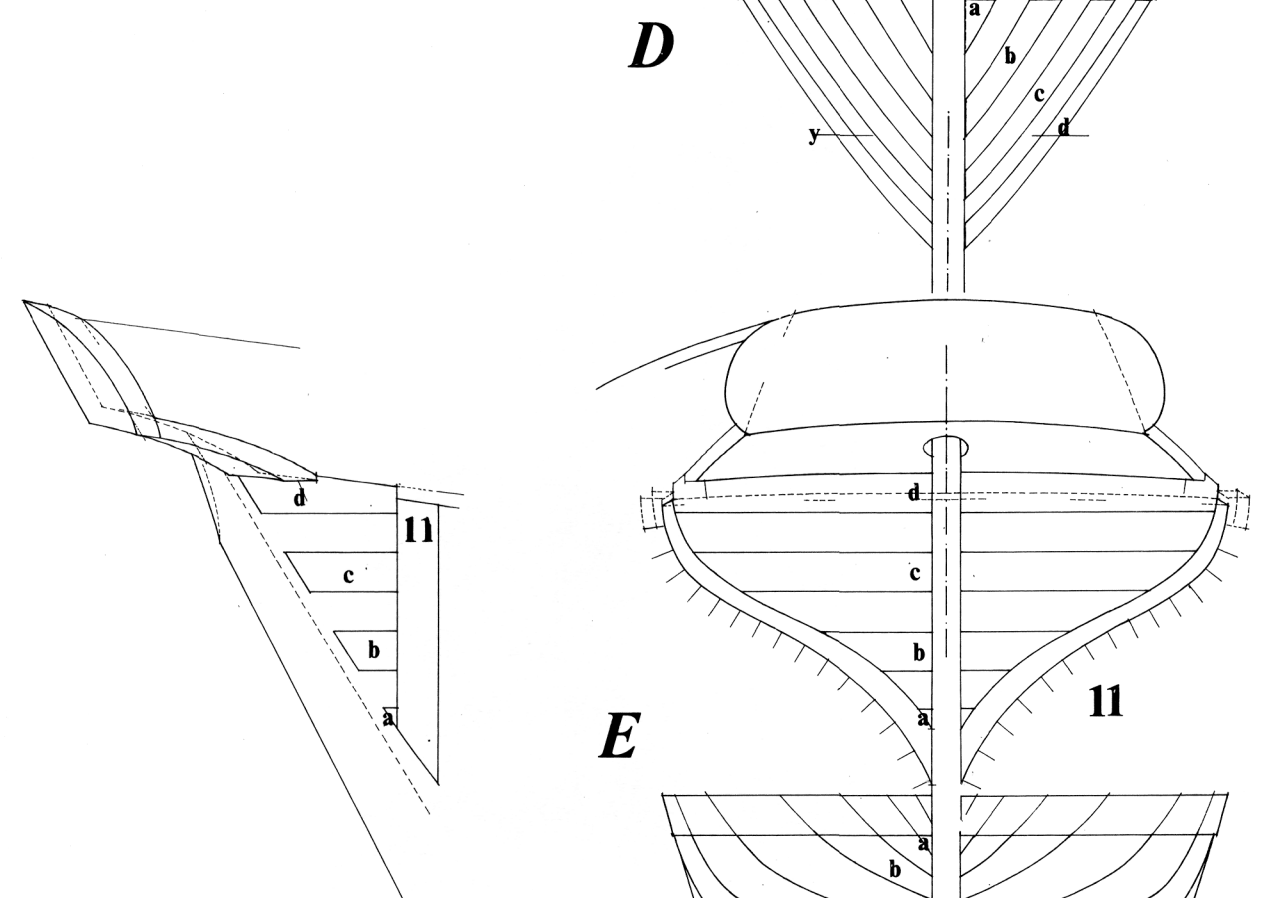
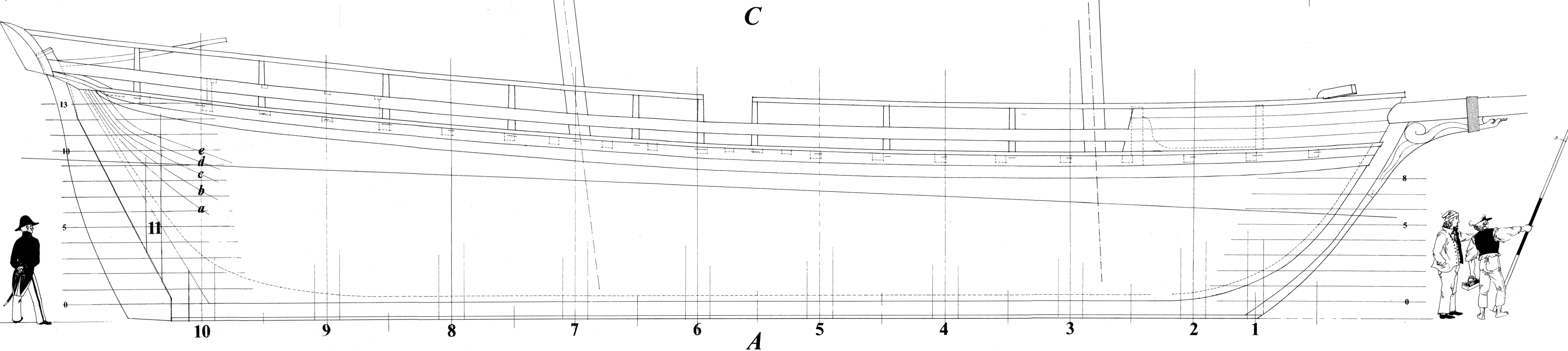
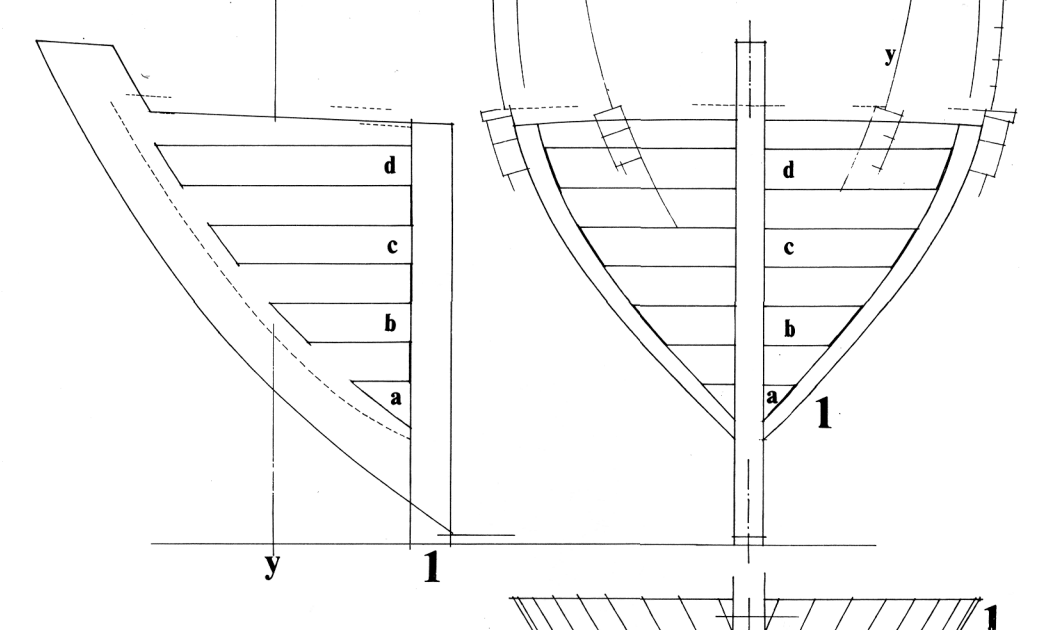
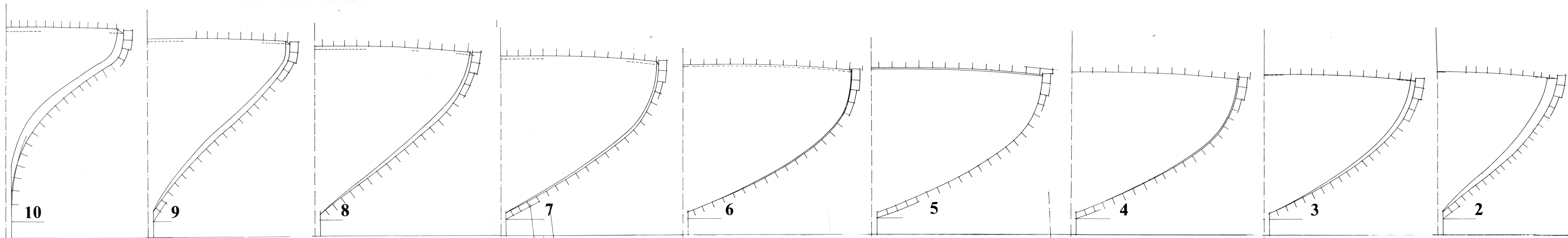
Of all the monographs in the series *Collection Archéologie Navale Française*, this one is particularly suited to the beginner, the modelmaker who has perhaps already tried his hand with a kit, and would like now to move on to a scratch-built subject which is not too complicated. Building the model is described step-by-step. And even experienced modelmakers will be delighted by the elegance and beauty of *la Jacinthe*, the uncluttered decks providing an opportunity to show every fitting.

For students of the great age of sail, the schooner is a subject which follows on logically from those already treated in the series, the brig, the cutter and the lugger. This book gives the detailed historical background to the schooners of the French Navy, describing their rig and armament, internal arrangements and deck furniture. It discusses in detail the development of the schooner in its evolving forms, illustrating each part with iconographic material drawn from many sources, much of which has never previously been published. Five sheets of plans to 1/48 scale are bound in with the text, and a spare set is inserted loose at the back of the book. As always, Jean Boudriot's drawings cover even the smallest fittings with total clarity and historical accuracy.

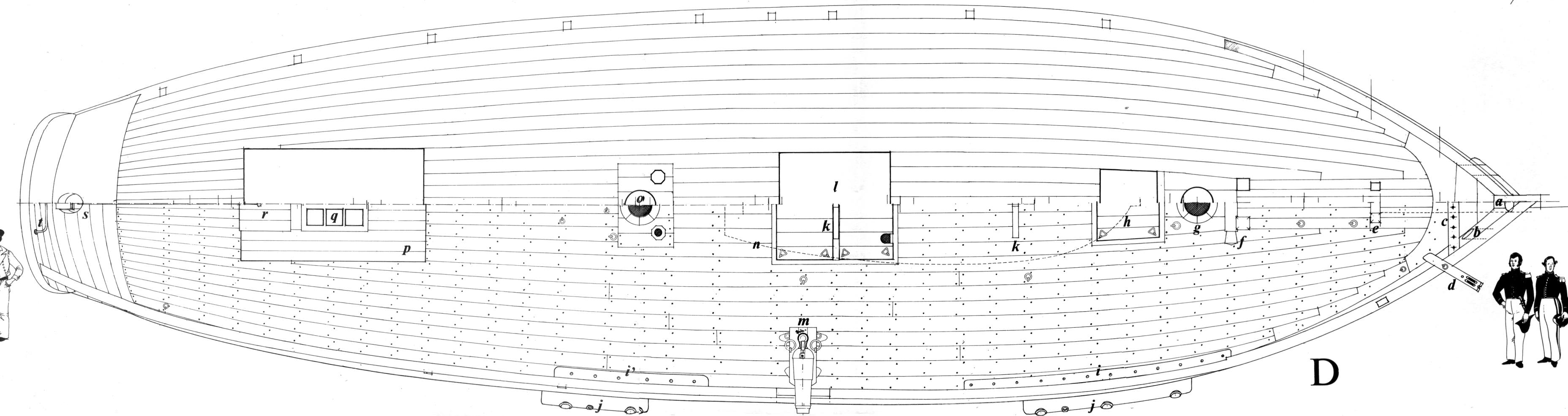
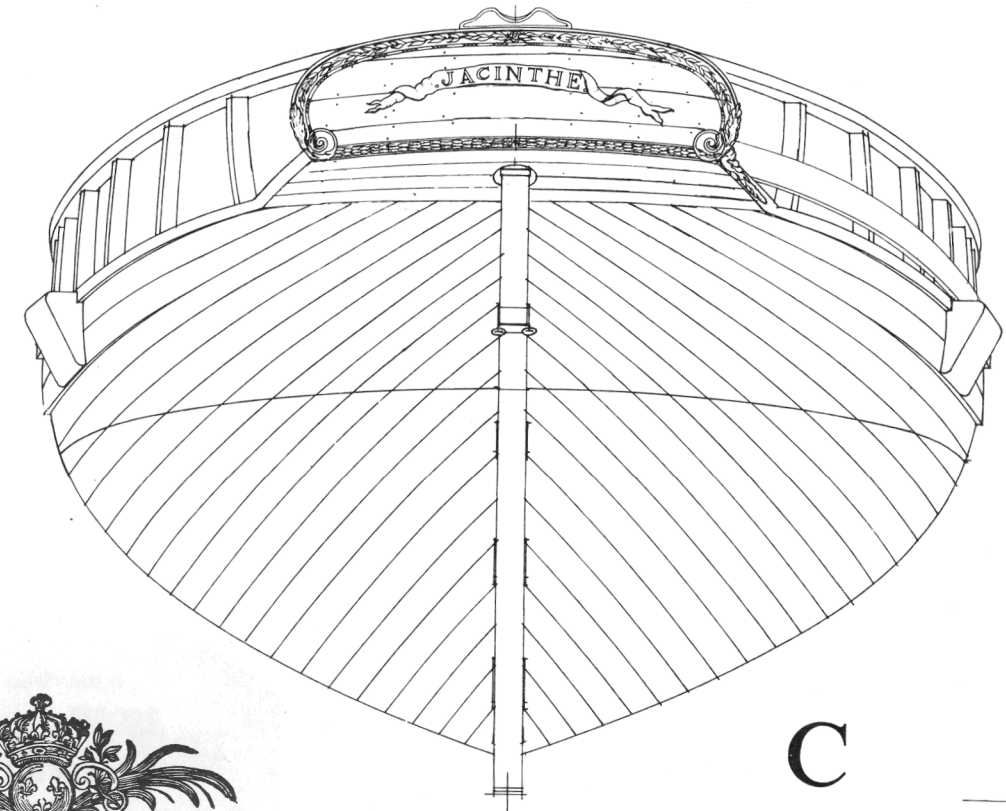
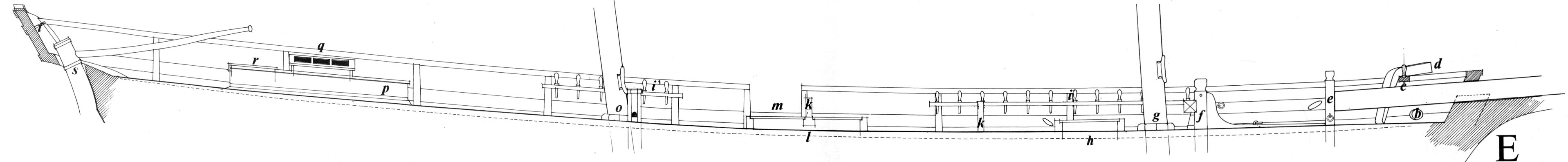
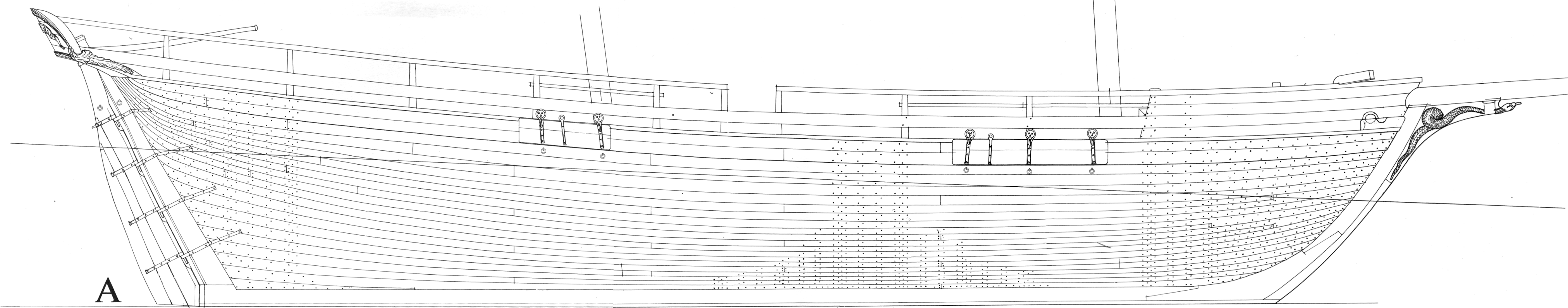
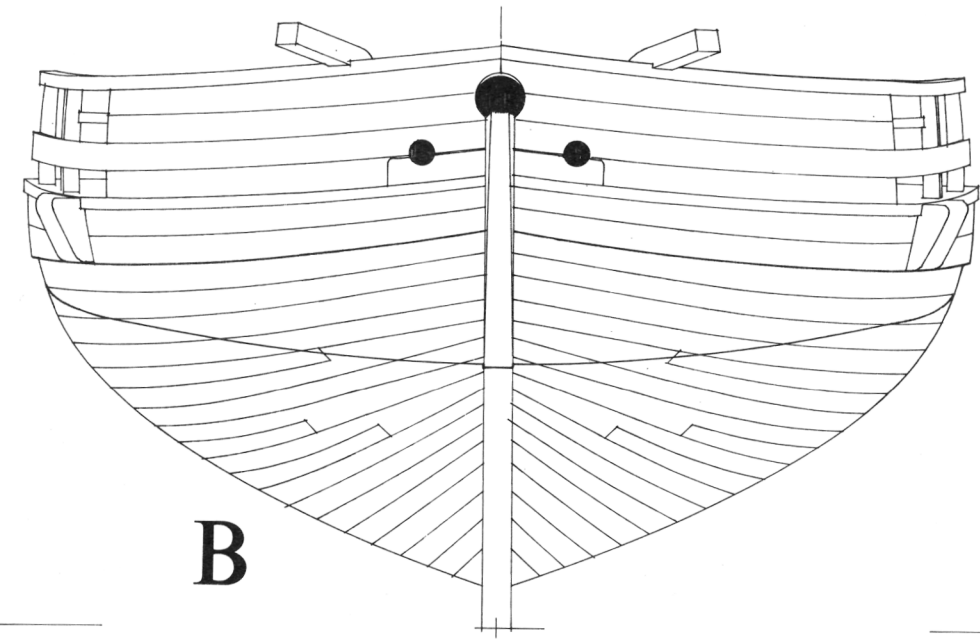
Schooner LA JACINTHE

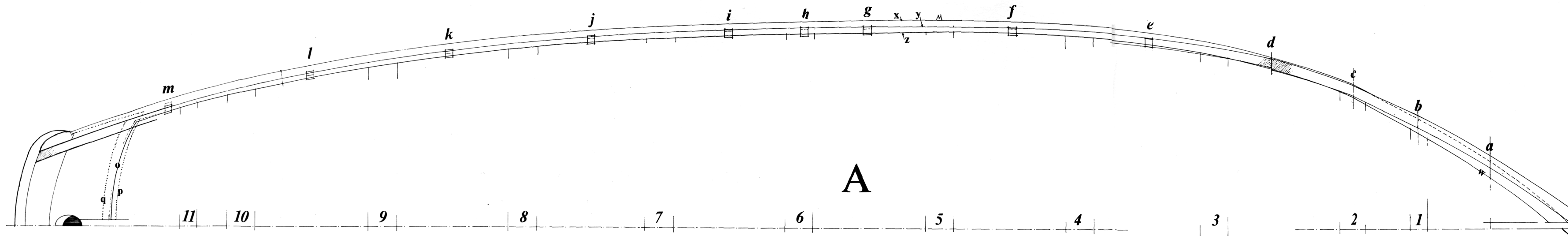
Jean Boudriot






Jacinthe
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