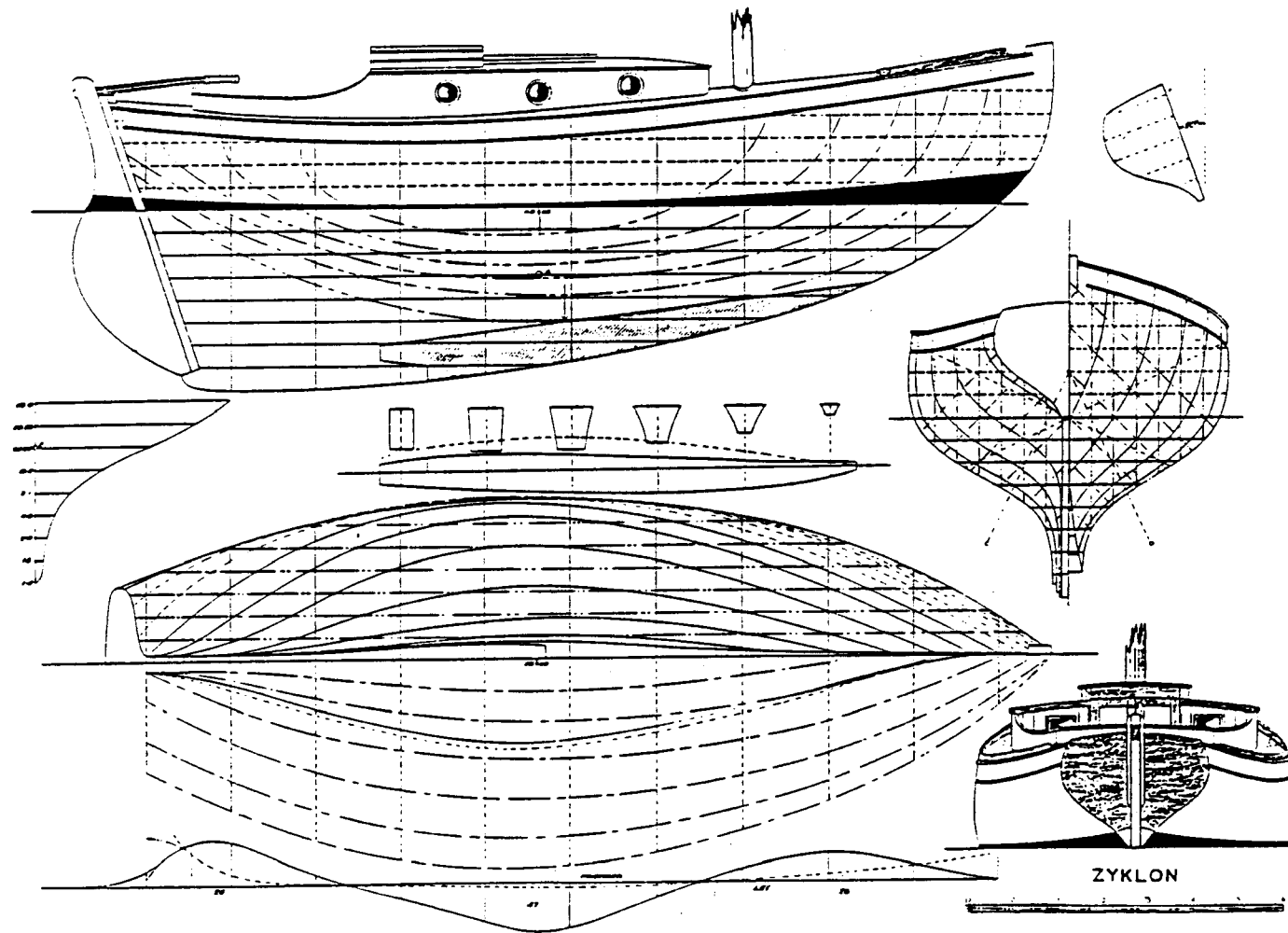


A CATALOGUE OF CRUISING YACHT DESIGNS

by T.HARRISON BUTLER A.I.N.A.



EXPLANATION

When Paul Cowman, our Hon.Editor, and I first discussed a special issue of the newsletter to celebrate both the fiftieth issue and the Millennium we considered the possibility of including a catalogue illustrating all Harrison Butler's designs. This would include both the designs that have been built and those that have remained as drawings.

We soon realized that this idea was too ambitious and impossible to research and publish in the time available. Such a publication would also certainly have bankrupted the H.B.Association!

At a later meeting, this time joined by Joan, our President, it was decided to limit the coverage to those designs of which we were certain examples had been built. It was also agreed that while Paul concentrated on the Newsletter I would take responsibility for this Design Catalogue.

Please note that word catalogue. My dictionary reads: 'Complete list, usually in alphabetical order and often with particulars added.'

Although a history of all the boats built to the various designs, their builders, original and later owners and cruises, would make fascinating reading such a volume is for the future.

The present production intentionally only covers the lines, sail plans, accomodation lay-outs and construction drawings together with some comments from the designer.

It is intended, at a later date, to publish as accurate a list as possible of the names, builders, present owners and the locations of all the yachts built to the designs featured in this catalogue. Also a bibliography of magazine articles and books written about the various yachts and designs

For purposes of comparison all the lines drawings have been printed to the same scale, 1/4 in : 1 ft. Very observant readers may find some small discrepancies. These are because the photocopier used only reduces/enlarges in 1% steps. It is not infinitely variable.

Comparing the lines of two yachts, say 18' and 30' overall, drawn to the same scale, does demonstrate very effectively that volume and not length is the real measure of the size of a vessel.

Scales of 1/8", 3/16" or 1/4" to the foot have been used for other plans and lay-outs as dictated by the space available.

In keeping with the definition of a catalogue the designs are presented in alphabetical order except that the RUSSIA design will be found facing that of LA BONNE and PEPIN facing CYCLONE II 'A'. Only limited information could be located on these designs so they had to share a double page spread.

It would have been impossible to complete this catalogue without the help of our President. As well as supplying the answers to many queries she also sent me copies of various relevant magazine articles. Thank you Joan.

I hope that members will find this production both useful and interesting.

Mark Miller.

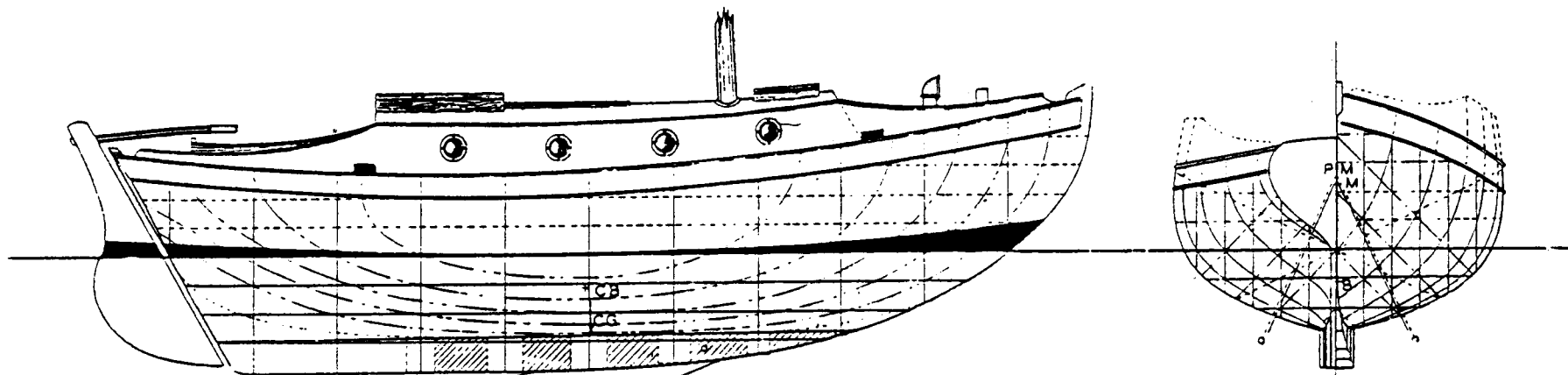
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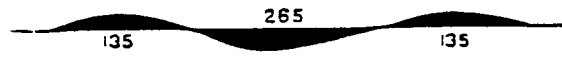
AELLA DESIGN 1944

LOA 23ft.6in. LWL 20ft. Beam 7ft.6in. Draught 2ft.8in./4ft.6in.

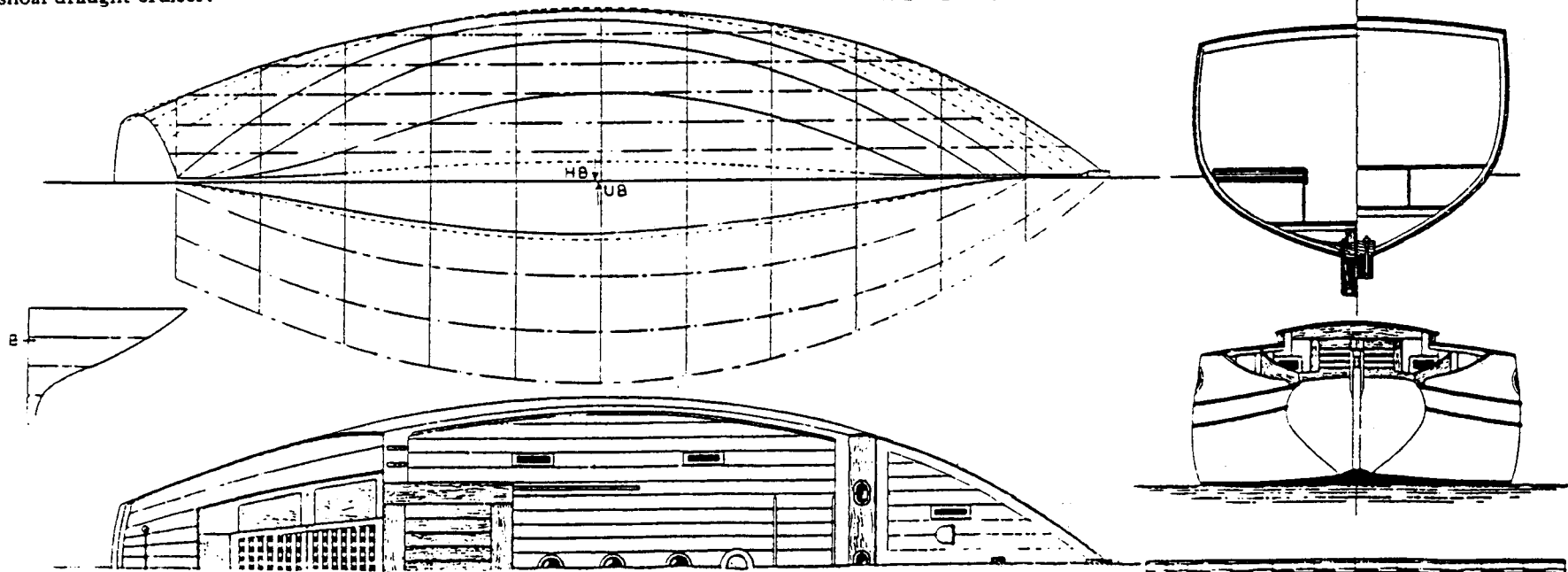
Sail Area 290 sq.ft. Displacement 3.1 tons T.M. 4.8 tons.

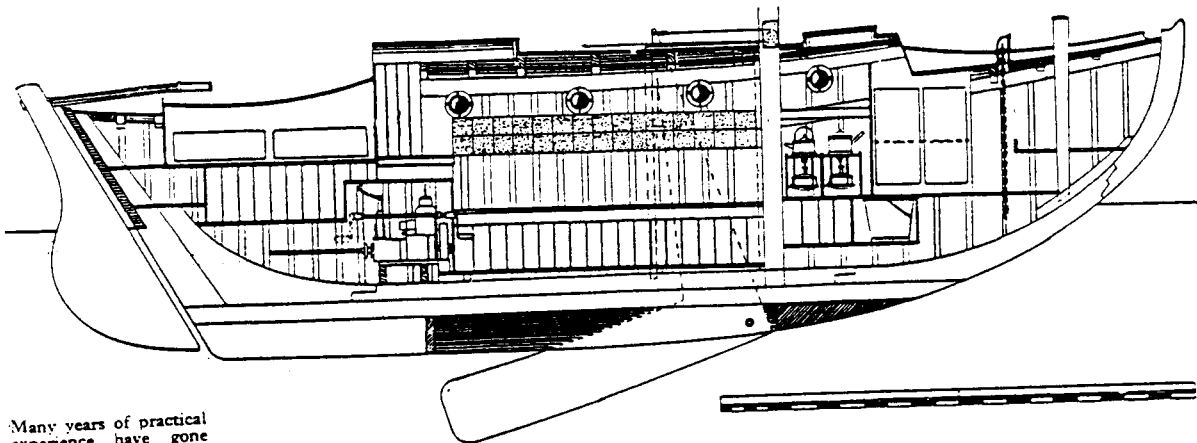


The lines of "AELLA" show a perfectly balanced shoal draught cruiser.

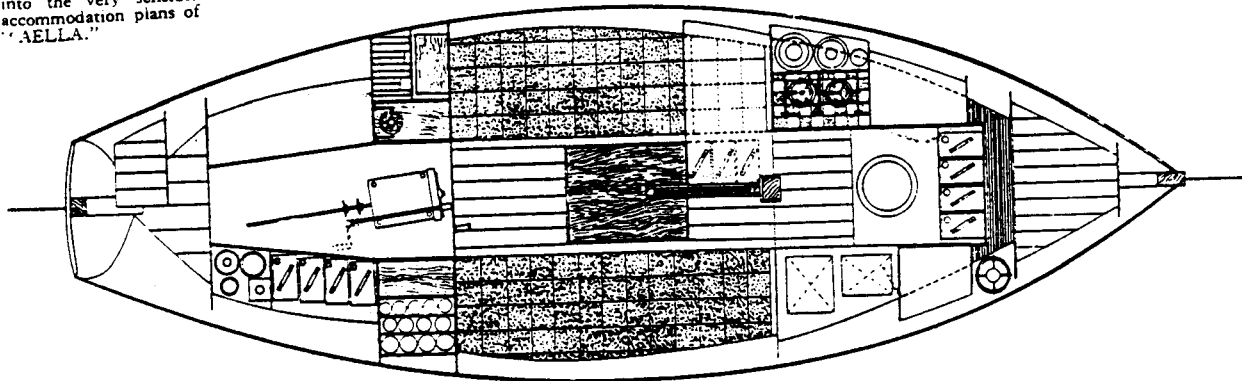


THE METACENTRIC ANALYSIS.





Many years of practical experience have gone into the very sensible accommodation plans of "AELLA."



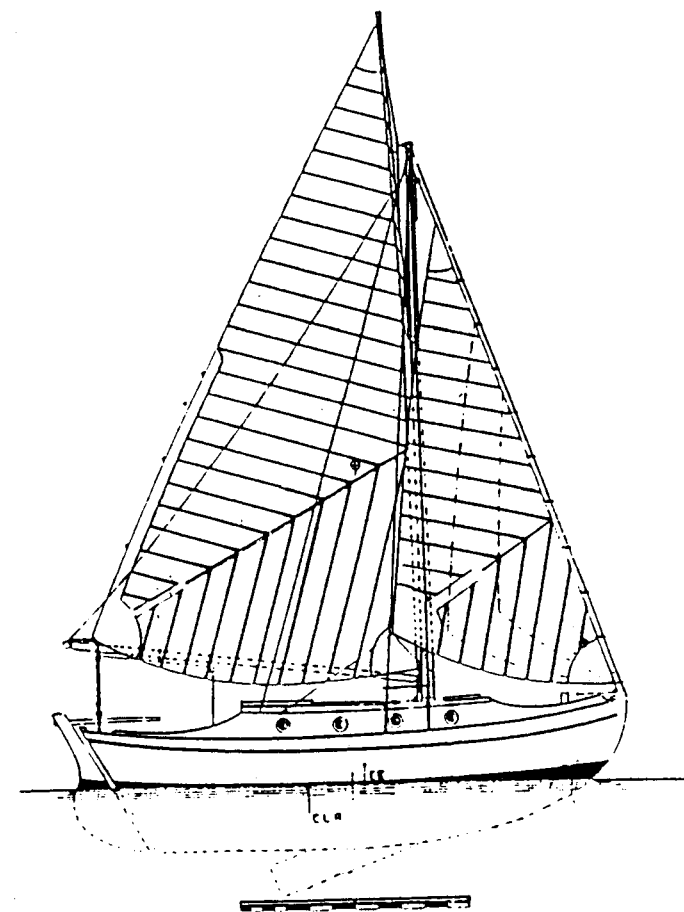
In 1944 T.H.B. was asked to be one of the judges of a design competition in THE YACHTSMAN for a 20ft.LWL centre-boarder. As he had only designed one example of this type, SABOT in 1931, he decided to bring her up to date and balance the hull.AELLA is the result.

He wrote:A comparison of the two designs will show that I have filled out the bow sections and drastically reduced the flare of the quarters. The two transoms are quite different. The V-shape of the new transom is imperative to make the bow sections match the stern sections. In order to make the V-shaped transom look correct I have rolled it in at the top. The result is we have a transom like that of a Thames barge.

A change has been made in the cabin-top in that it has been removed and the topsides built up amid-ships into what I call my 'central turret'. This seems to me to be an excellent plan. By not taking the raised top-side out to the bow, we avoid the devastating appearance of the motor-cruiser, and we keep the freeboard down forward were it causes windage and adds weight in the wrong place.

A yacht of this size loses much of her value if she is not fitted with a lowering mast, and this practically excludes the Bermudian rig. The gunter-lug has much of the efficiency of the Bermudian, but more weight aloft.

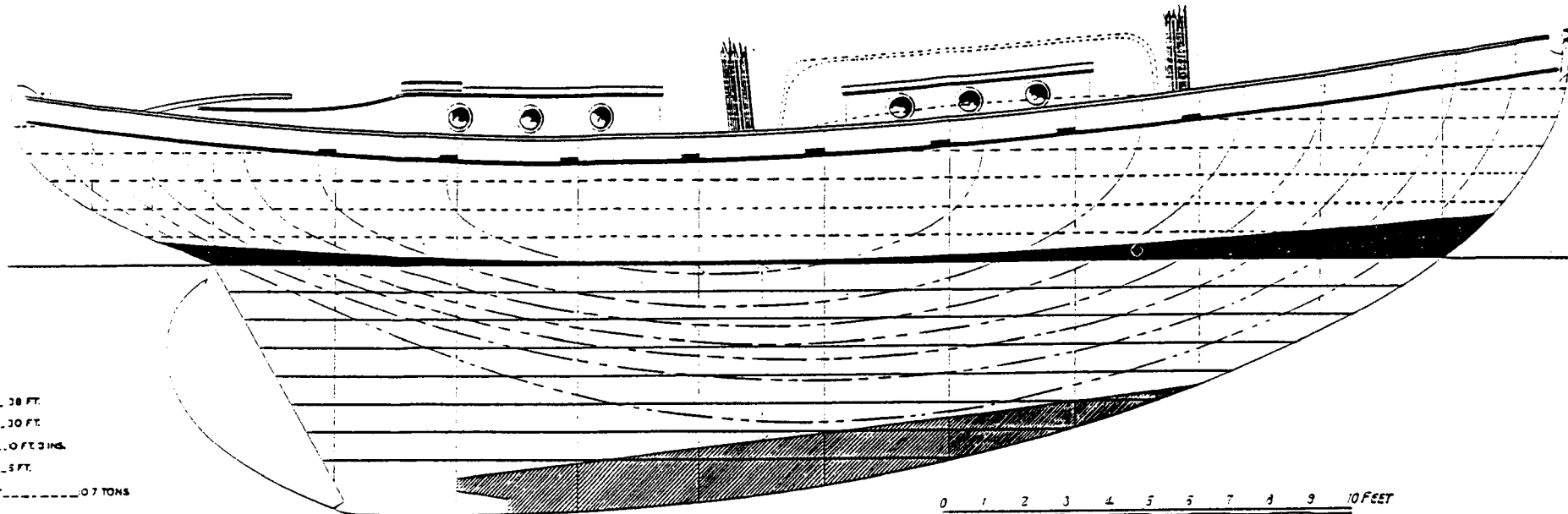
The result of these changes is that we have obtained a balanced ship. the curves of the upright and heeled areas are close together and the metacentric analysis is perfect. If theory is of any value "AELLA" ought to be a docile well balanced yacht.



ARISTENE DESIGN

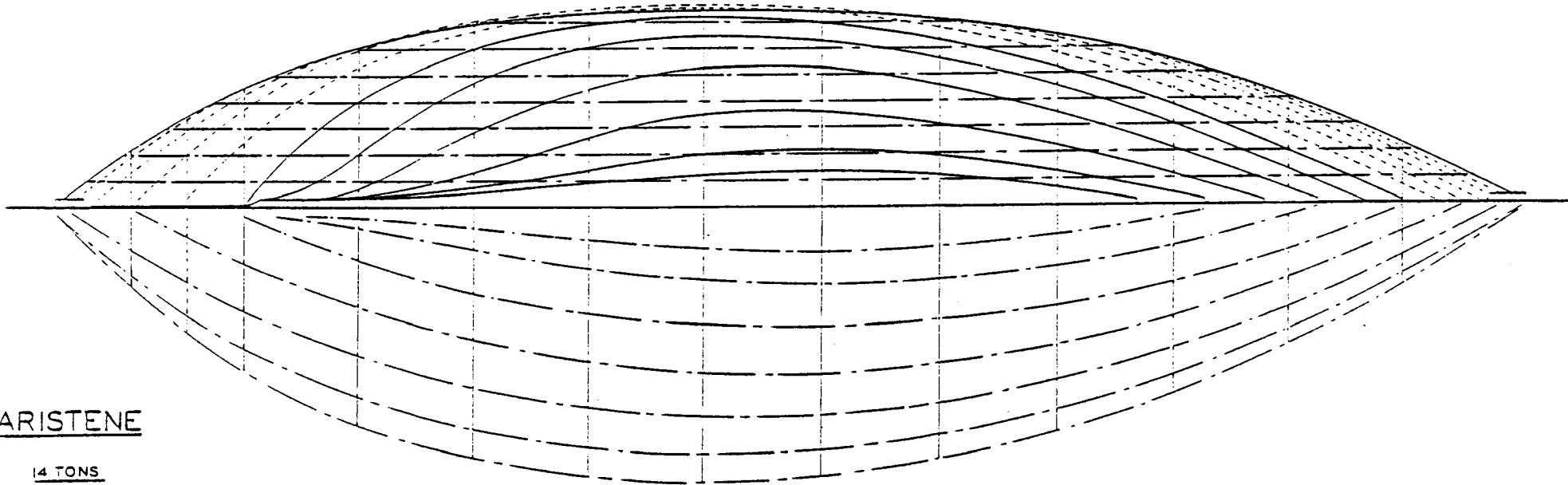
LOA 38 ft. LWL 30 ft. Beam 10 ft. 3in. Draught 6 ft.

Displ. 10.7 tons. Iron keel 3 tons. Sail Area 623 sq.ft. T.M. 13½ tons.



LOA..... 38 FT.
 LWL..... 30 FT.
 BEAM..... 10 FT. 3 IN.
 DRAUGHT..... 6 FT.
 DISPLACEMENT..... 10.7 TONS
 WEIGHT OF IRON KEEL..... 3 TONS

0 1 2 3 4 5 6 7 8 9 10 FEET



ARISTENE

14 TONS

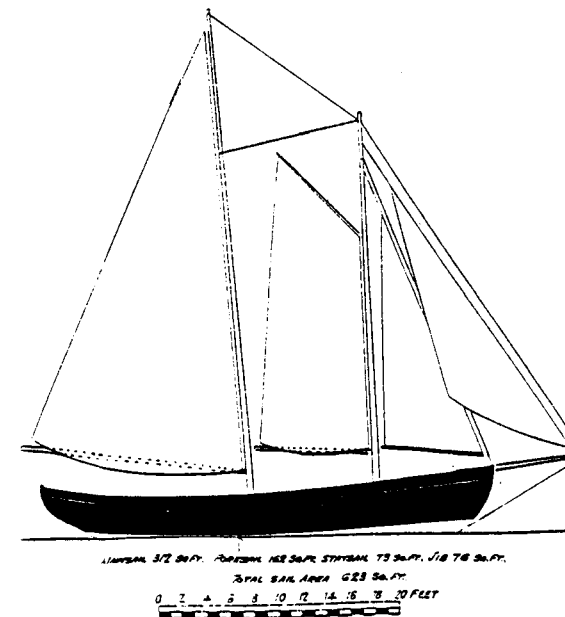
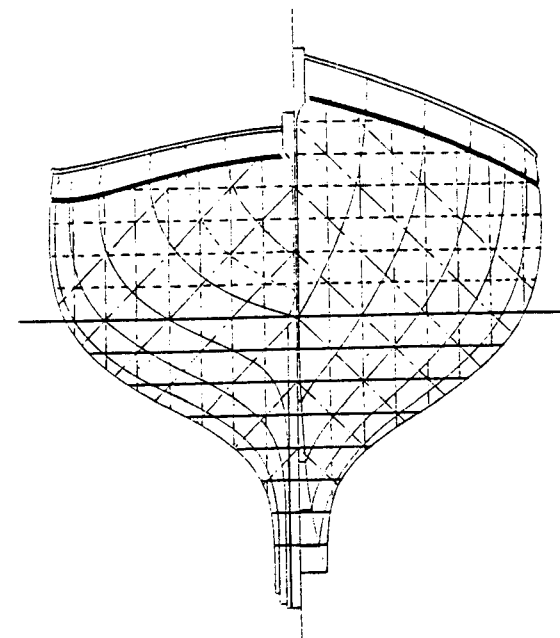
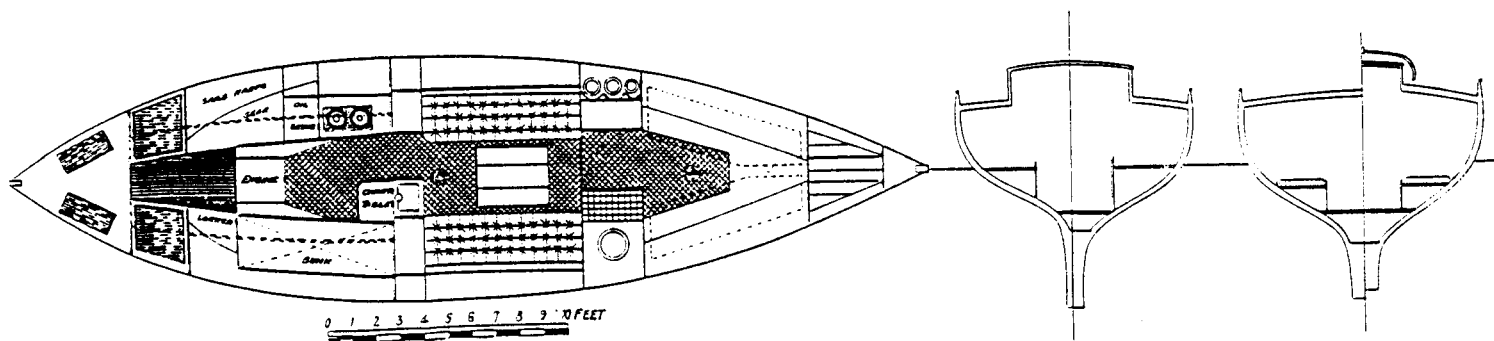
When Francis B. Cooke published the lines of ARISTENE in one of his many books T.H.B. wrote:

The leit-motif of this design is ease. Her long easy lines should give an easily driven hull, her softish bilges make for ease in a seaway, and her schooner rig for ease of handling.

We can regard her for home cruising as a 40-60. For this purpose she could have a 15- to 20-H.P. engine, and she would then be ideal for handling with a small crew. A similar design of mine, FASTNET, is run all the year round in British Columbia by the owner and his wife.

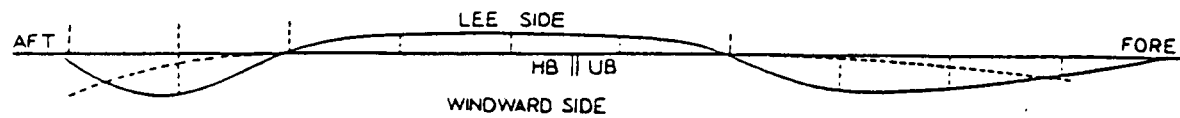
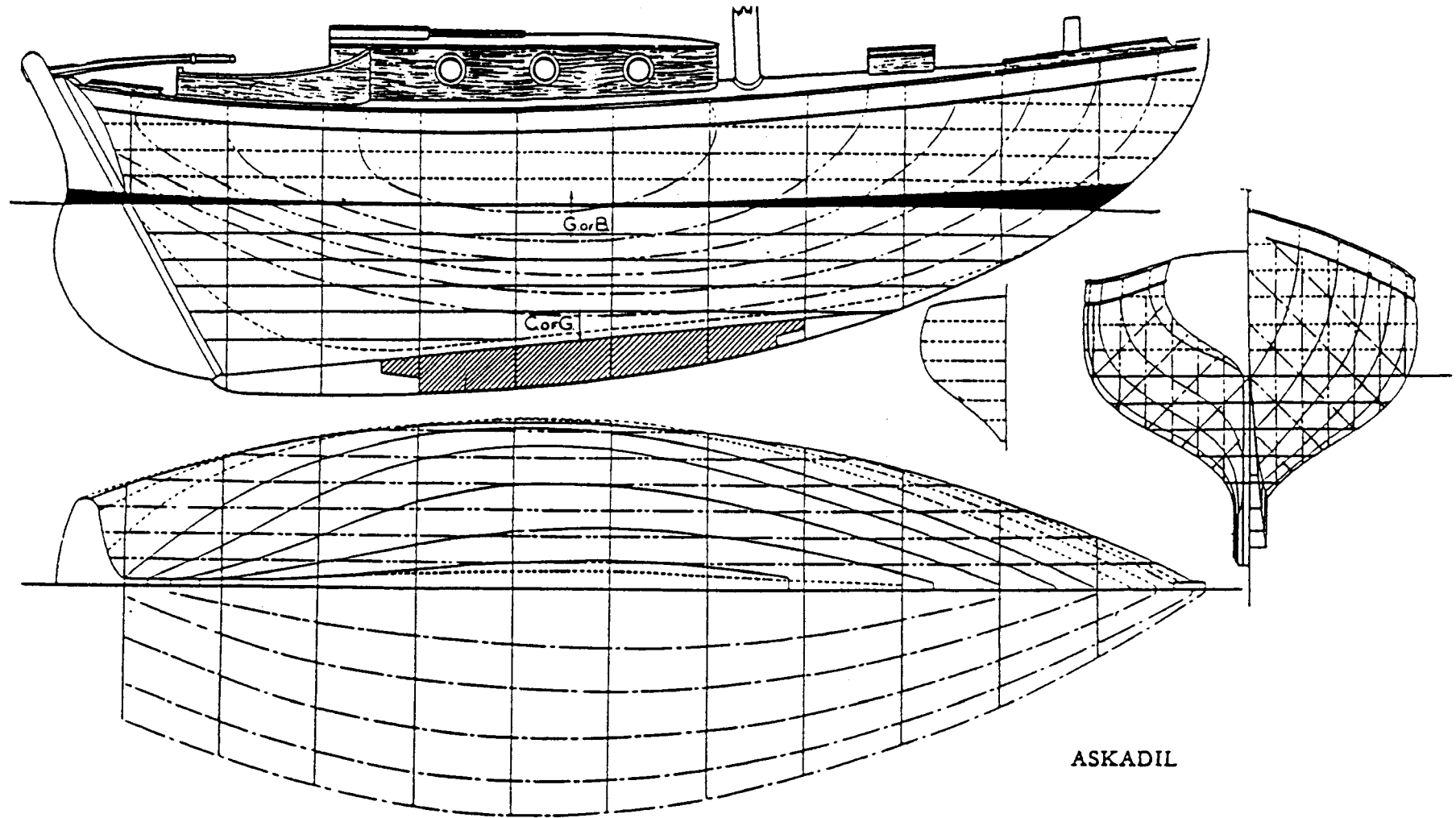
For ocean cruising, for which I think she is very suitable, I would give her a 7-H.P. Thorneycroft Handy Billy engine. On the other hand she could be rigged up to her capacity as a Bermudian cutter or yawl. Another alternative would be the Bermudian ketch, which is now so popular in America.

The lines and plans speak for themselves. A suitable lay-out has been sketched in, but many alternative plans could be adopted.

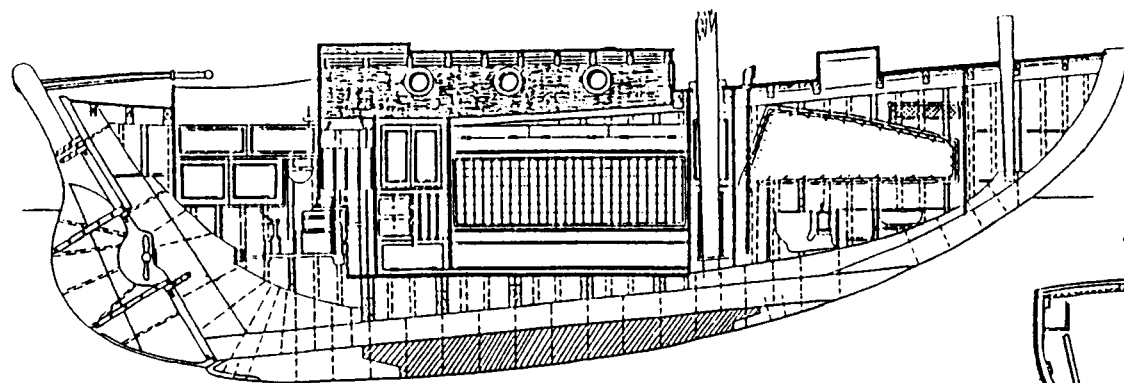


ASKADIL DESIGN 1933

LOA 29ft. 6in. LWL 25ft. Beam 8ft. 6in. Draught 4ft. 9in.
 Displ. 6.2 tons Lead keel 2.3 tons T.M. 8 tons Sail Area 514 sq.ft.



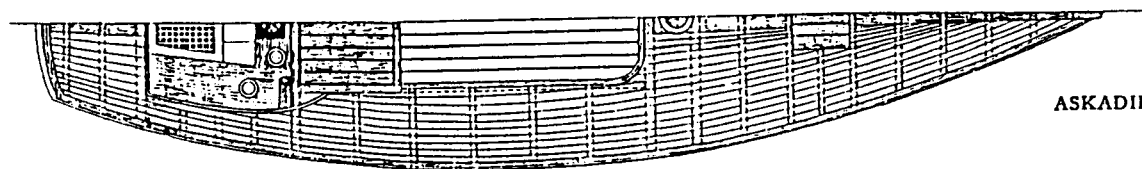
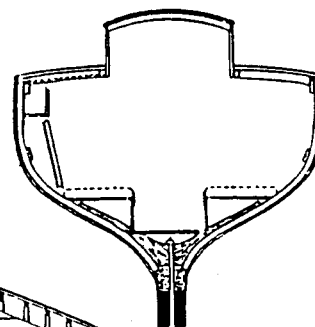
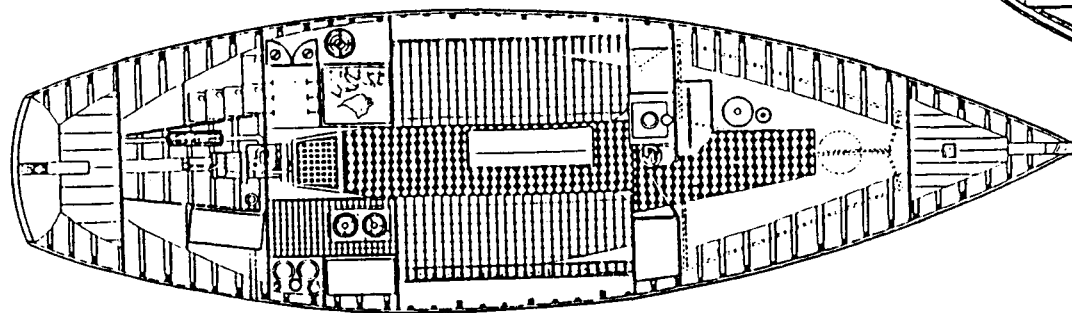
Above, The metacentric curve of Askadil
 is the same as that of Englyn



Mainsail - 328 sq.ft.

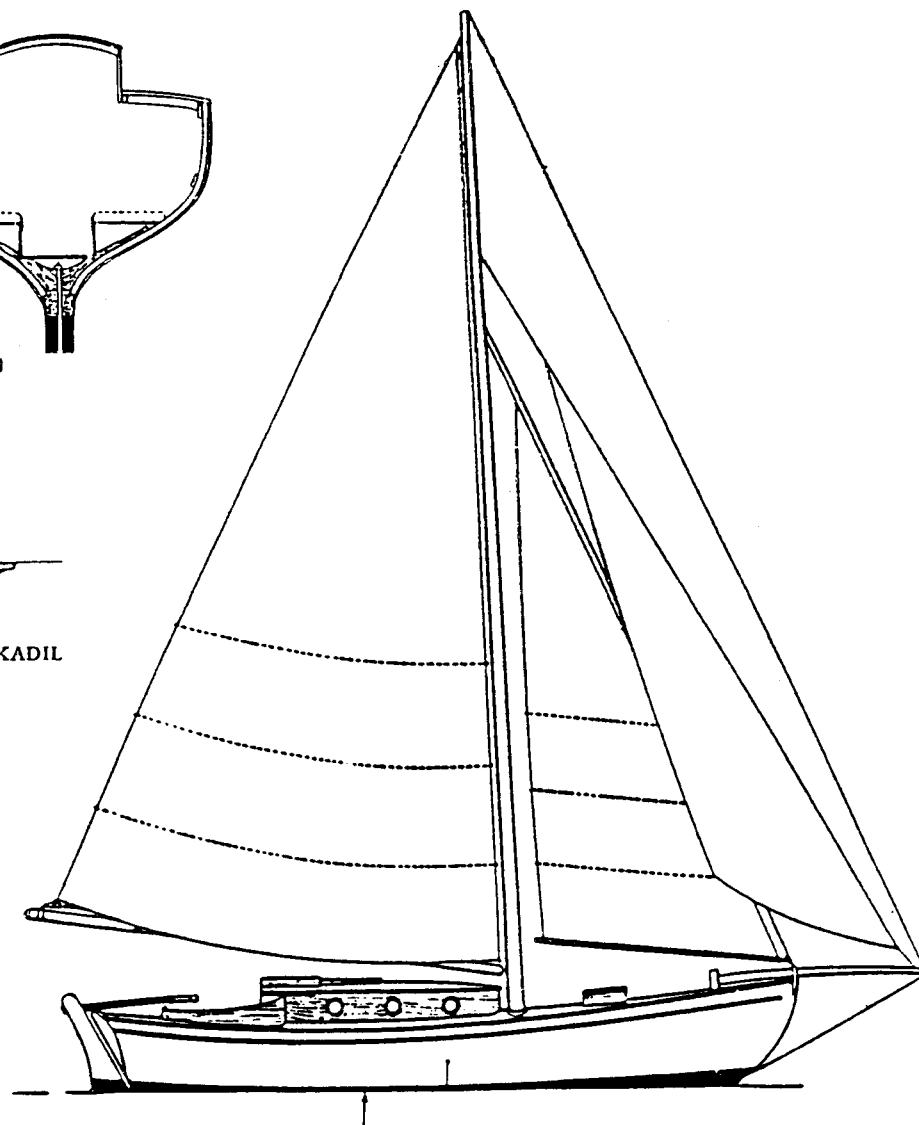
Foresail - 106 sq.ft.

Jib - 80 sq.ft.



ASKADIL

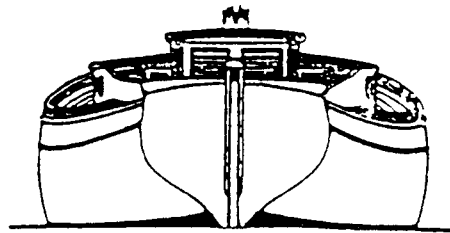
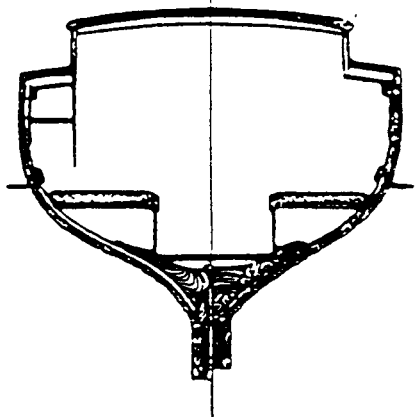
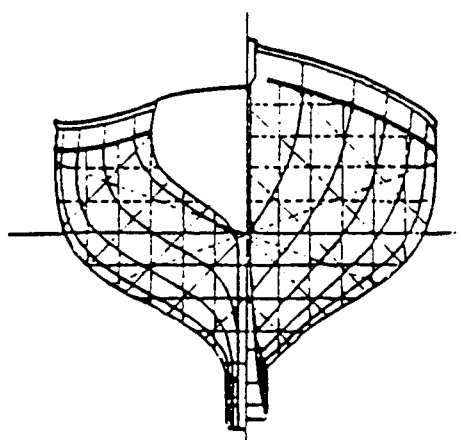
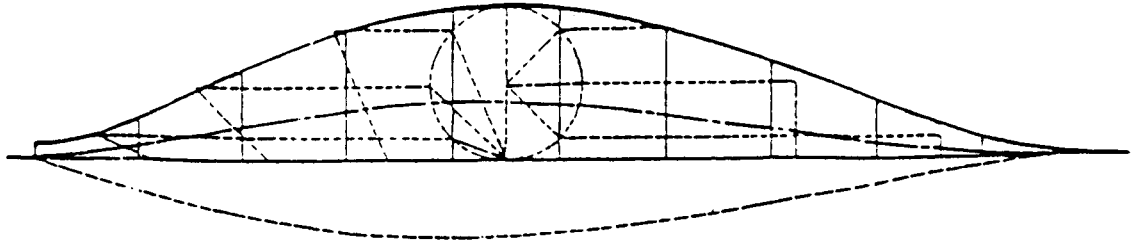
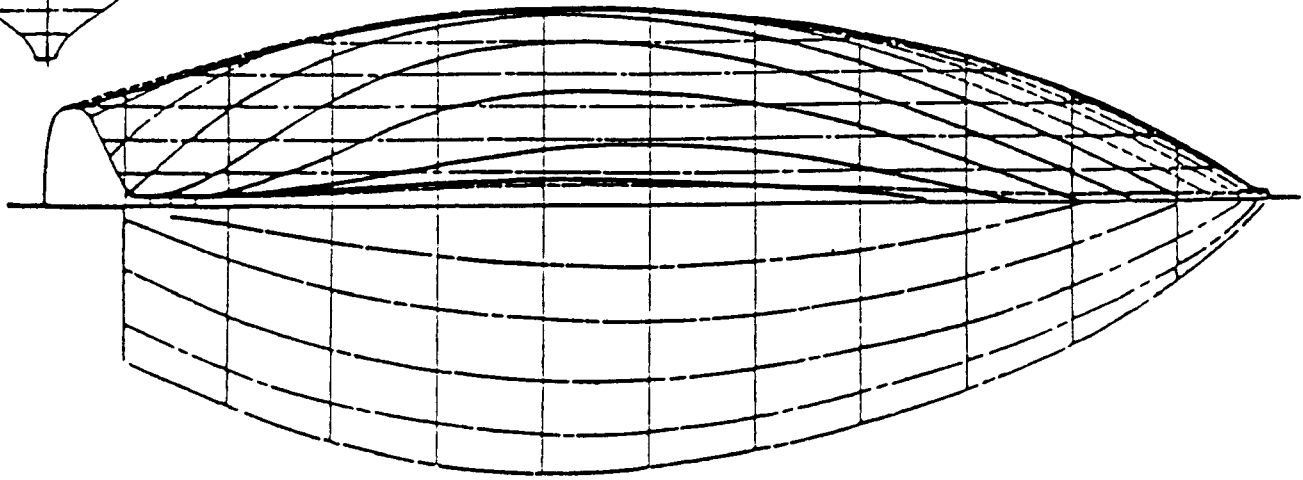
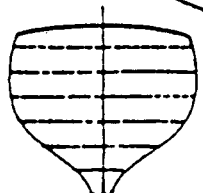
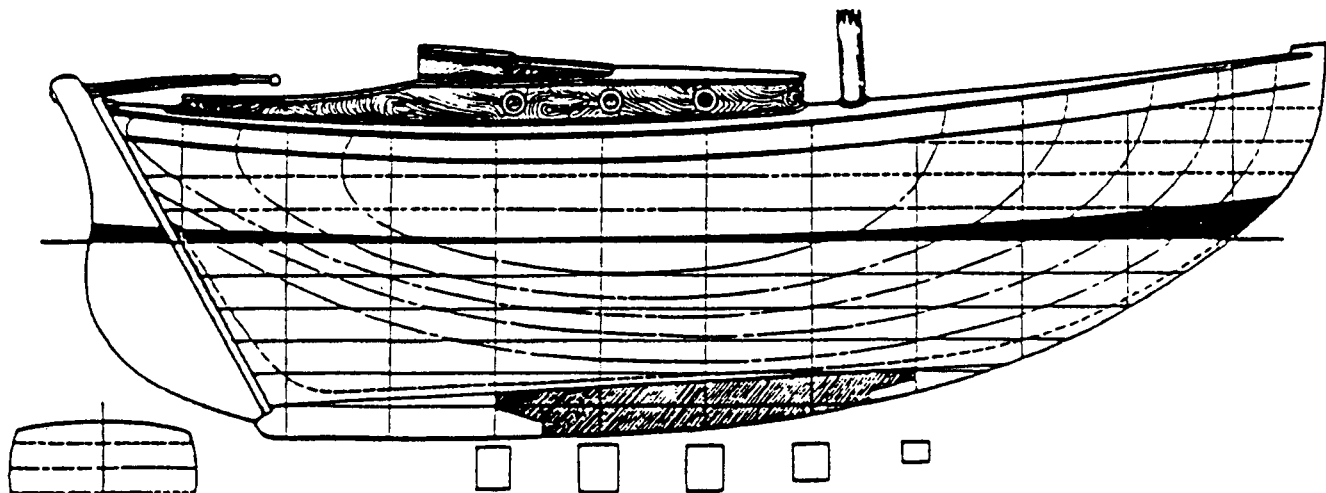
T.H.B. produced a sequence of transom sterned designs with a LWL of 22ft. 6in. ASKADIL was developed from ENGLYN, the third in the sequence, by spacing out the sections to give a 25ft.LWL.

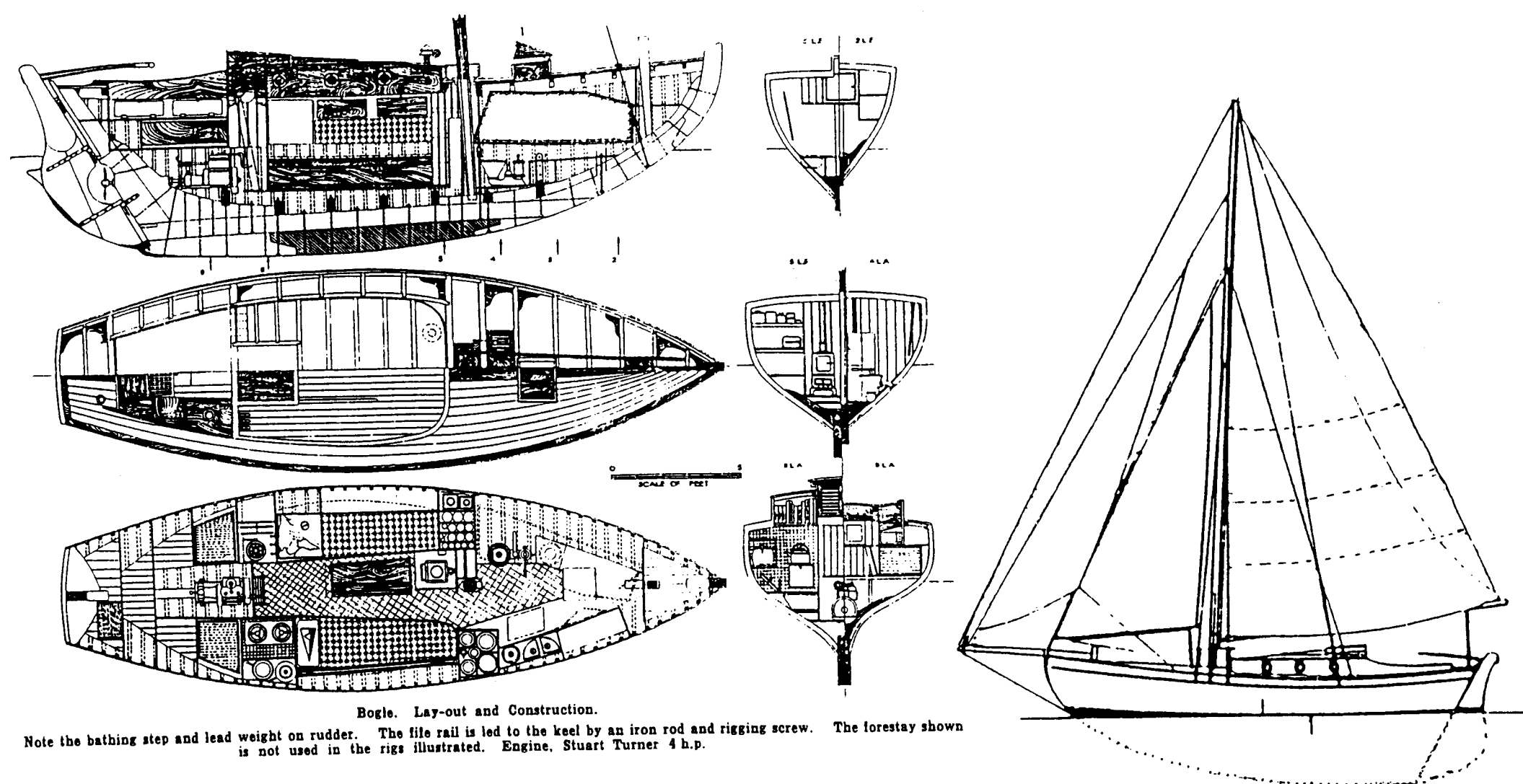


BOGLE DESIGN 1933

LOA 25ft.5in. LWL 22ft. Beam 8ft.2in. Draught 4ft.

Displ 4.6 tons Lead keel 1.8 tons T.M. 6 tons Sail Area 380 sq.ft.





Bogle. Lay-out and Construction.

Note the bathing step and lead weight on rudder. The file rail is led to the keel by an iron rod and rigging screw. The forestay shown is not used in the rigs illustrated. Engine, Stuart Turner 4 h.p.

In 1933 the Little Ship Club held a Designing Competition for a yacht of "4 to 6 tons, and from 20 to 30ft. L.W.L." T.H.B. considered these limits curious and commented that although a four-tonner has a L.W.L. of around 20 ft., a six-tonner cannot have much more than 22ft.; 30ft. would give an eight to ten-tonner. He considered that if any competitor had tried to harmonise these two discordant limits they would have evolved a long snakey plank-on-edge boat, fast, perhaps, but not a cruiser.

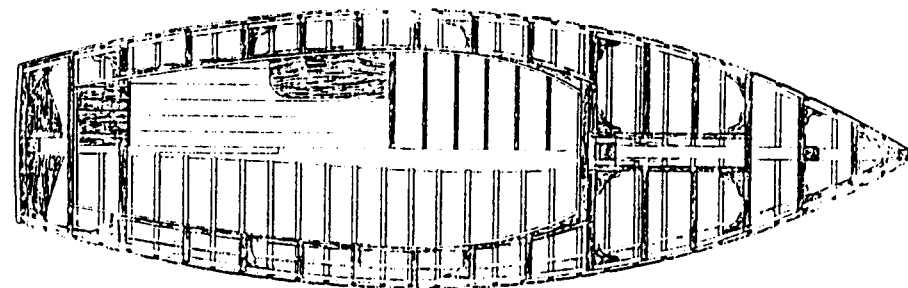
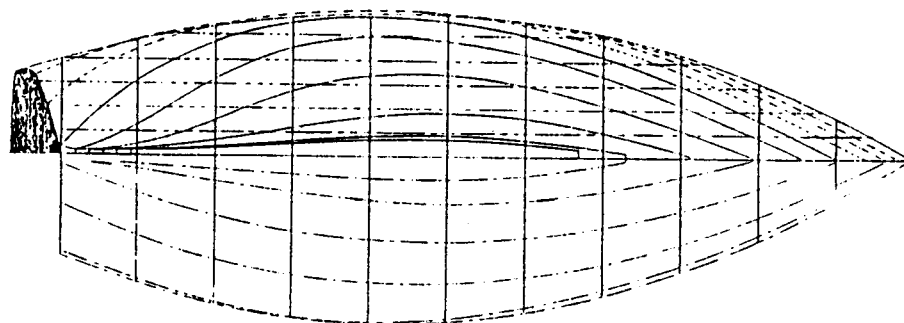
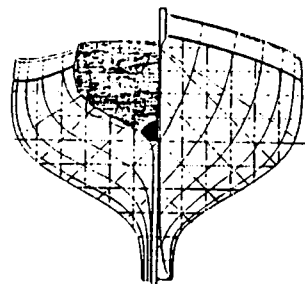
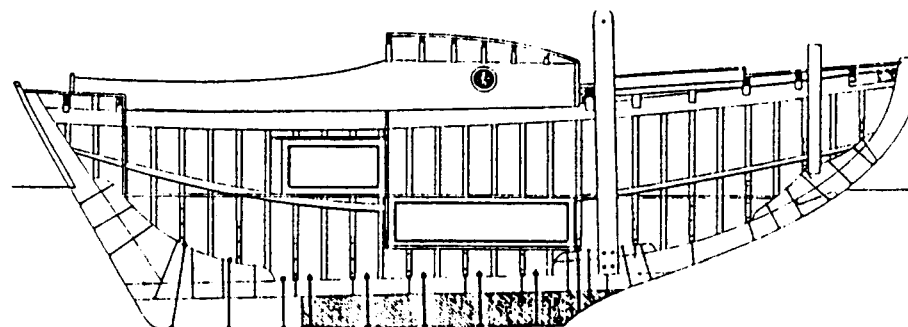
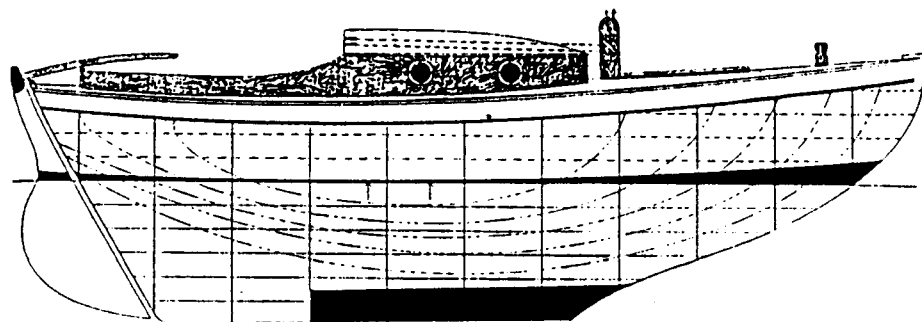
Mainsail	250 sq.ft.
Foresail	80 sq.ft.
Jib	50 sq.ft.

The BOGLE design was his interpretation of the conditions. The original drawings included an alternative Bermudian sloop rig and a note that the 1.8 ton Lead Keel was too heavy unless construction was light.

BON MARCHÉ DESIGN 1921

LOA 18.6 ft. LWL 16 ft. Beam 6 ft. Draught 3 ft.

Displ. 1.9 tons Lead keel 16 cwt. (2 cwt inside) T.M. 2½ tons



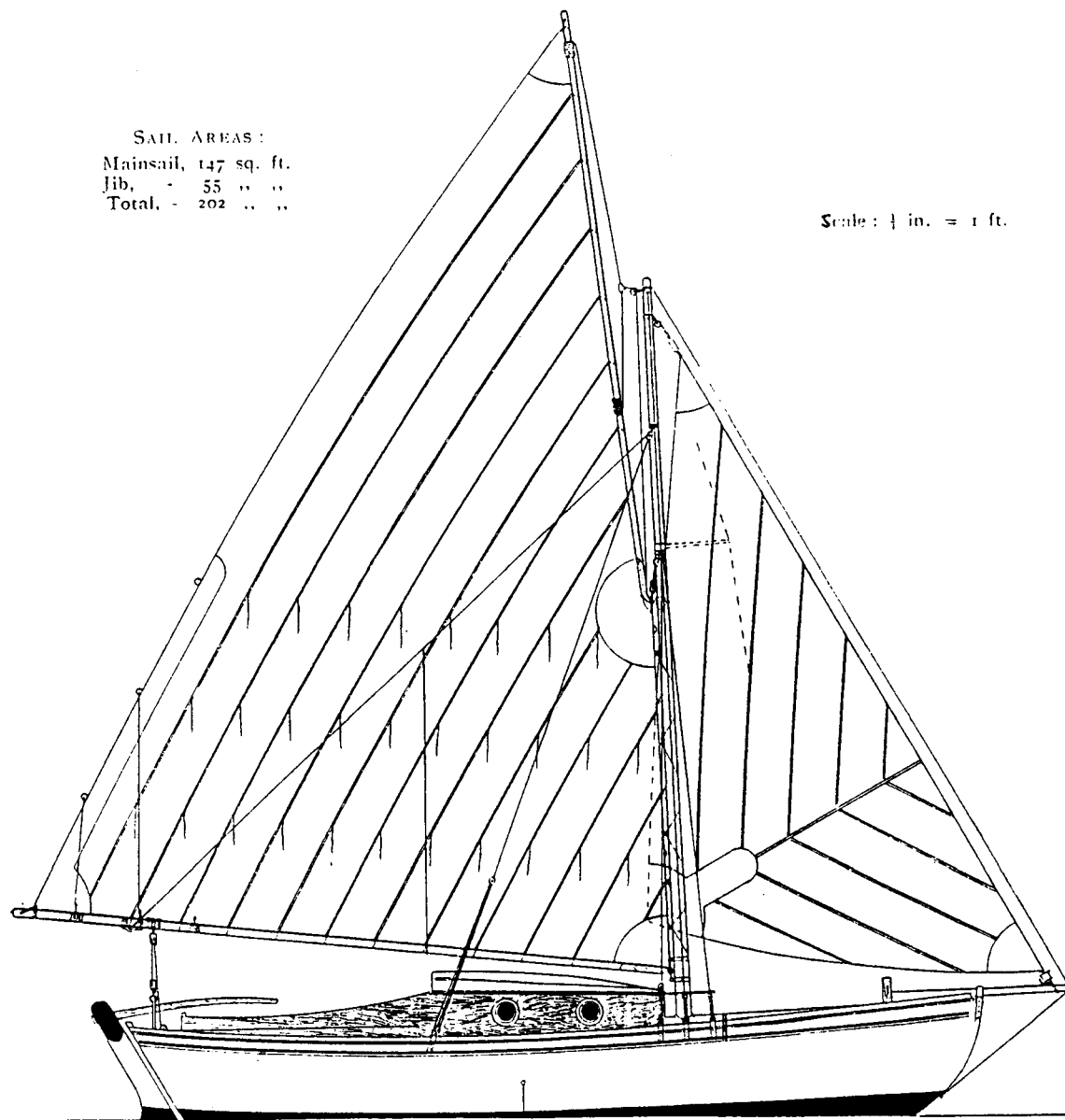
This design was an entry in a Yachting Monthly Designing Competition held in 1921. T.H.B. had drawn the lines of a very similar yacht which appeared in YM. in November 1915. In his own words he "altered this 1915 design but did not improve it" and submitted the result to the competition.

The judges considered the boat 'quite nice, would be cheap to build, very comfortable, fast and weatherly'. The design was not a prize winner.

SAIL AREAS :

Mainsail, 147 sq. ft.
 Jib, 55 " "
 Total, 202 " "

Scale: $\frac{1}{4}$ in. = 1 ft.



"BON MARCHÉ": SAIL AND RIGGING PLAN

"BON MARCHÉ" SPECIFICATION.

Keel.—Of Elm, sided 4 in. ; moulded as in design.

Stem and Stern Post.—Of Oak, sided 3 $\frac{3}{4}$ in.

Planking.—Of Red Pine, $\frac{3}{4}$ in. thick; garboard and top strake of Teak or Oak.

Bent Timbers.—Of Ash, Oak or American Elm, 1 $\frac{1}{2}$ in. by $\frac{3}{4}$ in., spaced 7 in. centre to centre.

Beams.—Of Oak, 1 $\frac{3}{4}$ in. by 1 $\frac{1}{2}$ in. *Main Beam* in way of mast and at after end of cockpit, 2 in. by 2 $\frac{1}{2}$ in.

Shelf.—Of Pitch Pine, 1 $\frac{1}{2}$ in. by 4 in.

Bilge Stringer.—Of Pitch Pine, 1 $\frac{1}{2}$ in. by 2 in., tapered at ends. Fastened at alternate frames.

Transom.—Of Oak, 2 in.

Coamings of Cockpit and House.—Of Teak or Honduras Mahogany, 1 in.

House Beams.—Of Oak, 1 $\frac{1}{2}$ in. by 1 in.

Fore-and-aft.—Of Oak, 1 $\frac{1}{2}$ in. by 2 in.

Deck.—Of match boarding, $\frac{3}{4}$ in. To be covered with canvas of best quality bedded upon a mixture of white lead and varnish.

Covering Board.—Of Teak or Oak, $\frac{3}{4}$ in.

Rail. Of American Elm, 1 in. thick.

T.H.B. brought the BON MARCHÉ design up to date in 1941 with PAIDA, analysed to satisfy the metacentric shelf theory.

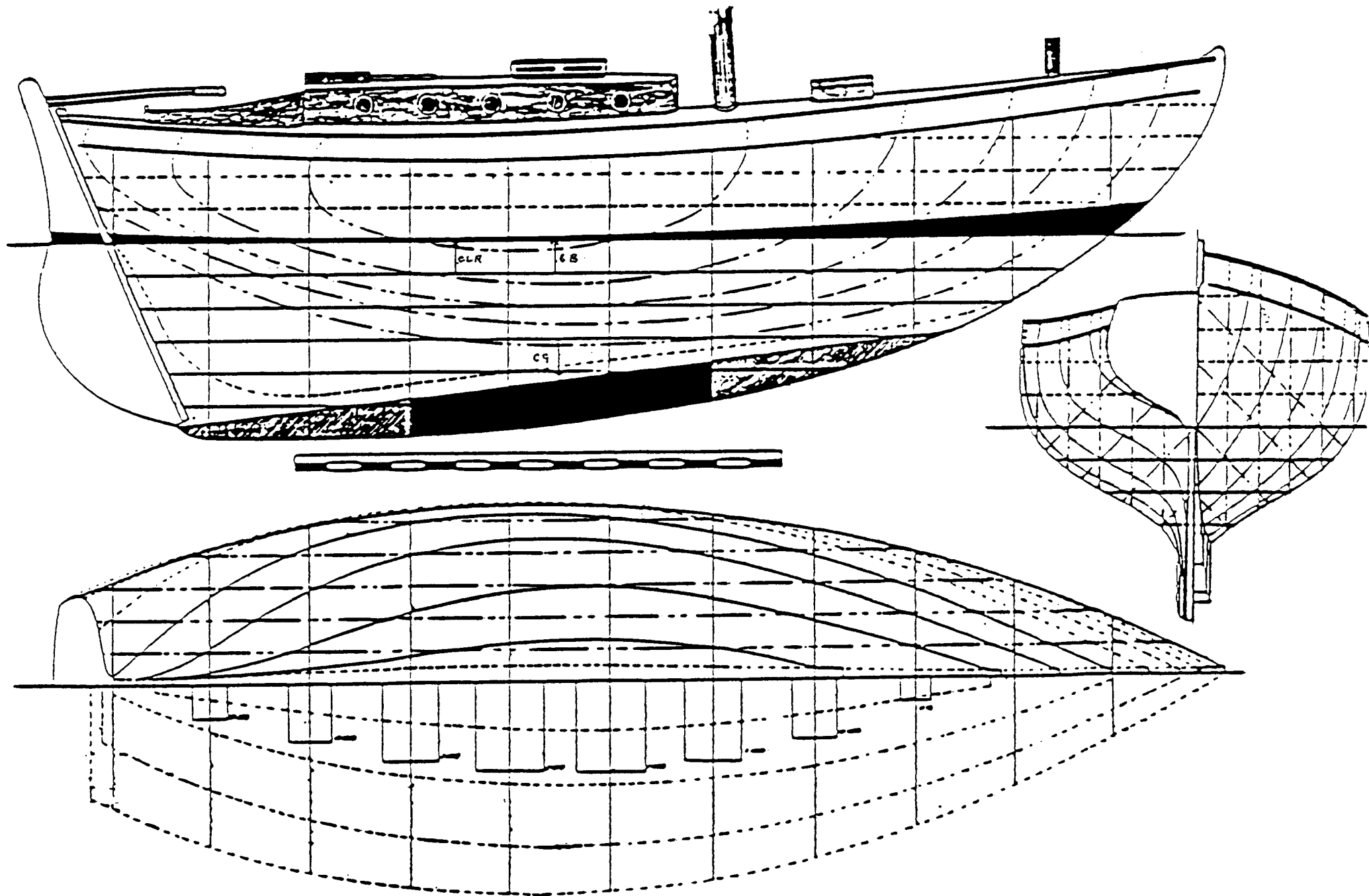
It is interesting that he retained the modified gunter rig but raised the runners to the mast head where they would provide better support for the forestay.

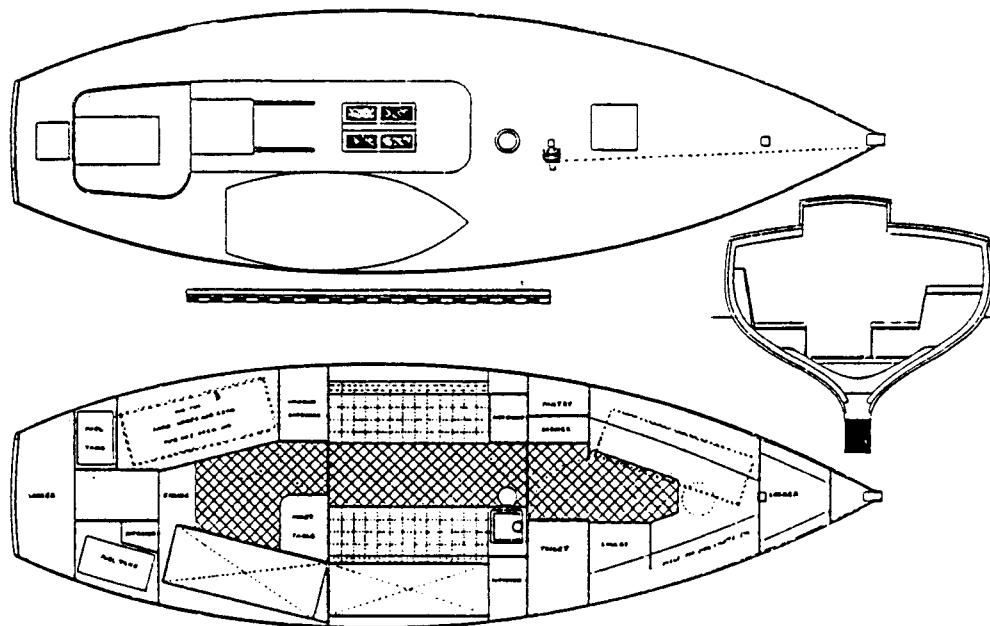
This modified gunter would appear to be far more sensible for this size of craft than the ubiquitous Bermudian of modern times.

CAYUCA DESIGN 1933

LOA 36 ft. LWL 31 ft. Beam 11 ft. Draught 6 ft. T.M. 16 tons.

Displ. 12.5 tons. Lead or Iron keel 4 tons approx. Sail Area 770 sq.ft.





Referring to the beam of 11 ft. for a WL length of 31 ft. T.H.B. says: "I wonder whether I have not given CAYUCA too much beam, but for ocean work a lot of stowage is called for, and one does not want the use of the fuel and of the water and food to alter the total displacement too much.

The working rig shown, totalling 770 sq. ft. was specified by the owner, who wished for an easily-handled boat without any pretence at a 'fast cruiser'.

Now that Mr. Laurent Giles has devised an efficient run-way it might be better to adopt this, but for such rigorous work I would like the track to be strengthened with a few bands round the mast. I cannot feel that mere screws driven into soft wood can be quite safe in a heavy gybe, unless backed up by bands, especially at the stations where the head of the sail comes when fully set and at each reef."

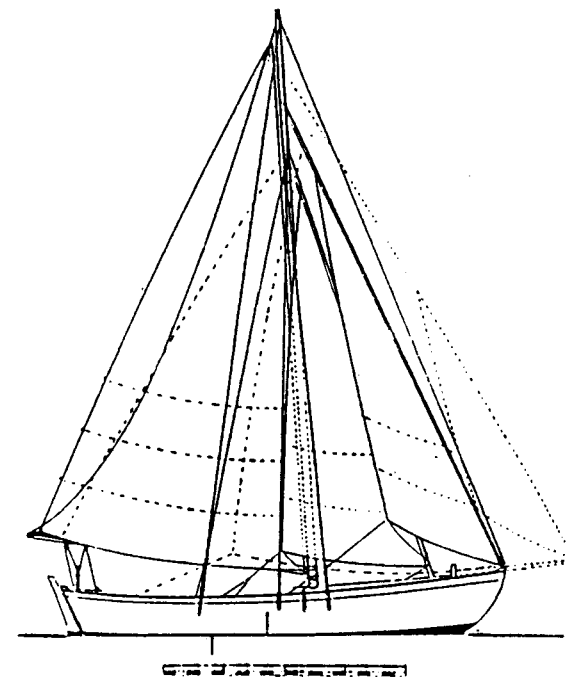
When this design was published in the Y.M. the Editor explained that it had been prepared by T.H.B. for an Auckland yachtsman who intended to build her himself for cruising among the South Sea Islands.

Although in general form this design is clearly a development of all Dr. Butler's previous designs, there are one or two unusual features, perhaps the most noticeable being the 'off-set' coachroof and cabin floor.

The designer commented: "The off-set trunk will naturally be criticized, but there is much to be said for it. 11 ft. beam is too much for the ordinary arrangement to be used economically, and not enough for a bunk behind the settees on both sides.

The off-set cabin arrangement gives a useful bunk behind the settee on the starboard side, where a sleeper can be out of the way of the rest of the crew. This bunk can be a little lower than drawn and there is a large locker under it to stow the bedding for the two settees. On deck the off-set trunk leaves room for the secure stowage of a 10-ft. dinghy.

The after cabin has a built-in bunk on the starboard side, with drawers under it, and on the port there is a large amount of stowage for sails, warps and other gear. In front of this is an oilskin and clothes wardrobe. A full-sized chart table is arranged in this cabin."

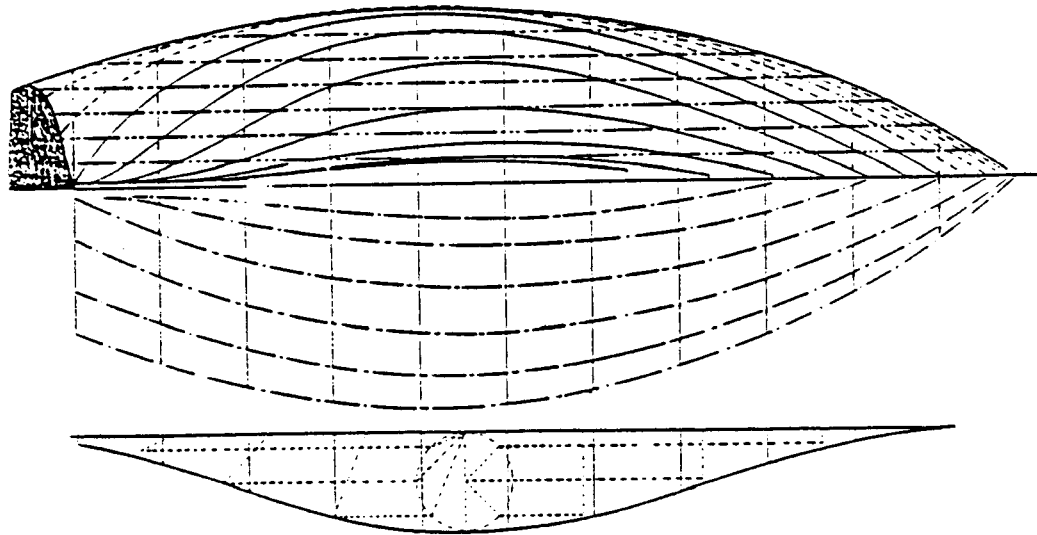
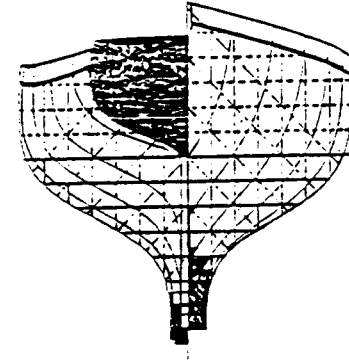
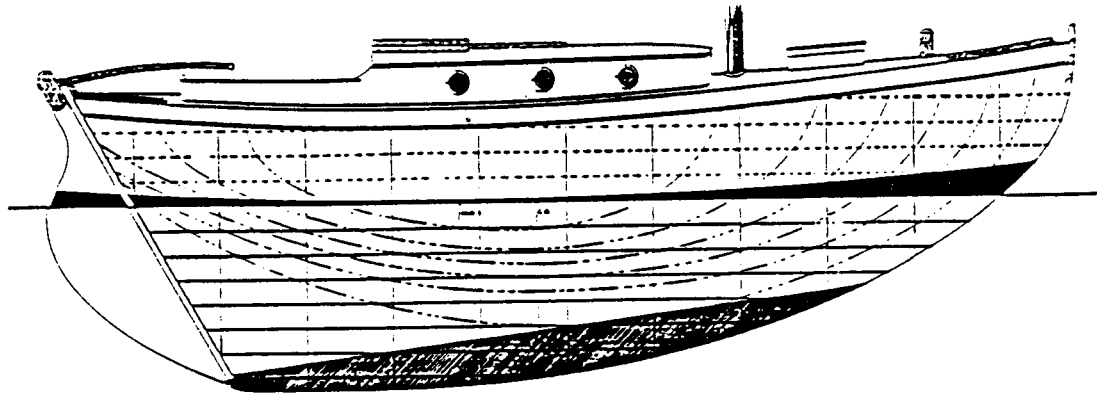


Sail plan of Cayuca. Mains'l 480, fores'l 170, jib 120. Total 770 sq. ft.

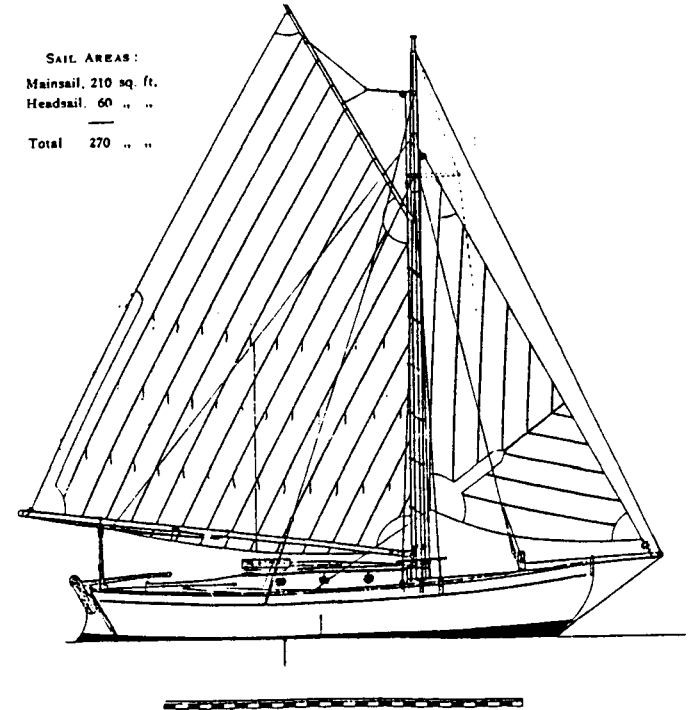
CHLOE DESIGN 1919

LOA 21 ft. LWL 18 ft. Beam 7.08 ft. Draught 3.75 ft.

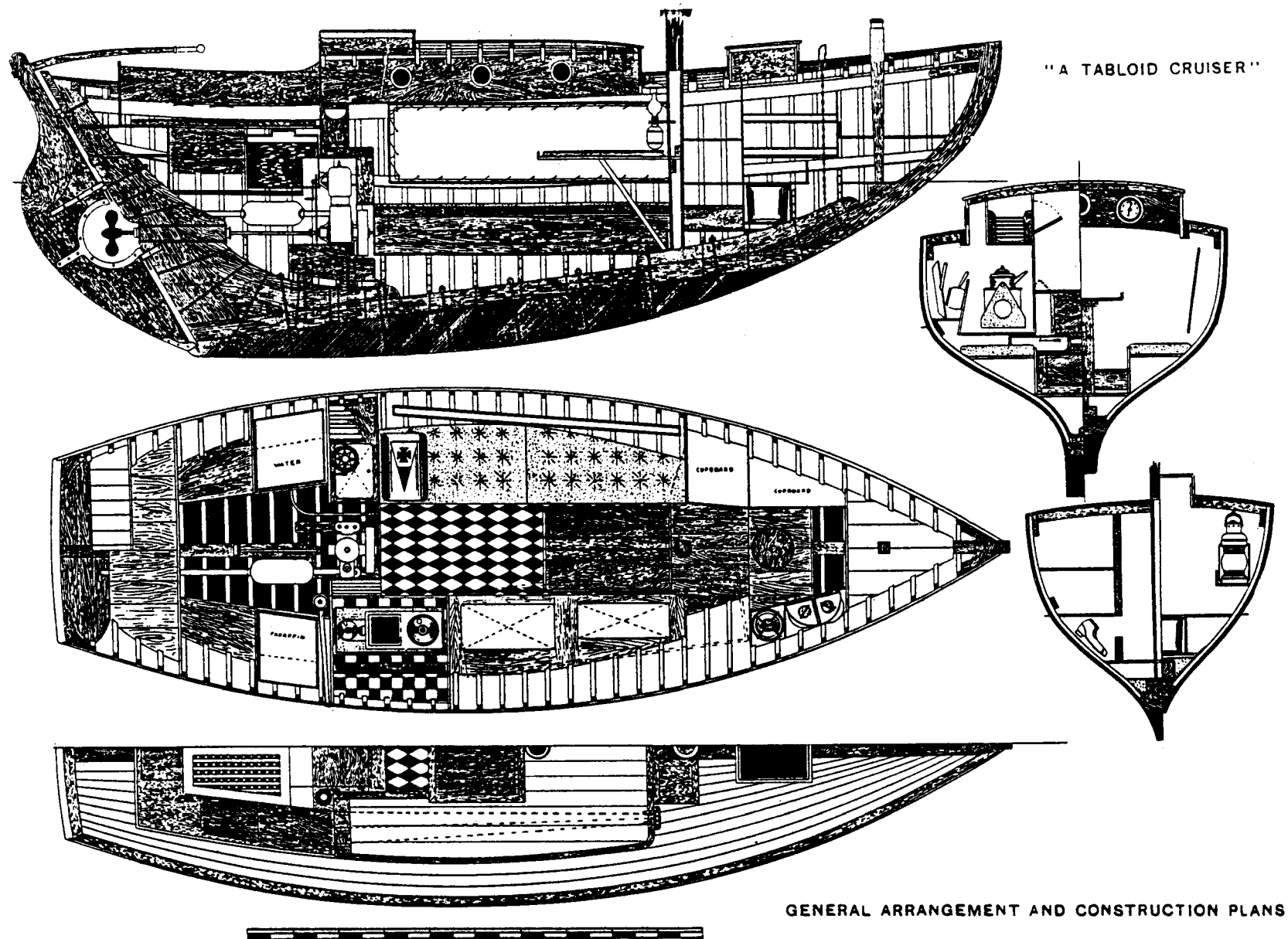
Displ. 3 tons. Iron keel 1.22 tons. Sail Area 270 sq.ft. T.M. 3.7 tons.



SAIL AREAS:
 Mainsail, 210 sq. ft.
 Headsail, 60 " "
 Total 270 " "



T.H.B. based this design for "A Tabloid Cruiser" on the performance of two earlier boats, MEMORY and SEAGULL. He felt that MEMORY needed more beam and less sail for open sea work and that SEAGULL had too much displacement. In this design he retained the stiffness and roominess of SEAGULL but increased the overall length and reduced the displacement.

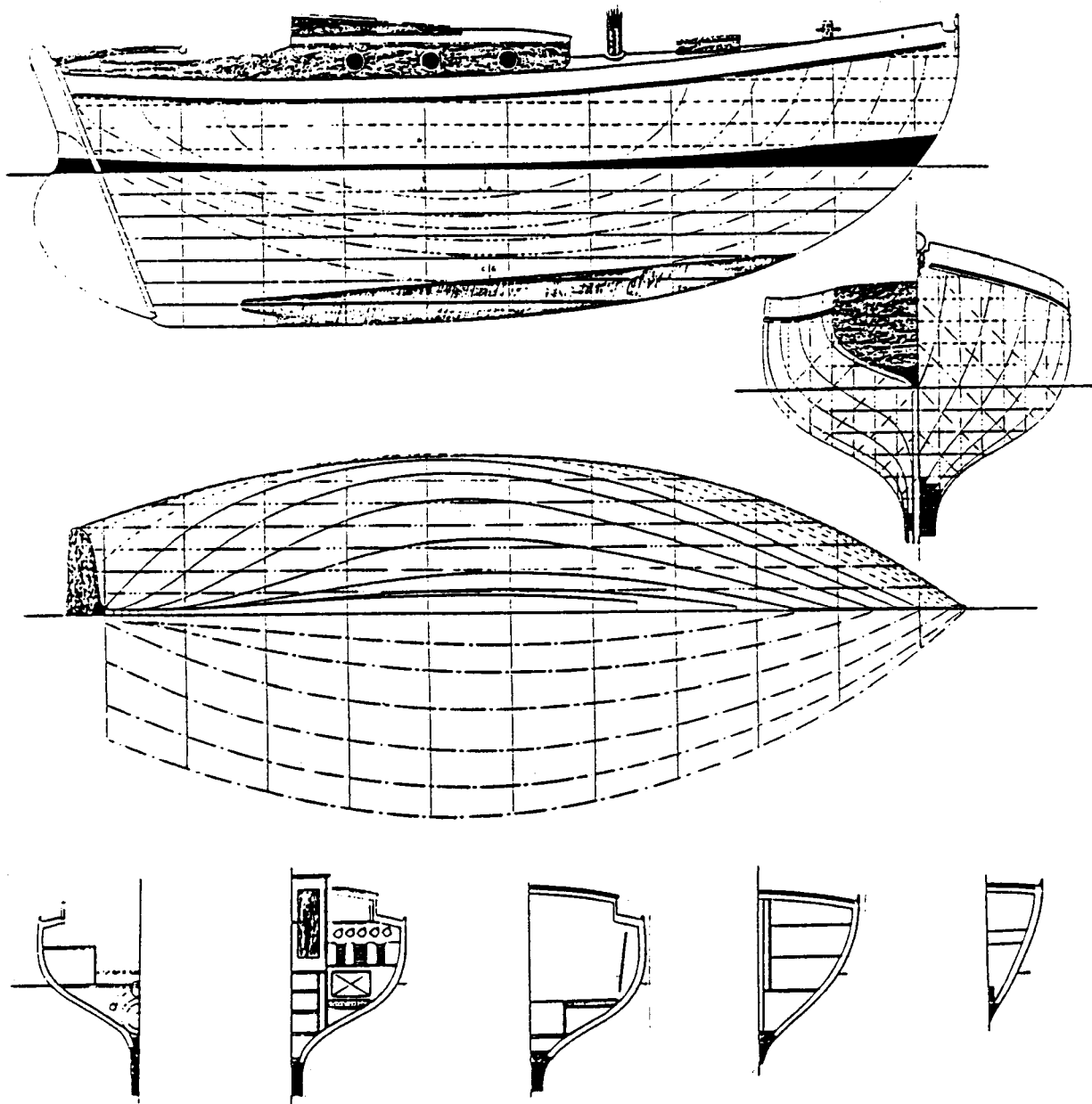


Describing this "Tabloid Cruiser" T.H.B. wrote: "After examining many small yachts and making countless measurements, to say nothing of numerous designs, some of which have been built, I have come to the conclusion that the tabloid should be eighteen feet on the waterline and have a beam of about seven feet, or at any rate six feet six inches. Within these dimensions we can arrange for two bunks and a galley. The boat must before all things be as seaworthy as possible and a good sail-carrier."

CYCLONE DESIGN 1919

LOA 21 ft. LWL 19 ft. Beam 7 ft. Draught 3 ft.6 in.

Displ. 3.4 tons. Iron keel 1.25 tons. Sail Area 317 sq.ft. T.M. 3.6 tons



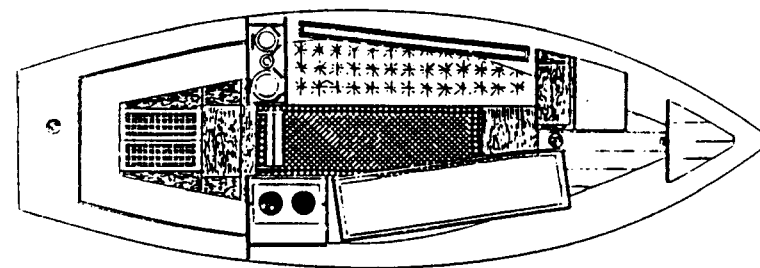
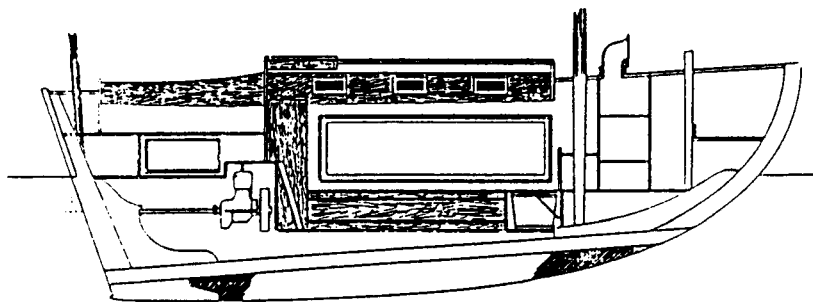
Writing in Y.M. in 1932 T.H.B. explained the origins of CYCLONE: "The SEAGULL, a yacht 18ft. on the LWL with 7ft. beam, and a heavy displacement, and fine after-body balanced perfectly on all points of sailing. With a strong quarter wind she not only did not pull at all, but I had the feeling that she might run off her helm to leeward. The lead of the centres was 18 in. or one twelfth of the LWL.

I considered that this model was too 'chubby', and so I drew the sections out and produced the CYCLONE with a LWL of 19 ft. and a beam of 7 ft. A large number of yachts have been built to this design, and their owners tell me they balance well on all points of sailing."

In another article describing this design T.H.B. commented: "The draught has been kept down in order that the yacht may be suitable for estuary work. The boat is stiff and sails at a moderate angle, making her draught effective. She is a reasonable performer to windward.

The cabin plans show that there is comfortable room for two. The galley is placed aft to starboard, and on the port side aft there is a pantry and food locker. Forward on the port side there is a sideboard, under which is the bread locker. Behind this is a large cupboard extending well into the forecabin, fitted with two shelves for clothes.

In the forecabin there is ample stowage for kit-bags, and a shelf to starboard for the anchor and side-lights. The spare sails will stow on the shelf in the eyes of the yacht."



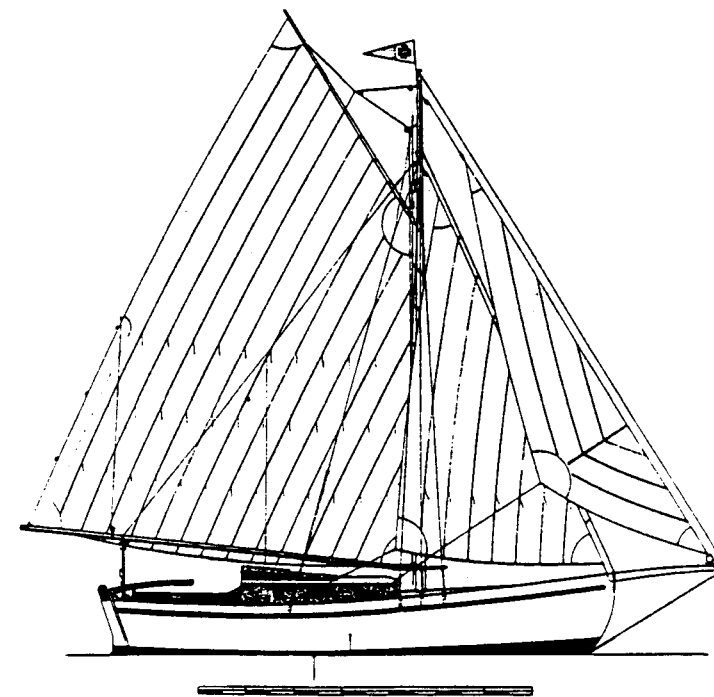
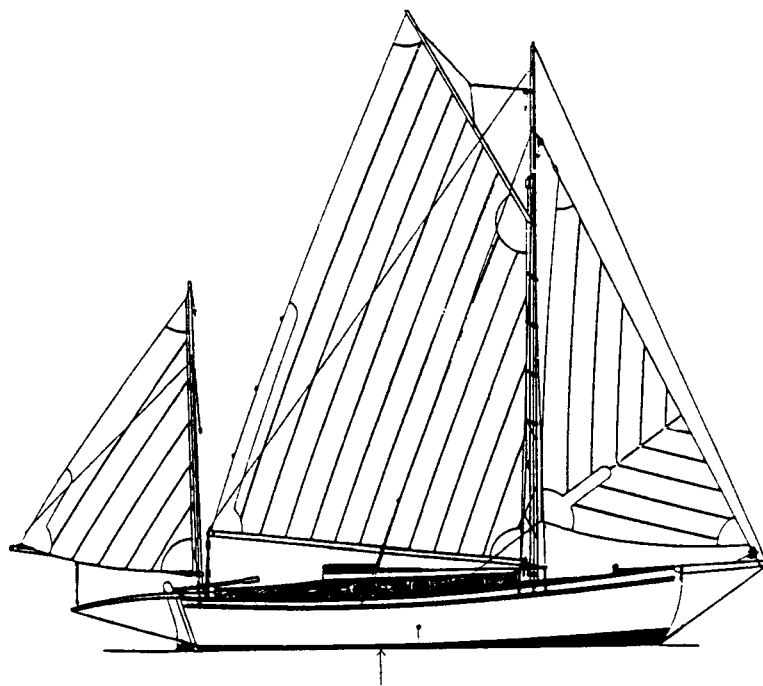
GENERAL ARRANGEMENT OF CYCLONE

YAWL

Mainsail	.....	180 sq.ft.
Mizzen	.....	40 sq.ft.
Jib	.....	60 sq.ft.
TOTAL		<u>280 sq.ft.</u>

CUTTER

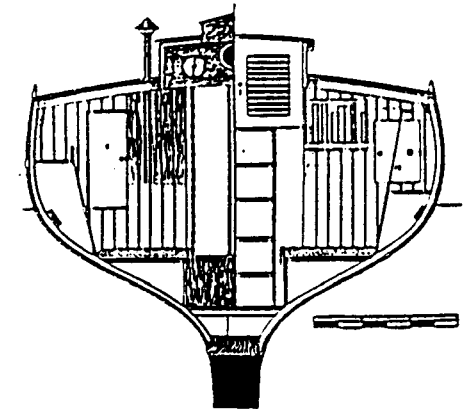
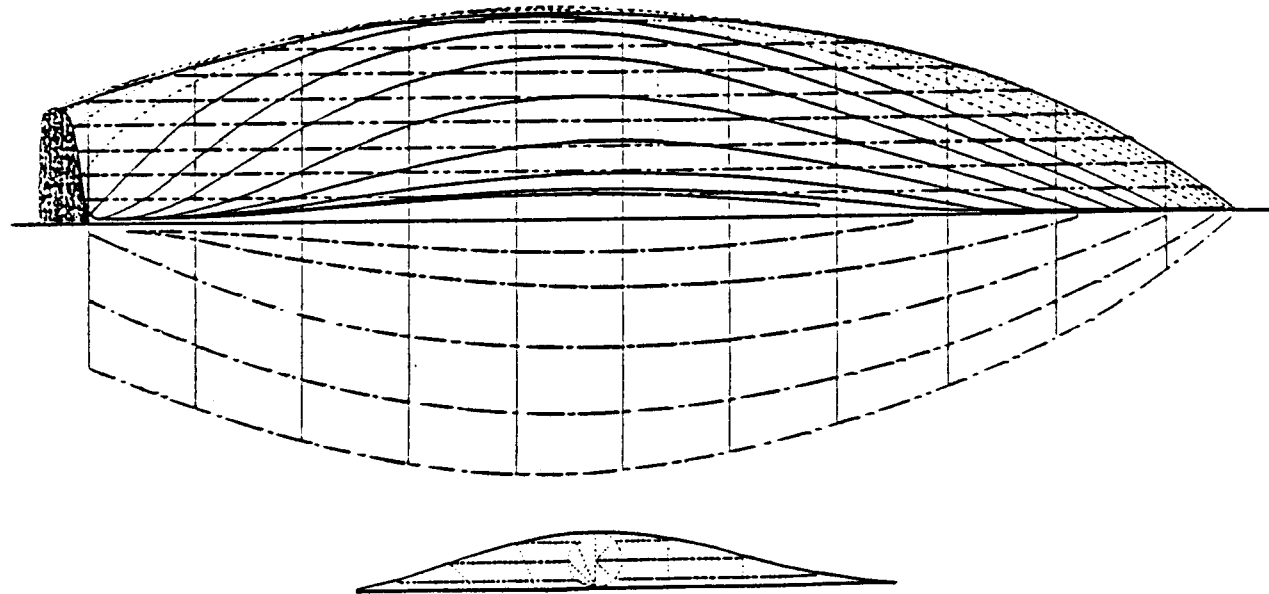
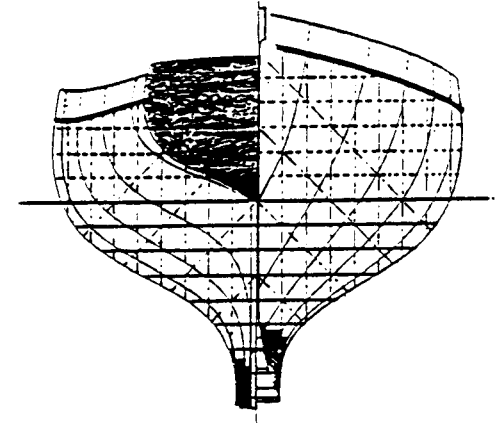
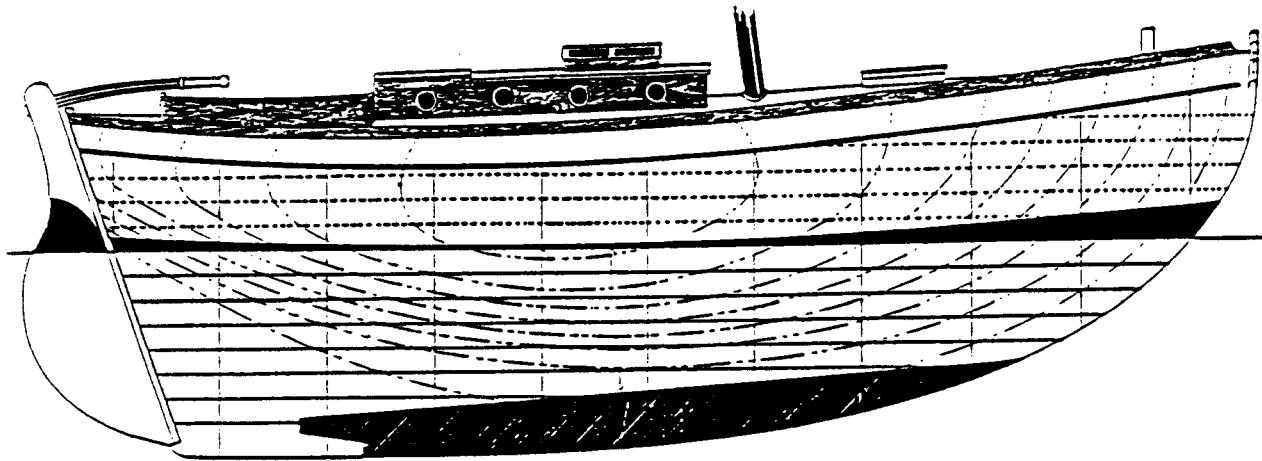
Mainsail	.....	212 sq.ft.
Foresail	.....	63 sq.ft.
Jib	.....	42 sq.ft.
TOTAL		<u>317 sq.ft.</u>



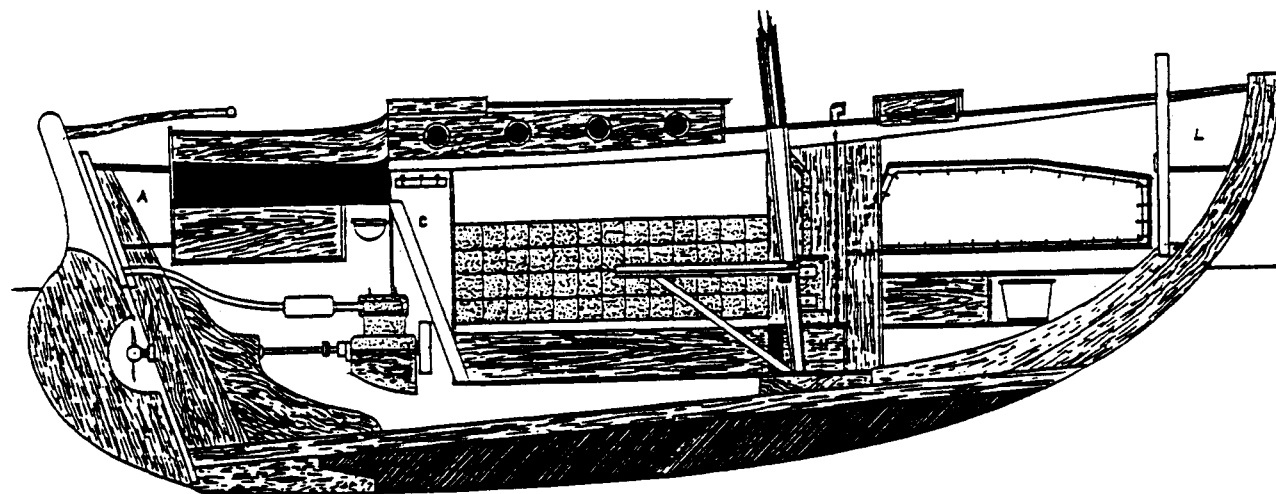
ALTERNATIVE SAIL PLANS FOR CYCLONE

CYCLONE II DESIGN 1928

LOA 25 ft. LWL 22 ft.6 in. Beam 8 ft.7 in. Draught 4 ft.2 in.
Displ. 5.7 tons. Iron keel 2.2 tons. Sail Area 405 sq.ft. T.M. 6½ tons.

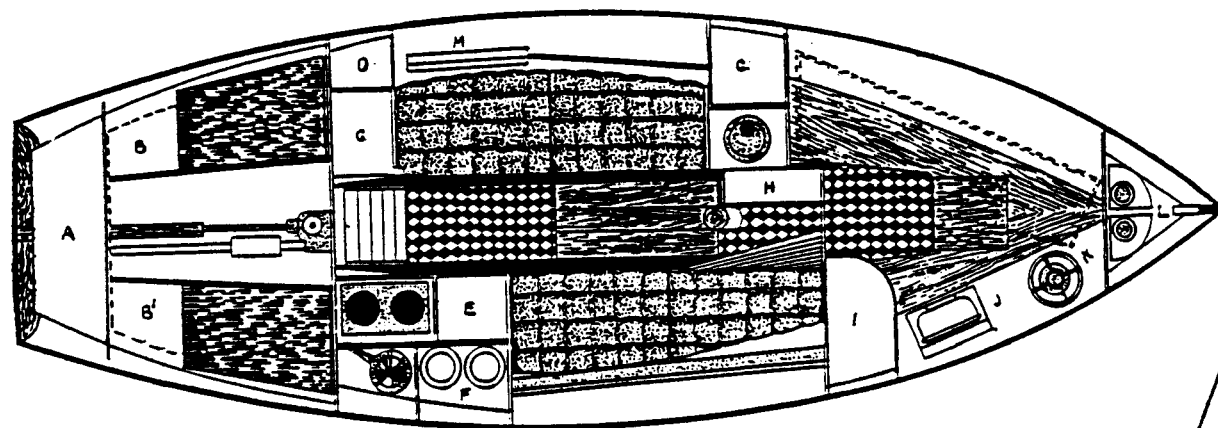


This is the CYCLONE design proportionally enlarged to a LWL of 22.5 ft.



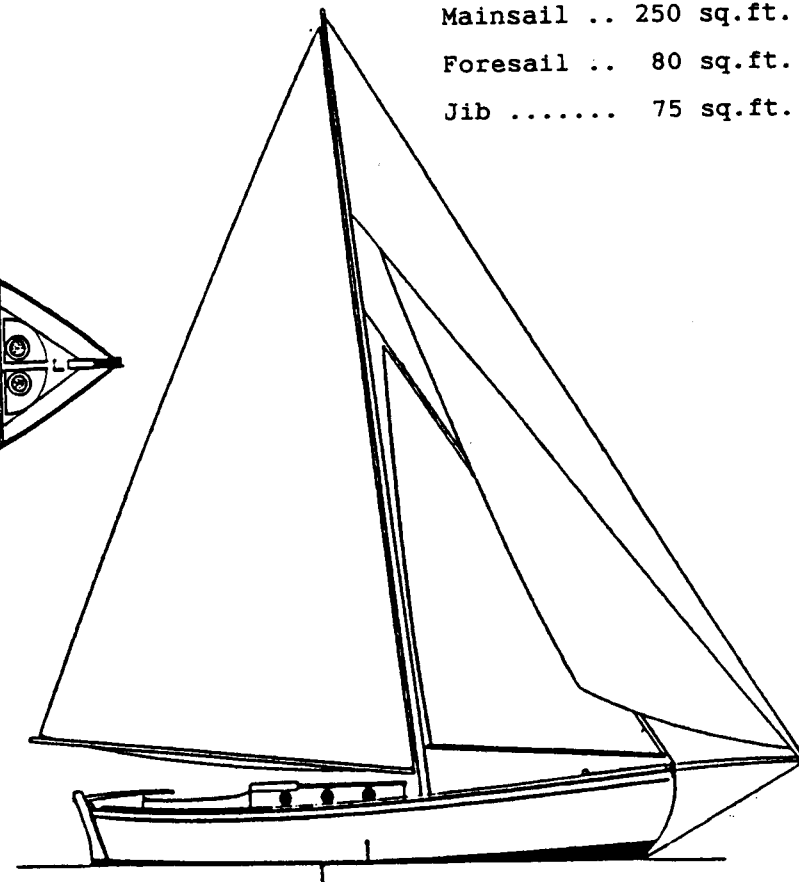
Letters on Cabin Plans

- A Stern locker for sails, warps, etc.
- B Locker under seat for bosun's stores.
- B' Locker under seat for meat.
- C Hanging space for oilskins.
- D Locker opening into cabin.
- E Table with bread locker under.
- F Pantry.



- G Clothes locker behind heating stove opening into cabin.
- H Chain box.
- I Locker for food opening into cabin.
- J Folding wash basin.
- K Riding light.
- L Side lights.
- M Folding chart table."

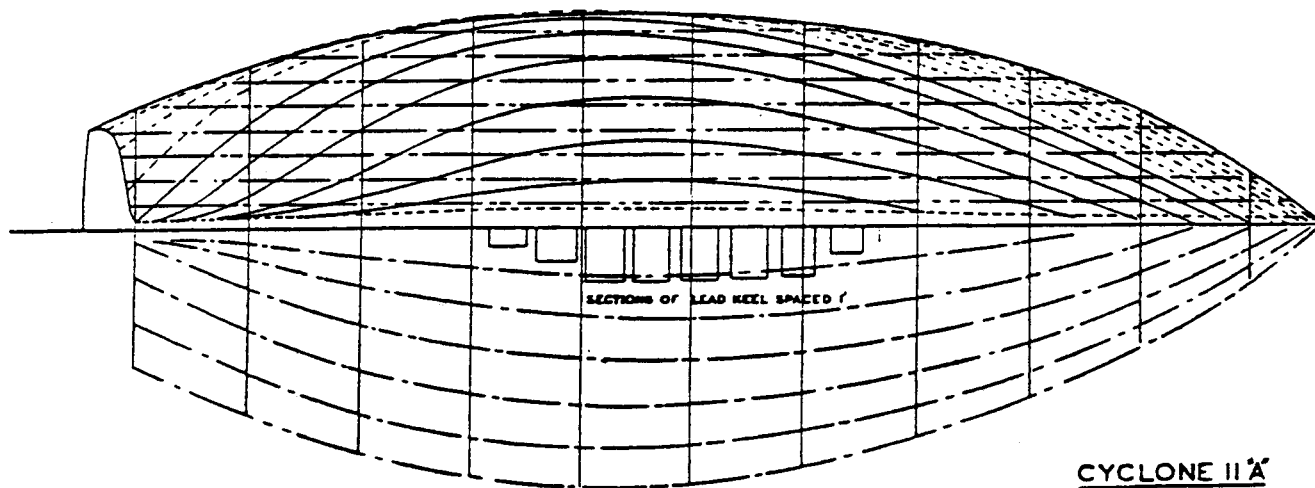
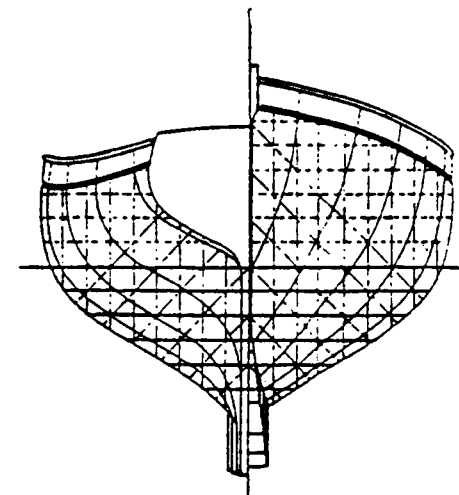
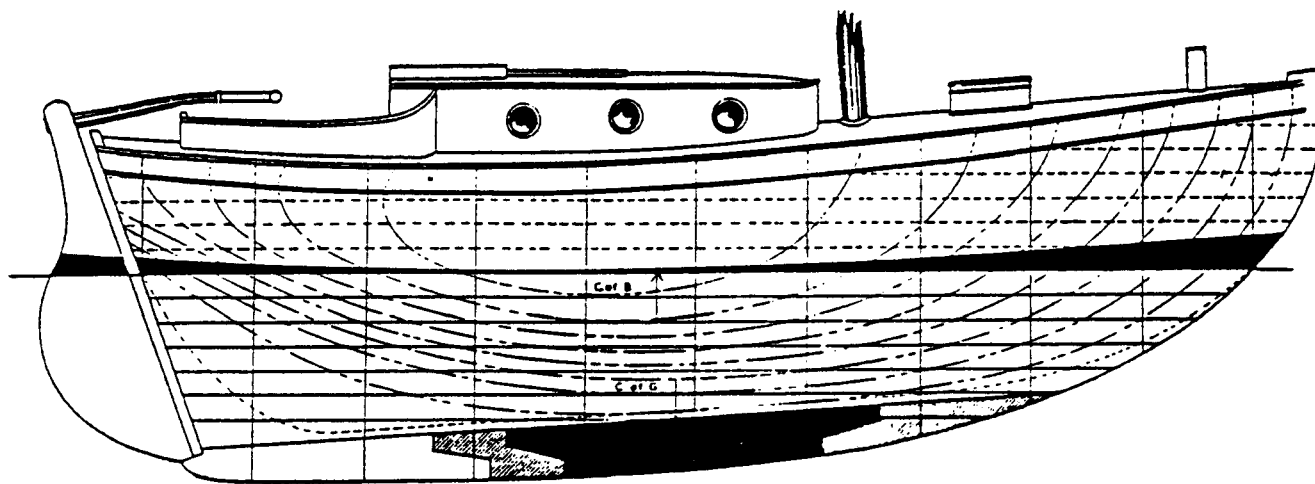
Mainsail .. 250 sq.ft.
 Foresail .. 80 sq.ft.
 Jib 75 sq.ft.



CYCLONE II 'A' DESIGN 1934

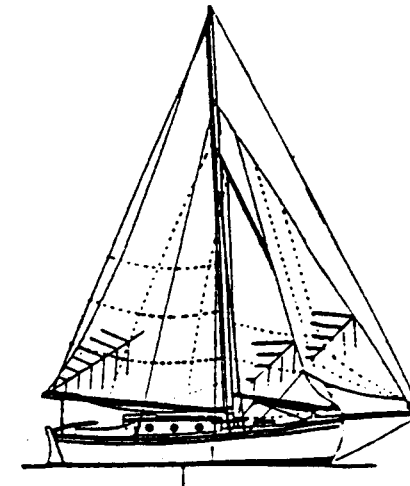
LOA 25 ft 7in. LWL 23 ft. Beam 8 ft 9in. Draught 4 ft 3in. T.M. 6.8 tons.

Displ. 5.8 tons. Keel Lead/Iron 2.3/1.45 tons. Sail Area No data.



CYCLONE II 'A'

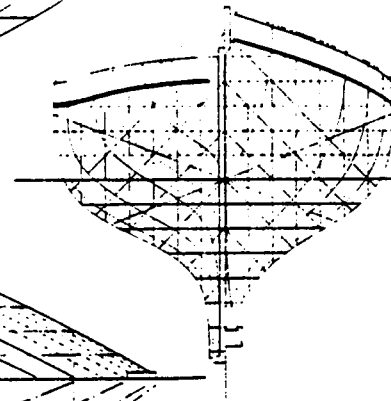
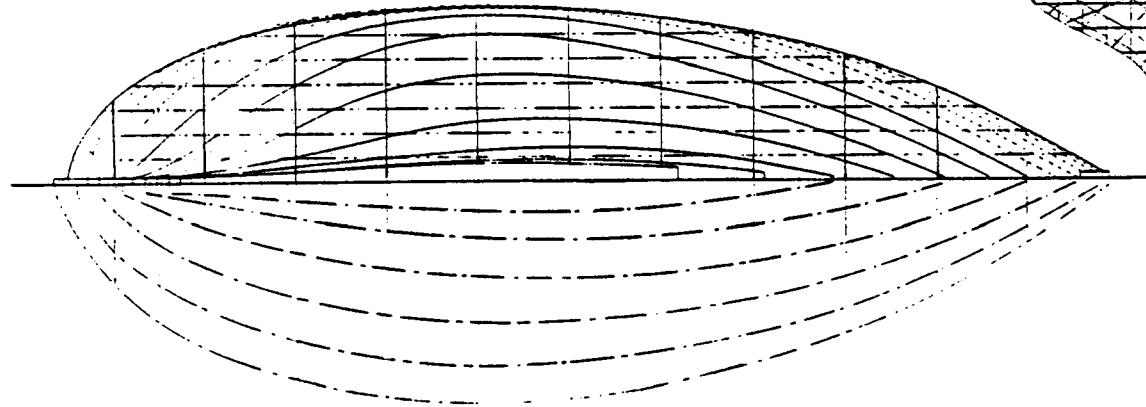
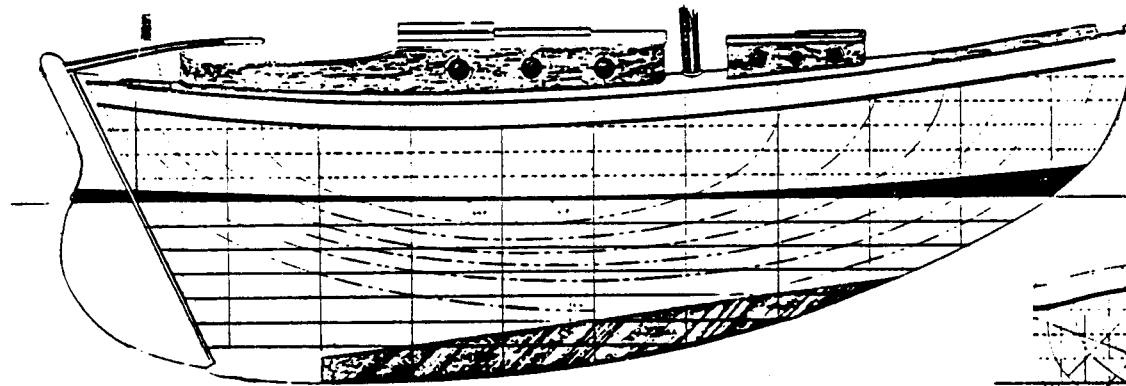
SCALE:



This is a slightly larger version of the CYCLONE II design. T.H.B. had thought of having her built by Anderson, Rigden & Perkins at Whitstable but decided instead to have VINDILIS built by Moody at Hamble.

PÉPIN DESIGN 1933

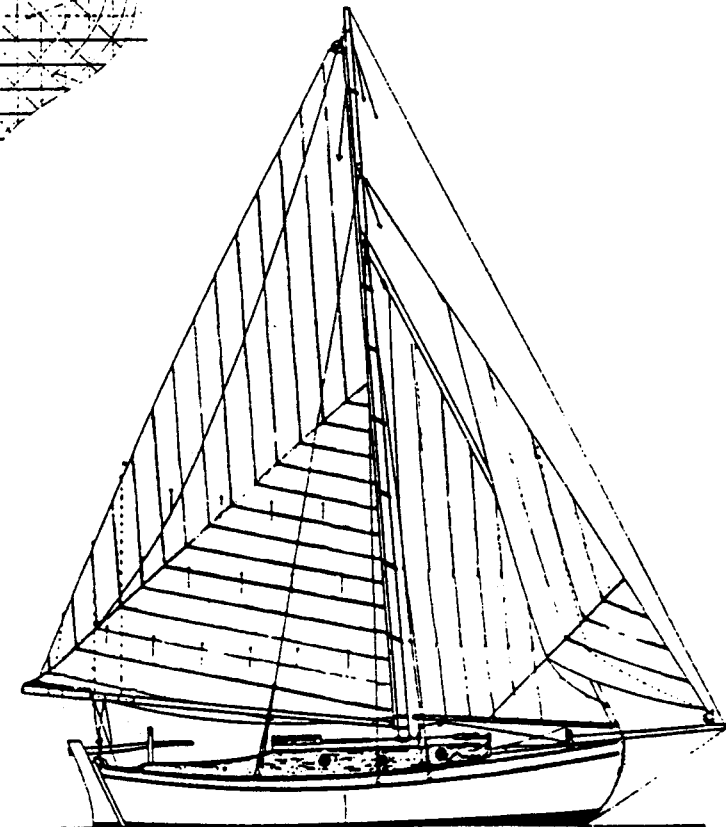
LOA 22 ft. LWL 19 ft. Beam 7 ft. 2in. Draught 3 ft 9in.
 Displ. 3 tons. Iron keel 1.1 tons. Sail Area 320/260 sq.ft. T.M. 4 tons.



An alternative sloop rig was also drawn with a total area of 260 sq.ft.

This design was published in the *'Journal of the Little Ship Club'* in January 1934. It is the only known design for which T.H.B. drew a Loch Fyne Skiff stern.

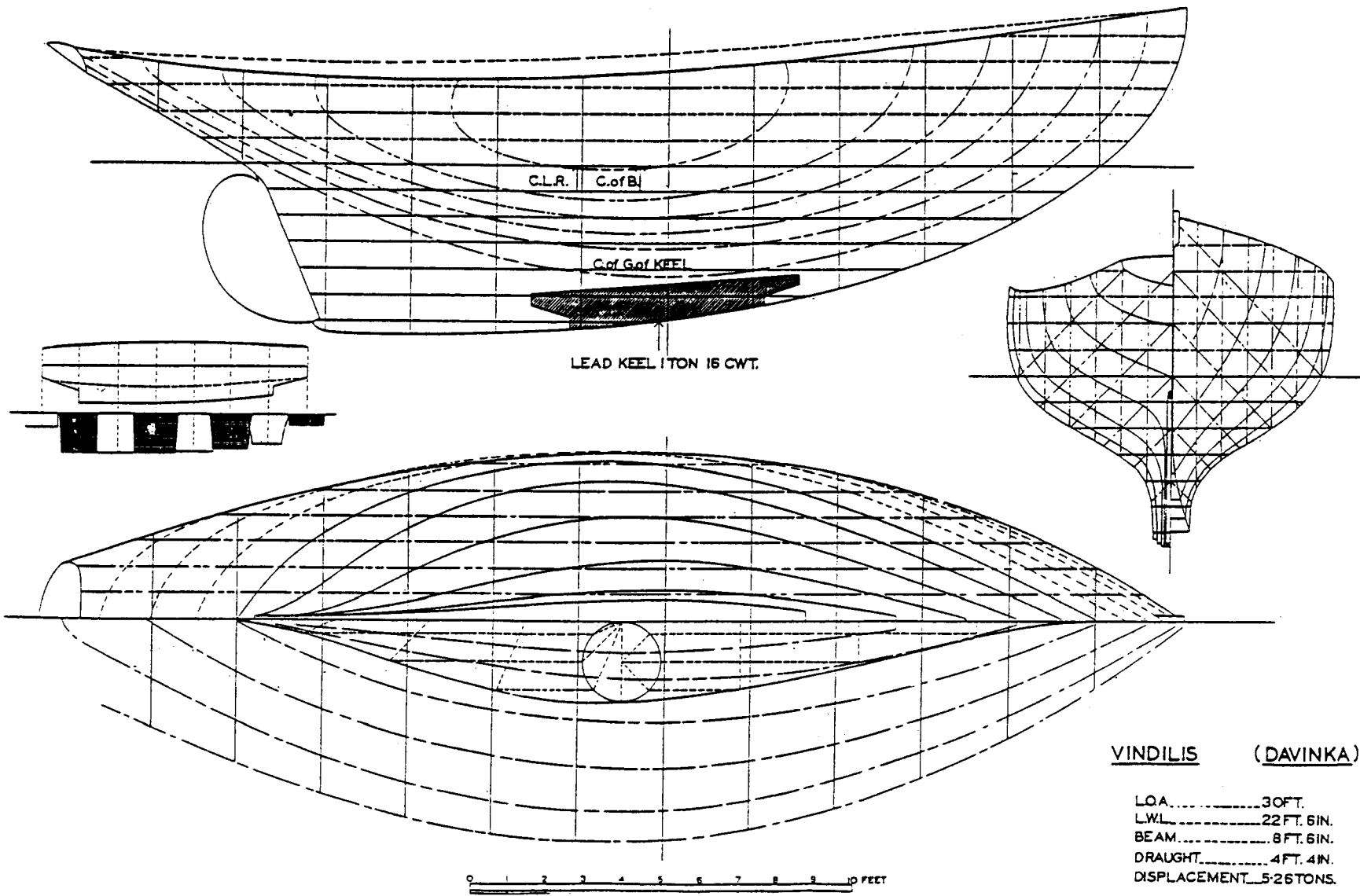
This is a pre-metacentric design. Although her analysis was later found to be not perfect, moment curve 'a' greater than 'c', no hard-headed behaviour has ever been exhibited, even in the squalliest of conditions.

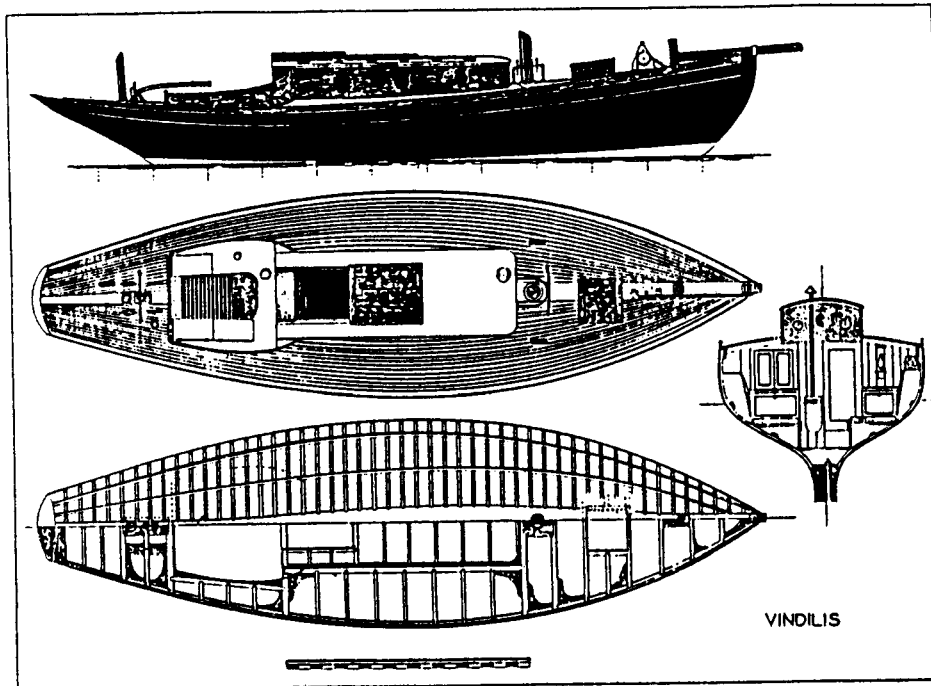


DAVINKA/VINDILIS DESIGN 1925/1935

LOA 30 ft. LWL 22 ft.6 in. Beam 8 ft.6 in. Draught 4 ft.4in.

Displ.5.26 tons. Lead keel 1.8 tons. Sail Area 410 sq.ft. T.M. 6.5 tons.





Vindilis, 6 tons T.M., designed by Dr. T. Harrison Butler for himself.

The DAVINKA design was originally drawn in 1925 as an entry for a competition promoted by 'Yacht Sales & Charters' and won second prize.

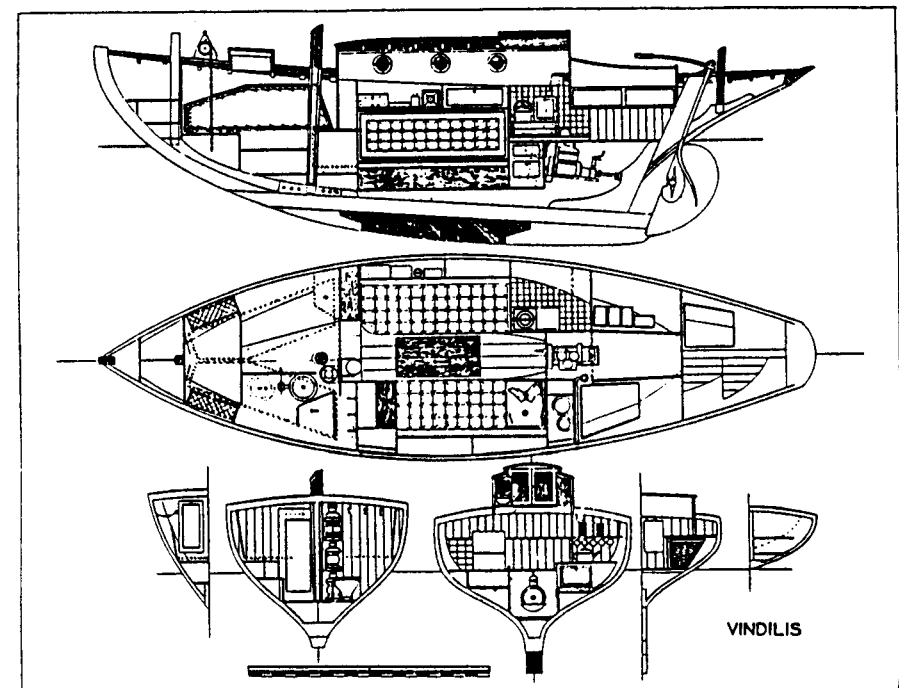
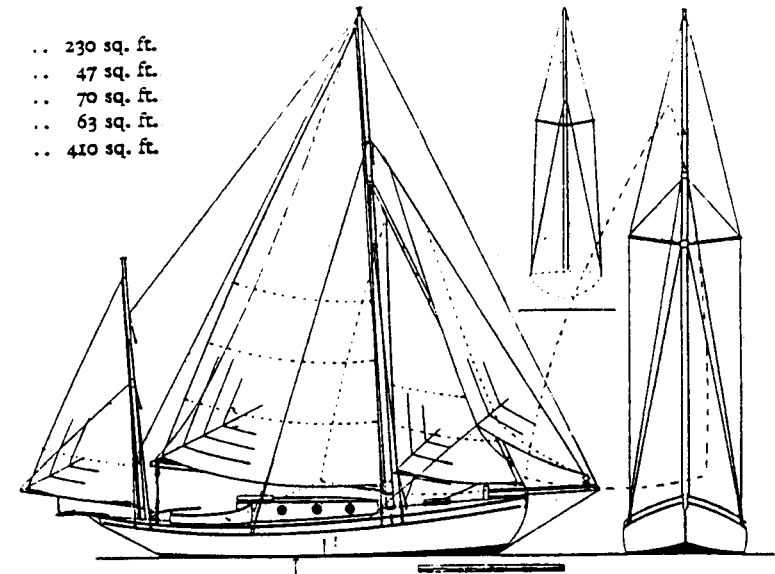
When T.H.B. decided to build to the design in 1935 the name VINDILIS was chosen. As there was already a design called VINDILIS he put both names on the plans to avoid confusion.

The keel weight on the Y.M. drawings is 1.9 tons. The details in F.B.Cooke's 'Cruising Hints' give 1.8 tons. In fact when she was launched some lead was removed from the keel and the final weight was approx 1.75 tons.

After gaining some experience with his new boat T.H.B. wrote: "There is always something to be learned in building a new yacht. I ask myself what changes I would make if I were building another Vindilis. First and foremost I would try to get the weight of the hull and internal fittings lower."

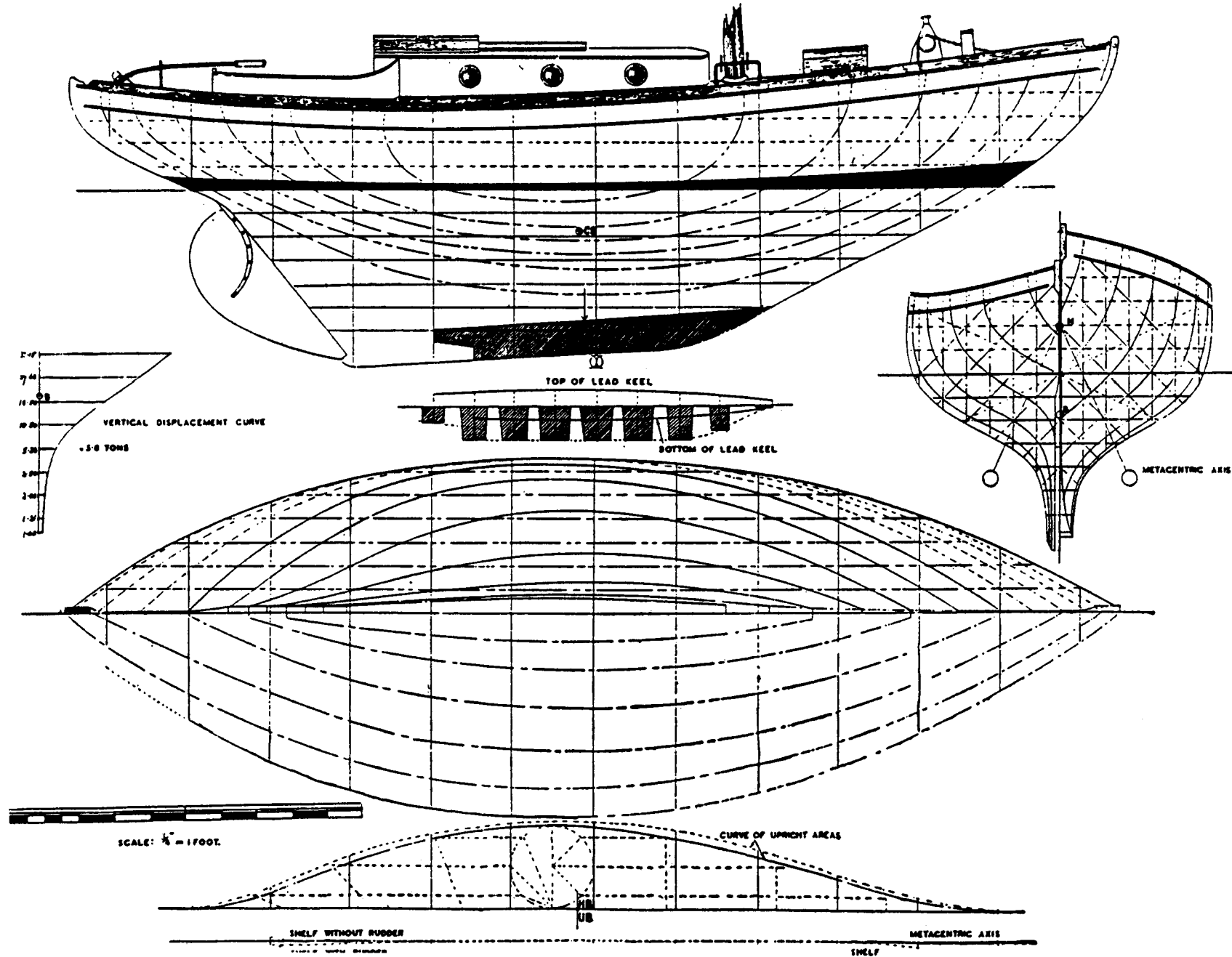
He also considered that a canoe stern would give 6 in. or more on the LWL providing for more hanging space and 6 in. more draught would be advantageous.

Mainsail	..	..	230 sq. ft.
Mizzen	..	..	47 sq. ft.
Foresail	..	..	70 sq. ft.
Jib	..	..	63 sq. ft.
T.S.A.	..	..	410 sq. ft.



DREAM OF ARDEN DESIGN 1944

LOA 30 FT. LWL 23 FT. Beam 8 ft. 8 in. Draught 5 ft. T.M. 8 tons.
 Displ. 6 tons. Lead keel 1.94 tons. Ballast 7 or 8 cwt. S.A. 395 sq.ft.



This design is a development of ROSE OF ARDEN. T.H.B. wrote: "The chief change I have made is in the profile. The original one-sweep profile has a long leading edge which is said to be advantageous to windward, but none of the chief racing yachts adopt it, so it is probable that the broken profile with a 'toe' has been found to be the fastest design.

Apart from speed and weatherly qualities the profile that I have adopted in this new design has other points that make it desirable. In the first place, for the same draught, it brings the centre of gravity of the ballast lower. Then the shape of the keel cuts into far less wood, especially if an iron keel be fitted.

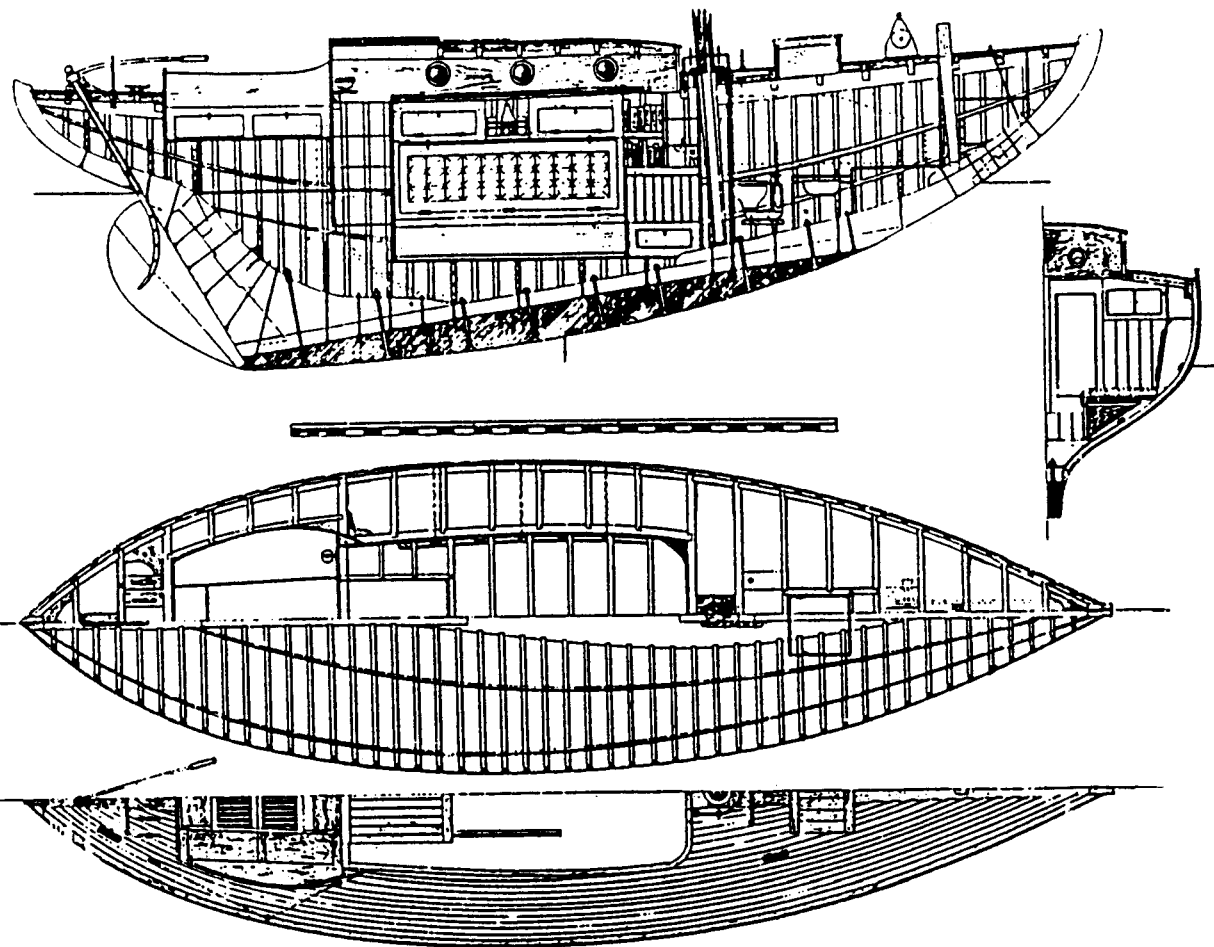
The profile of the ROSE is a poor one for hauling out or for putting against a post for scrubbing. Weighing the pros and cons against each other it would appear that the new profile has the pull over the old one, the clean sweep from stem to keel.

There is another factor that might be considered. The clean-sweep profile, with its drag aft, is said to confer good running ability. Is this the case? The old-fashioned long keel craft is not handy; she does not easily come about or alter her line of travel. This ought to mean that she runs well, and so she does under ordinary conditions. My old SANDOOK, with her long straight keel, with massive deadwood aft, ran beautifully under all ordinary circumstances.

To settle the question which runs best, the long or the short keel, we can study the model yacht. All model designers know that the long keel is no good. If a model will not run straight she cannot, however fast she may be, win races, and the long keel type will not run.

It is said that the dead-wood aft confines the outflow of the bilge stream, throws it up against the counter, and makes for uneasy running. The modern model has her after dead-wood drastically cut away, and her keel becomes almost a fin.

These models, the short fin type, win the races, they run straight and get there. It seems obvious that the same must be true of larger yachts.



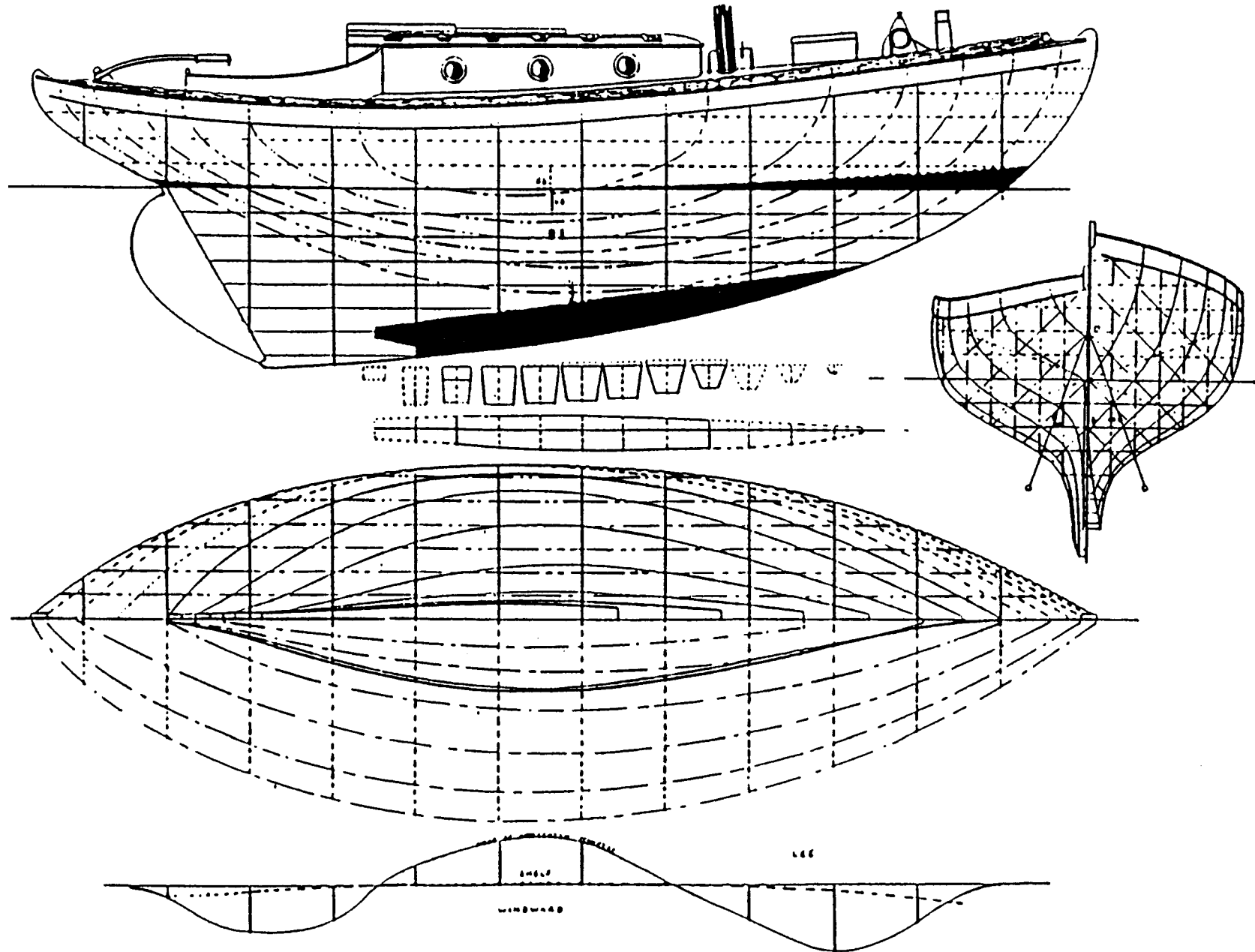
The accommodation and sail plan of DREAM OF ARDEN are the same as those of ROSE OF ARDEN. As no accommodation plan is available for DREAM that of ROSE is shown above. Note the absence of a 'toe' in the profile.

The alterations in the profile of the ROSE called for slight alterations in the bow to maintain the metacentric balance. It has been filled out very slightly. When I made the analysis I was delighted to find that the 'shelf' was practically a straight line, and that the hull was a metacentroid. The centres of the curves of heeled and upright areas coincide, and so the yacht is theoretically perfectly balanced."

EDITH ROSE DESIGN 1936

LOA 29.5 ft. LWL 23.0 ft. Beam 8.5 ft. Draught 5.0 ft. T.M. 7.5 tons.

Displ. 5.5 tons. Keel Lead 1.7 tons, Iron 1.8 tons. Sail Area 413 sq.ft.



T.H.B. writing of EDITH ROSE says: "When I published a description and design of my own yacht VINDILIS in the Y.M. I suggested that Mr. Robert Clark and myself might together design a more perfect craft, that would harmonize with the metacentric shelf principle. Mr. Clark found himself too busy to carry out this joint effort, but he very kindly gave me some suggestions for modifying the bow and stern so that the design might become 'metacentric' I adopted his advice regarding the bow, but used the afterbody of ENGLYN.

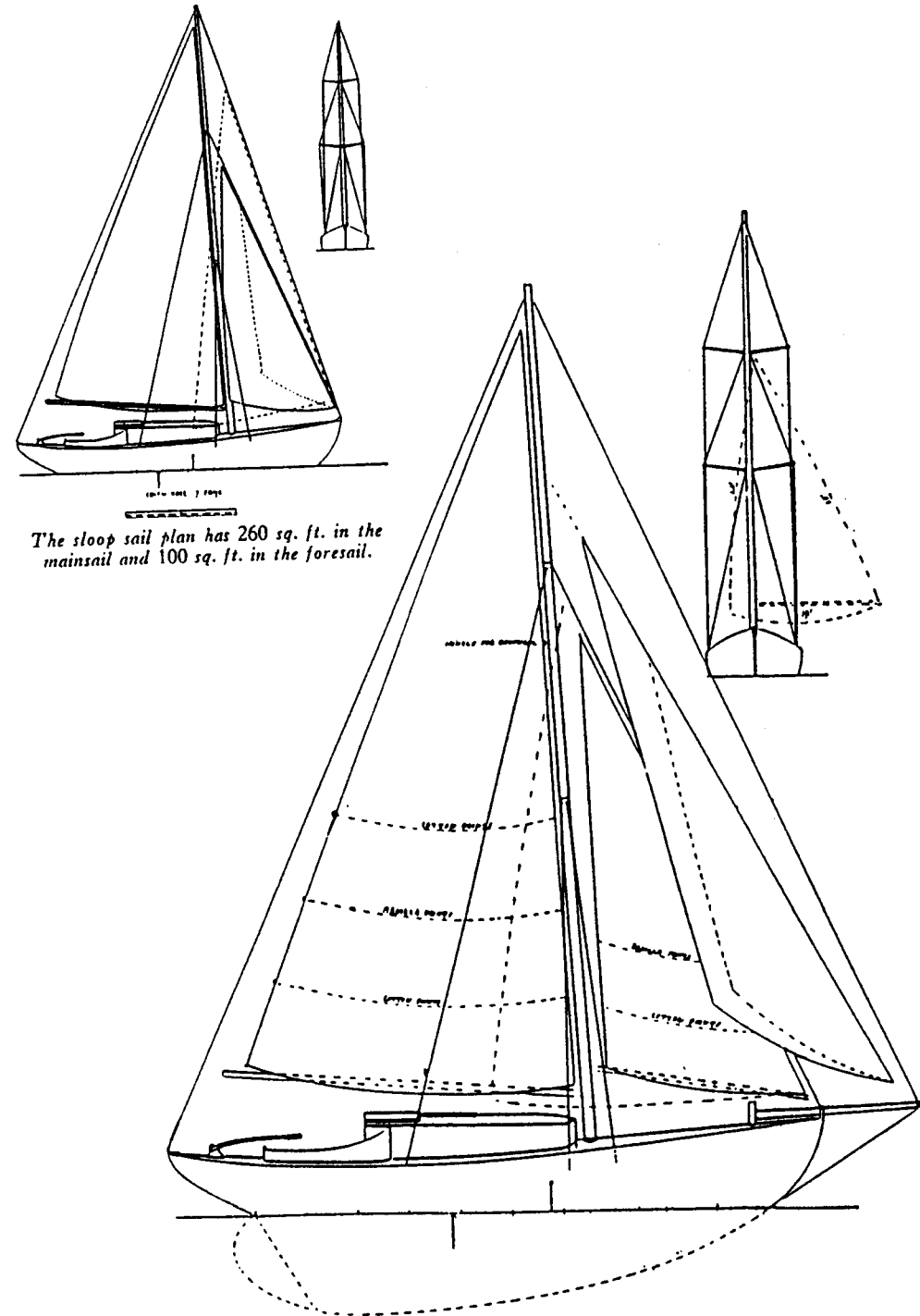
EDITH ROSE is the result. She is a metacentroid and has an excellent metacentric shelf. The bow waterlines of VINDILIS were filled out and the after waterlines contracted. The waterline length has been increased 6 in. to 23 ft., and the draught to 5 ft.

The increase in waterline length was adopted mainly to give 6 in. more length in the fo'c'sle, and so afford more room for hanging oilskins, etc. this is the only fault with the lay-out of VINDILIS, and the extra six inches will cure it. The canoe stern was chosen because in a beamy boat it is difficult to match the fine after waterlines with a shapely counter. In spite of the extra length on the LWL, the canoe stern shortens the LOA by six inches, so the two yachts will cost the same to build.

The drawings show the lines, the metacentric analysis and two sail plans. The cabin plan will be the same as in VINDILIS except that the fore bulkhead will be six inches further aft.

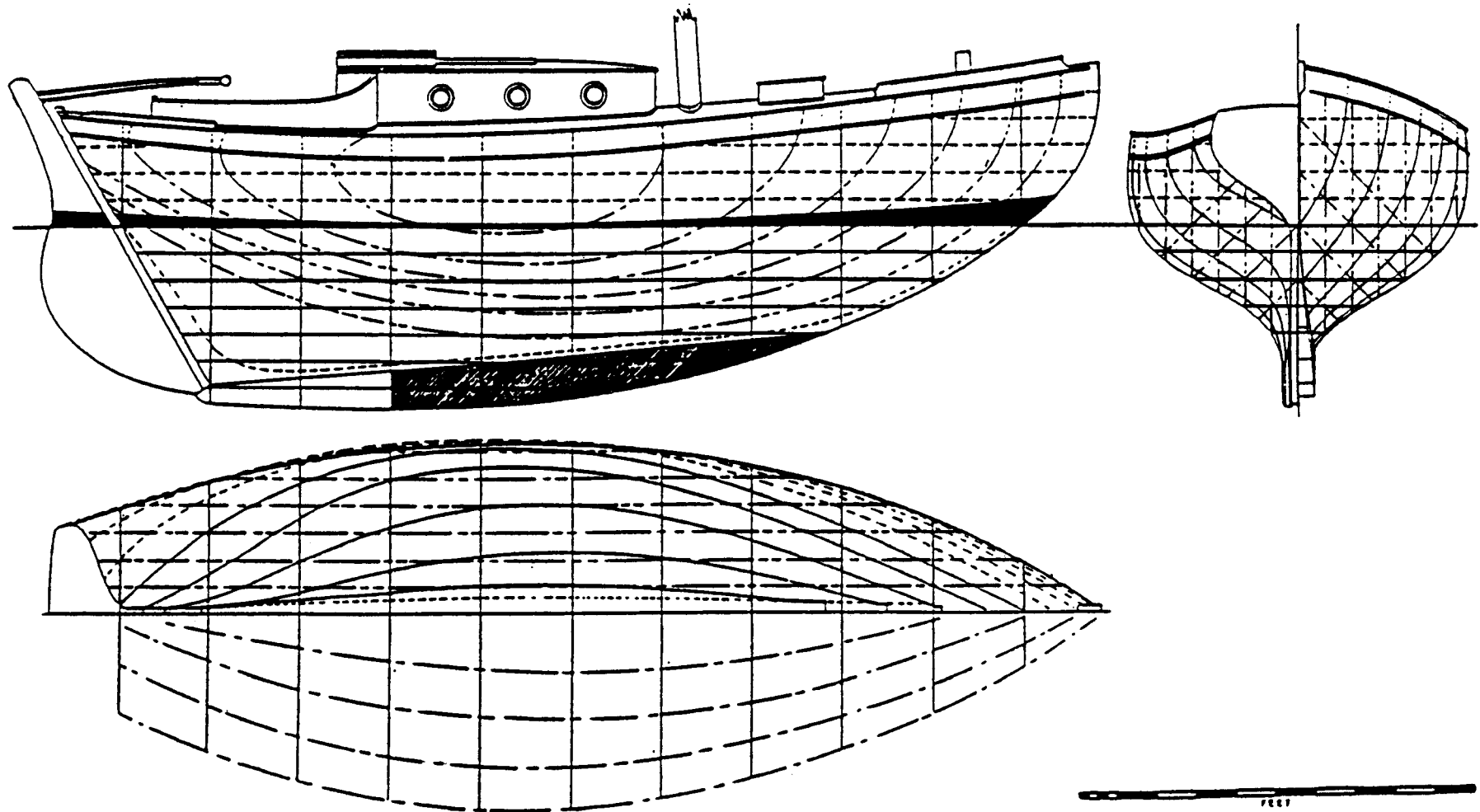
Two rigs are given - cutter and stemhead sloop. Whereas the balance of the hull will be good (it should be perfect), the sloop rig can safely be adopted without any fear that the yacht will pull too much in a hard wind."

<u>CUTTER RIG</u>	Mainsail	253 sq.ft.	2nd. Jib	45 sq.ft.
	Foresail	86 sq.ft.	Balloon Stays'l	175 sq.ft.
	Jib	74 sq.ft.	Spinnaker	168 sq.ft.



ENGLYN DESIGN 1932

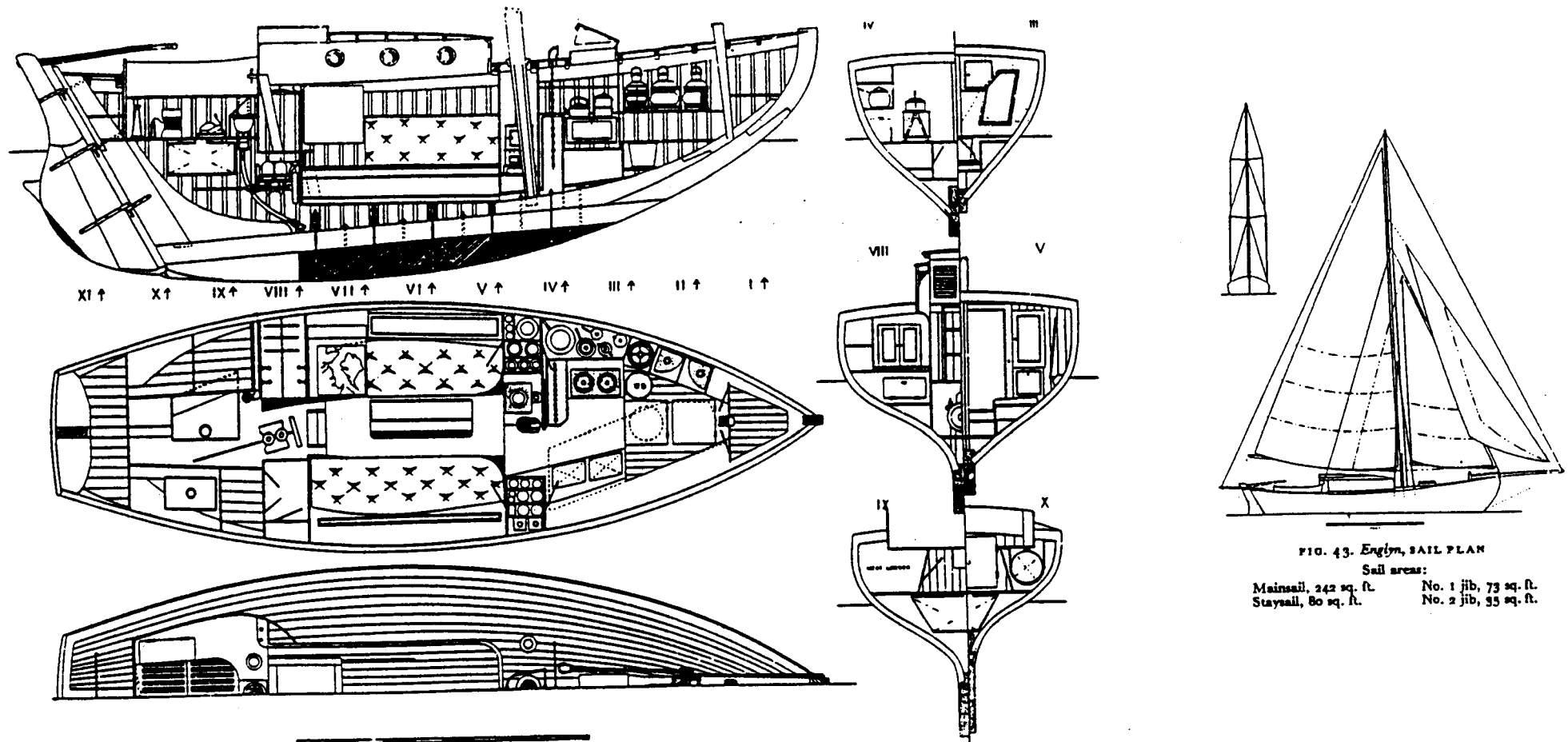
LOA 26 ft.1in. LWL 22 ft.6in. Beam 8 ft.6in. Draught 4 ft.6in.
 Displ. 5.5 tons. Iron/Lead keel 1.5/2.36 tons. S.A. 395 sq.ft. TM 7 tons.



This design was drawn for the 1st. Edition of F.B.Cooke's book *WEEK-END YACHTING*, published in 1933.

Describing the design T.H.B. wrote: "This is the result of evolution. The original CYCLONE has been built in considerable numbers, and has proved to be satisfactory.

I enlarged that drawing proportionately to a LWL of 22.5 ft.- CYCLONE II. Six of these yachts have been built. They are handy and seaworthy and will heave-to under headsails alone, and in smooth water will turn to windward with this combination of sails. But all of them have a tendency to pull hard with a strong wind on the quarter.

FIG. 43. *Englyn*, SAIL PLAN

Sail areas:

Mainsail, 242 sq. ft.	No. 1 jib, 73 sq. ft.
Staysail, 80 sq. ft.	No. 2 jib, 55 sq. ft.

As an improvement I designed YONNE. This yacht is practically an enlargement of No 16 TABLOID. Englyn is a development of YONNE.

On the same dimensions and displacement the stern has been fined down to give a better balance between the fore and aft bodies. The transom is narrower and the quarters finer. When heeled to 20 degrees the centre of buoyancy moves forward only one inch which is negligible.

The design has been made on a log keel with parallel sides. This is to give greater strength and to make the yacht easier and cheaper to build. The keel shown can be either iron or lead. If lead is chosen, some adjustment may be necessary according to the weight of the engine.

With a light engine a little will probably have to be cut off the forward end, because the weight is close to the total amount of ballast necessary with ordinary robust construction.

The lay-out speaks for itself. The cockpit can be made deeper if desired, and the galley come aft without any material alteration in the bulkheads.

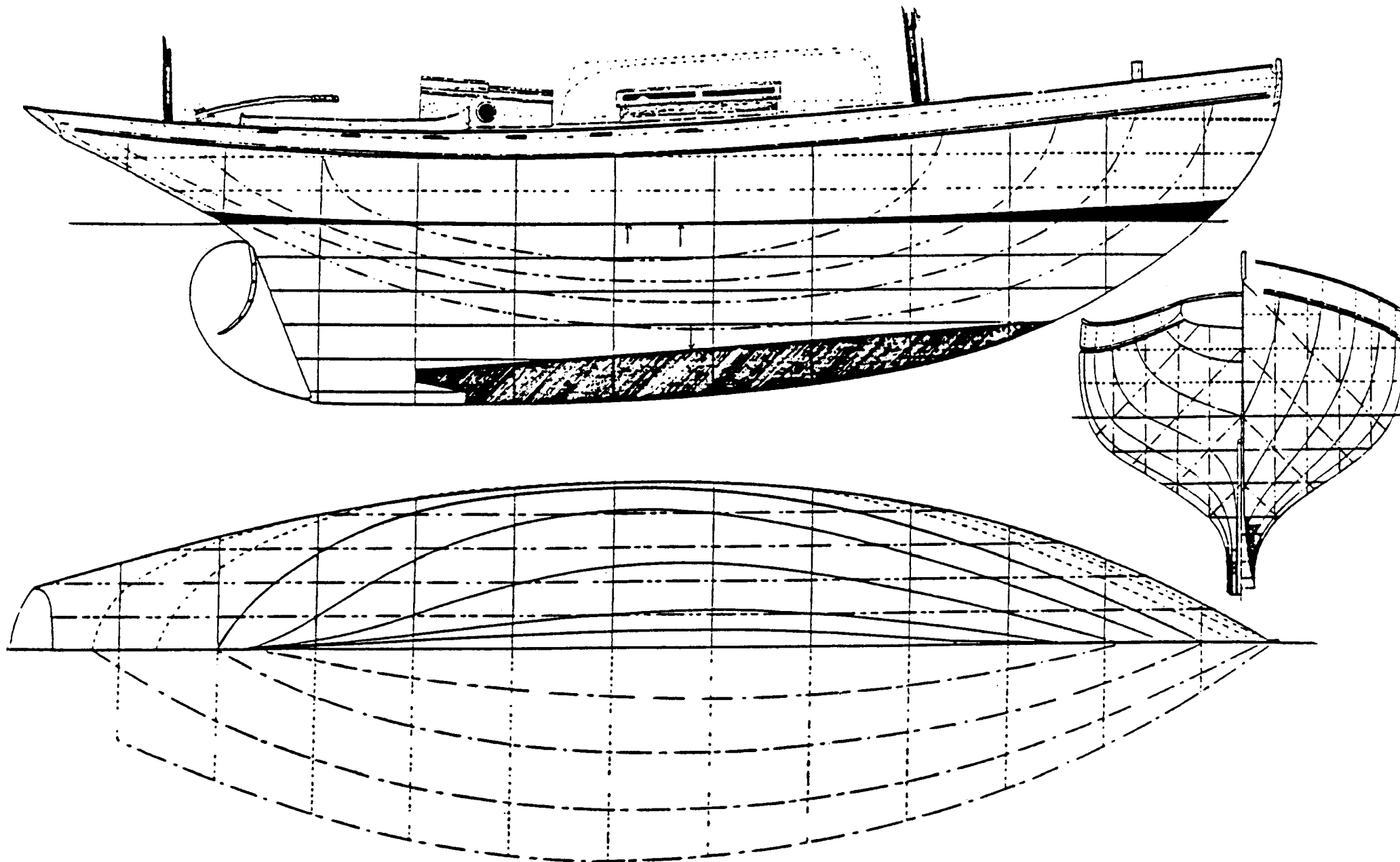
The compass is under the bridge deck and is viewed through a sloping window which can be covered by a hinged flap. It will be electrically lighted. It is rather near the engine, but this cannot be avoided.

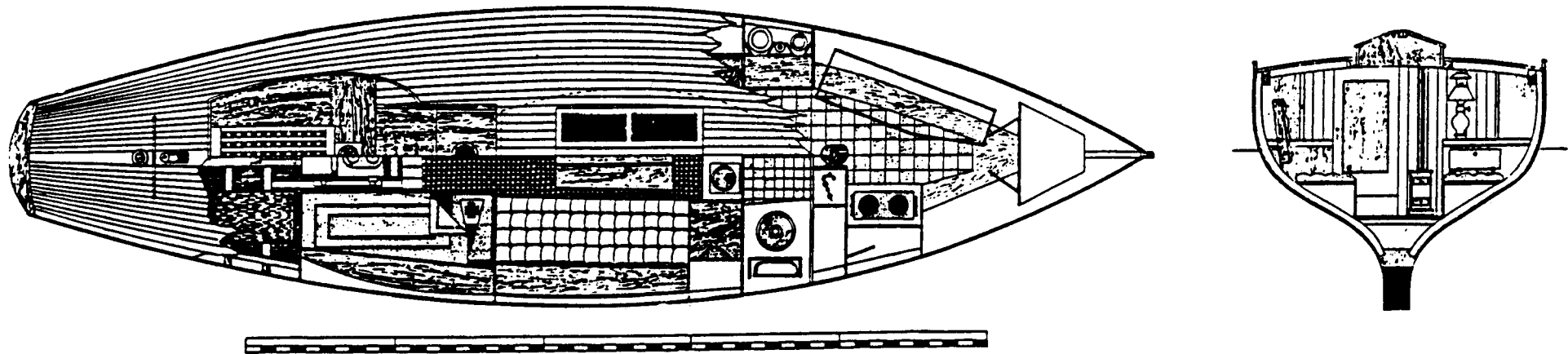
A 6 H.P Watermotor, or Stuart Turner, is shown. But there is ample room for a larger model.

FASTNET DESIGN 1928

LOA 39 ft. LWL 30 ft. Beam 10 ft. Draught 5.3 ft. T.M. 13.3 tons.

Displ. 10 tons. Iron keel 3.3 tons. Sail Area - Yawl 850 sq.ft.





T.H.B. wrote of this design: "The object in designing FASTNET was to produce a handy and good sea boat with a reasonable turn of speed, which could be handled easily by two amateurs. The water-line of 30 ft. admits the yacht to the short 'Ocean Race'.

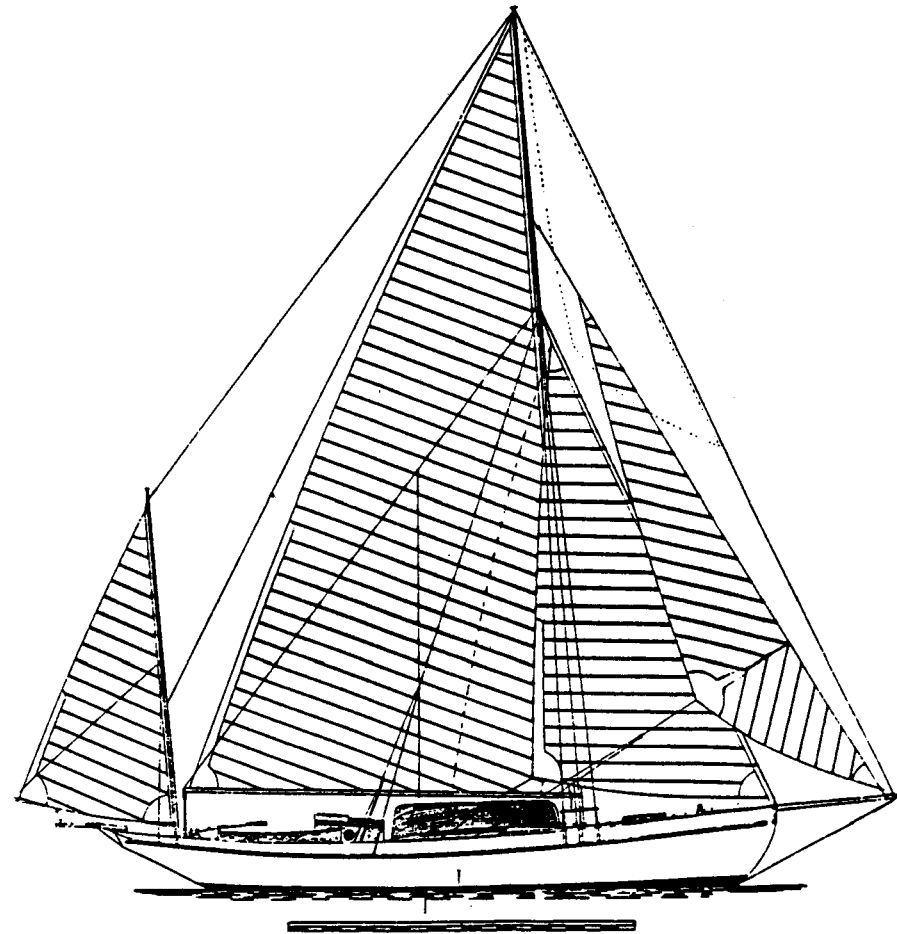
If really serious cruising in all weathers were contemplated it would be better to replace the skylight by a small cabin top of about the same size with opening ports in the sides and front, or to adopt a skylight with ports instead of panes, such as are seen on the engine room skylight of some steam-ships.

The lay-out has been planned to admit of a paid hand if necessary. If such were never carried it would be a good plan to make the forecabin a definite sleeping cabin with two fixed berths."

YAWL - SAIL AREAS

Mainsail....	480 sq.ft.	Staysail...	170 sq.ft.
Jib.....	103 sq.ft.	Mizen.....	97 sq.ft.

A schooner rig with a total area of 760 sq.ft. was also drawn.

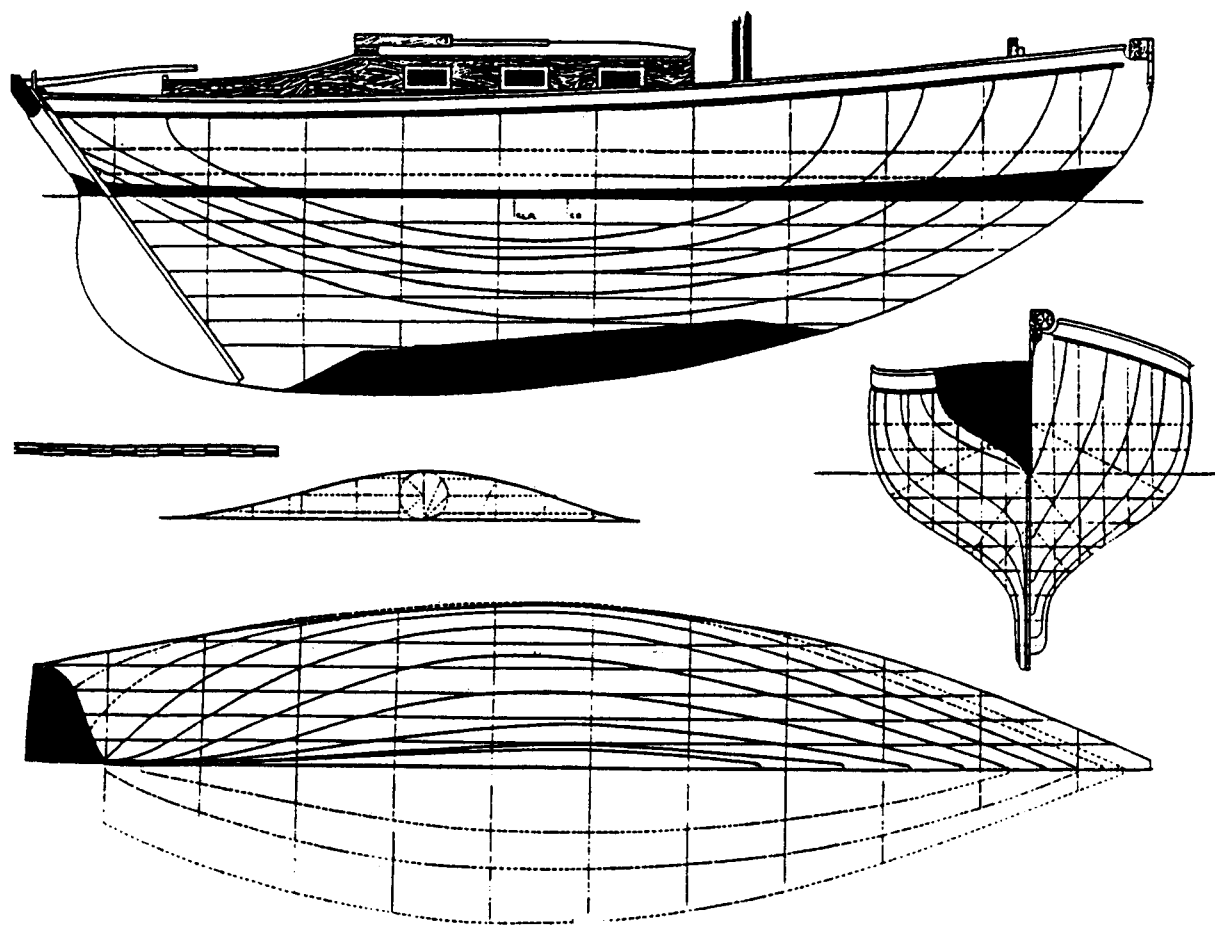


HONG KONG DESIGN 1909

LOA 23ft. LWL 20ft. Beam 6ft.8in. Draught 4ft. or 3ft.6in.
Sail Area 310 sq.ft. Displacement 3 tons. T.M. 3.78 tons.

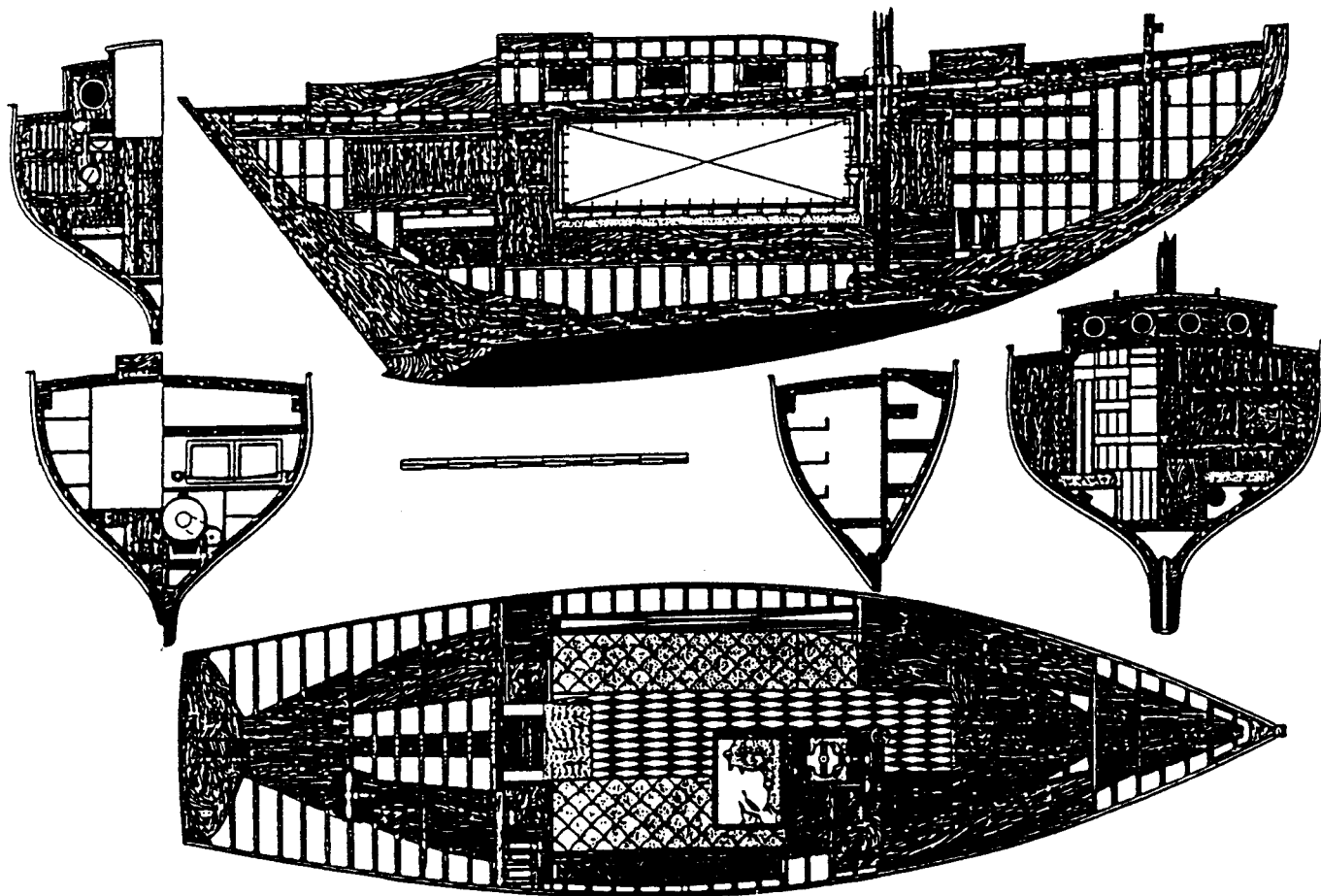
T.H.B. wrote in May 1911 that several boats had been built to this design, four of them in Hong Kong where they formed a one-design class.

These are believed to be the first HB boats built.



AN AUXILIARY SINGLE-HANDED CRUISER.

SIR,—The YACHTING AND BOATING MONTHLY has published some excellent designs for single-handed cruisers, ranging in size from Mr. McCallum's little 16.5 L.W.L. sloop Shira up to the ketch-rigged "canoes" of over 10 tons. The smallest sizes have their advantages. They can be built at home, are cheap, and can get into waters denied to their larger sisters. The 10-tonners would be preferred for long open-water cruises, but that class of sailing described in "Swin, Swale, and Swatchway" would be impossible. In this book Dr. Lewis Jones suggests that a suitable boat should have "about 20ft. L.W.L., between 6ft. and 7ft. beam, 3ft. to 3ft. 6in. draught." In the accompanying design I have tried to fulfil these suggestions, but 3ft. draught is, in my opinion, too little for good windward work and to give the necessary cabin space. I have given two sheer plans. One has a 4ft. draught for ordinary stations, the other, with 3ft. 6in., would be better for the Thames, Severn, or Humber. The extra 6in. is taken off the heel and does not in any way modify the lines. The C.L.R. is thrown a little further forward, necessitating a larger jib. The stability of the two plans is almost the same. I have tried to design a boat which will be cheap to build, economical to run, and which would be safe, seaworthy, weatherly, handy, comfortable, and good-looking. Speed has not been even considered, but I believe that in a nice breeze the boat would be fast, for she has fine lines and a small displacement which is distributed exactly according to the wave-line theory. The curve of sectional areas is a curve of versed sines forward, a trochoid aft.

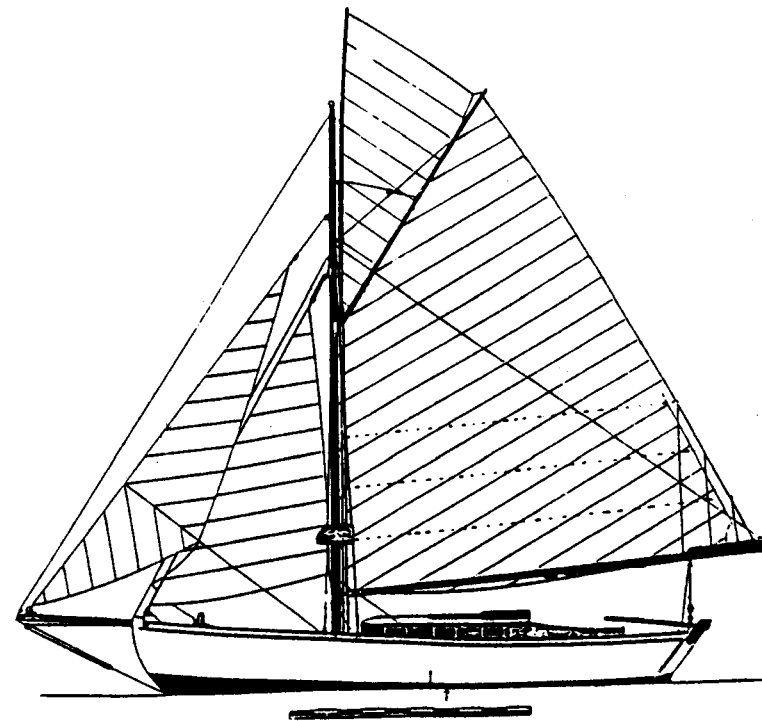


ARRANGEMENT AND CONSTRUCTION PLANS.

The drawings shown here were published in Yachting Monthly in June 1909. An excerpt from the notes which accompanied the design are reproduced above. T.H.B. ended these: "Should any reader think well enough of this design to build from it, I shall be glad to lend them a tracing of the original drawings."

The examples built in Hong Kong were rigged with a running topmast and 520 sq.ft. of sail. They proved tender and nearly a ton of extra ballast was added.

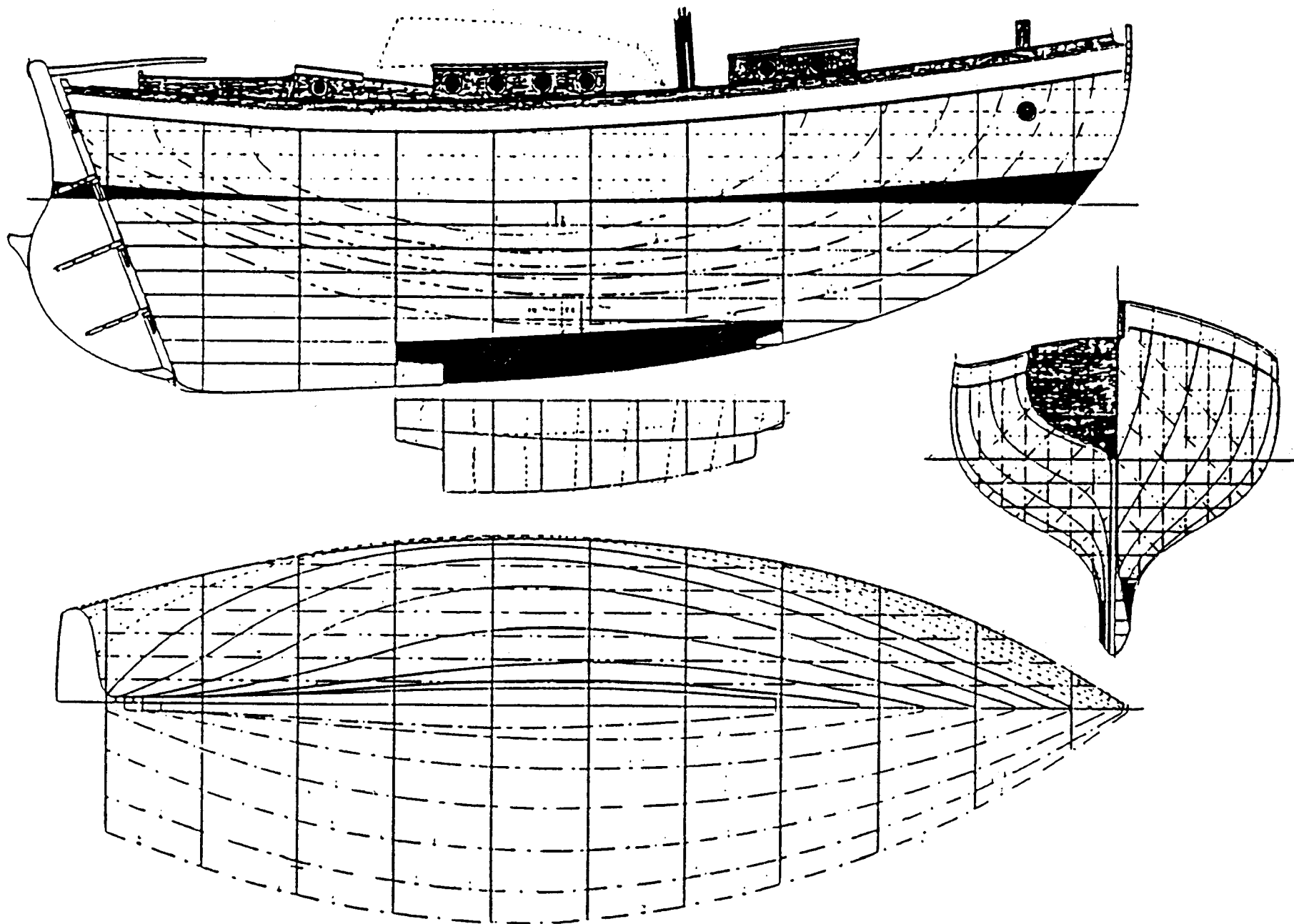
The Commodore of the club wrote "they are now excellent yachts but have a tendency to roll before the wind."



KHAMSEEN DESIGN 1930

LOA 31 ft. LWL 28 ft. Beam 9.75 ft. Draught 5.5 ft. T.M. 11 tons.

Displ. 8.96 tons. Lead keel 3.74 tons. Sail Area 557 sq.ft.



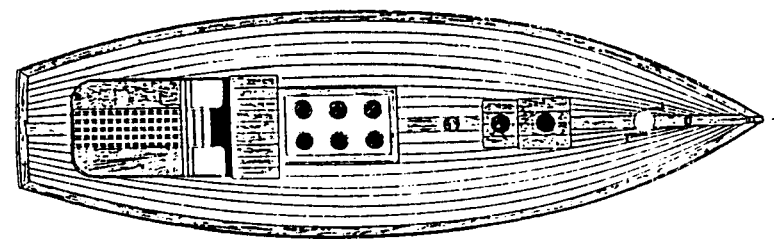
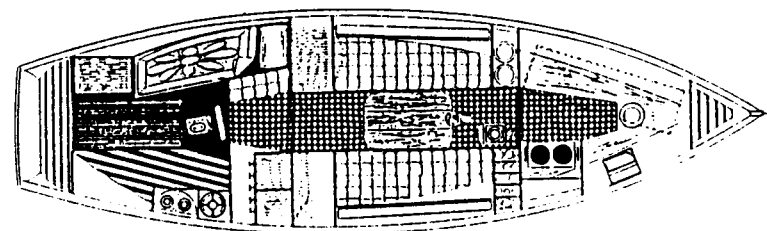
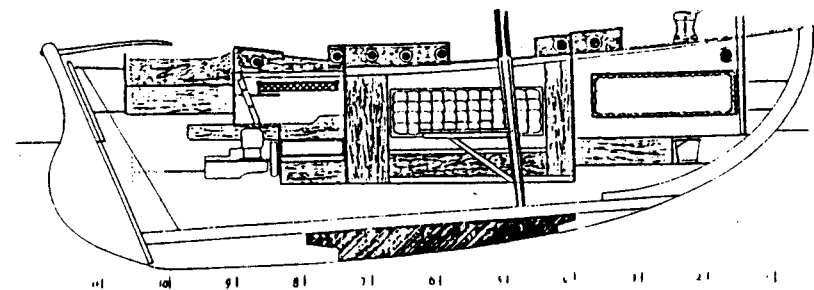
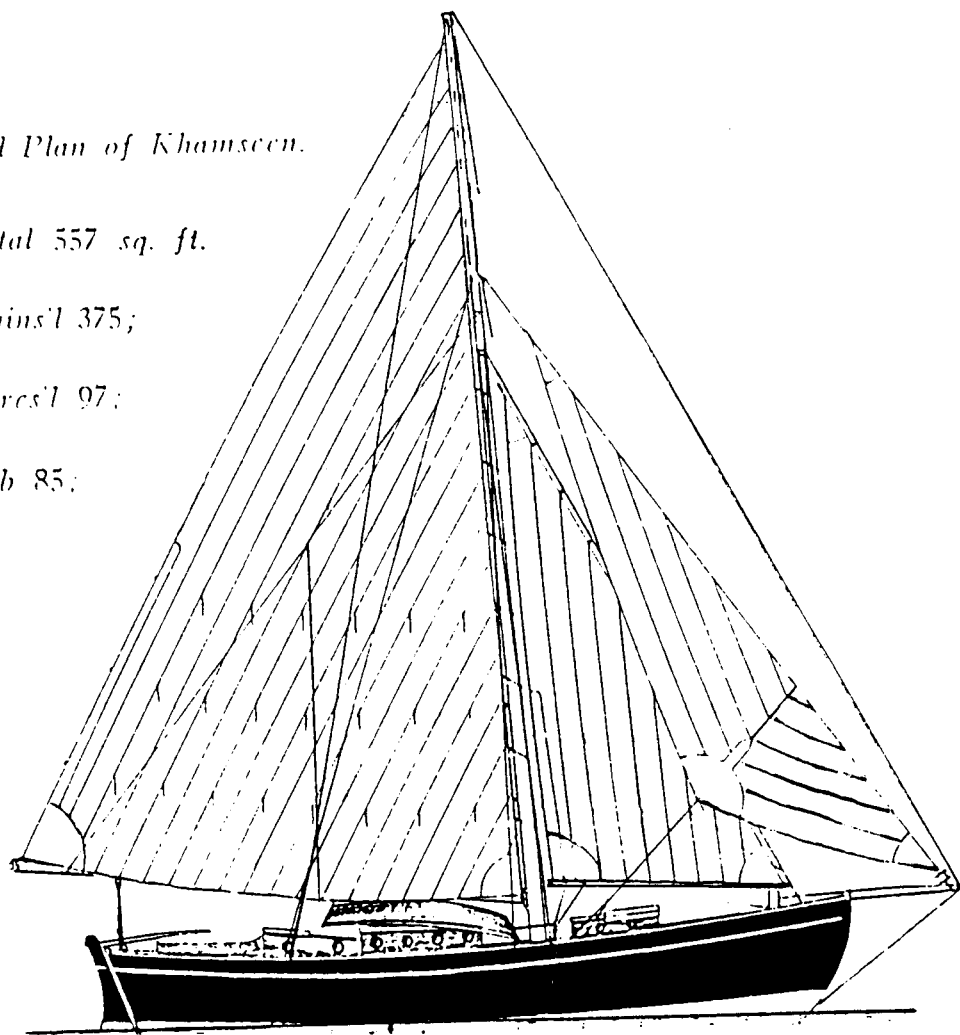
Sail Plan of Khamseen.

Total 557 sq. ft.

Mains'l 375;

Fores'l 97;

Jib 85;



Deck and Interior Lay-out Plans of Khamseen.

The requirements of the owner for whom T.H.B. designed KHAMSEEN were unusual. She was to be amateur built up country in Ceylon, to be transported to the sea and finally to be sailed home to England by her owner and a friend.

The Editor of Yachting Monthly commented that these conditions raised a host of difficulties which appear to have been cleverly met in this design, and her designer deserves great credit for his ingenuity.

Transport by road limited the displacement; amateur construction coupled with local difficulties necessitated comparative simplicity; while the intended long passage suggested the need for a vessel of the largest possible size for a crew of two.

A brief specification of the scantlings as drawn up by the designer is as follows:—

Keel: Oak or Elm, 6 in. sided.

Stem: Oak, sided 4½ in.

Sternpost: Oak, sided 4½ in.

Planking: Garboard 1½ in. to 1 in. pitch pine, topsides 1½ in.

Sheerstrake: Oak.

Deck: Oregon pine 1½ in. (covered with canvas).

Beams: Oak moulded 3 in. sided 2½ in.

Short beams: Oak moulded 2½ in. sided 2½ in.

Timbers: English oak, spaced 1 ft. 6 in. c. to c.

2½ in. sided 2½ in. moulded. Doubled to bilge stringer where shown in construction plan.

Carlines: Sided 2½ in. moulded 3½ in.

Shelf: 5 in. by 2½ in.

Bilge stringer: 5 in. by 2½ in.

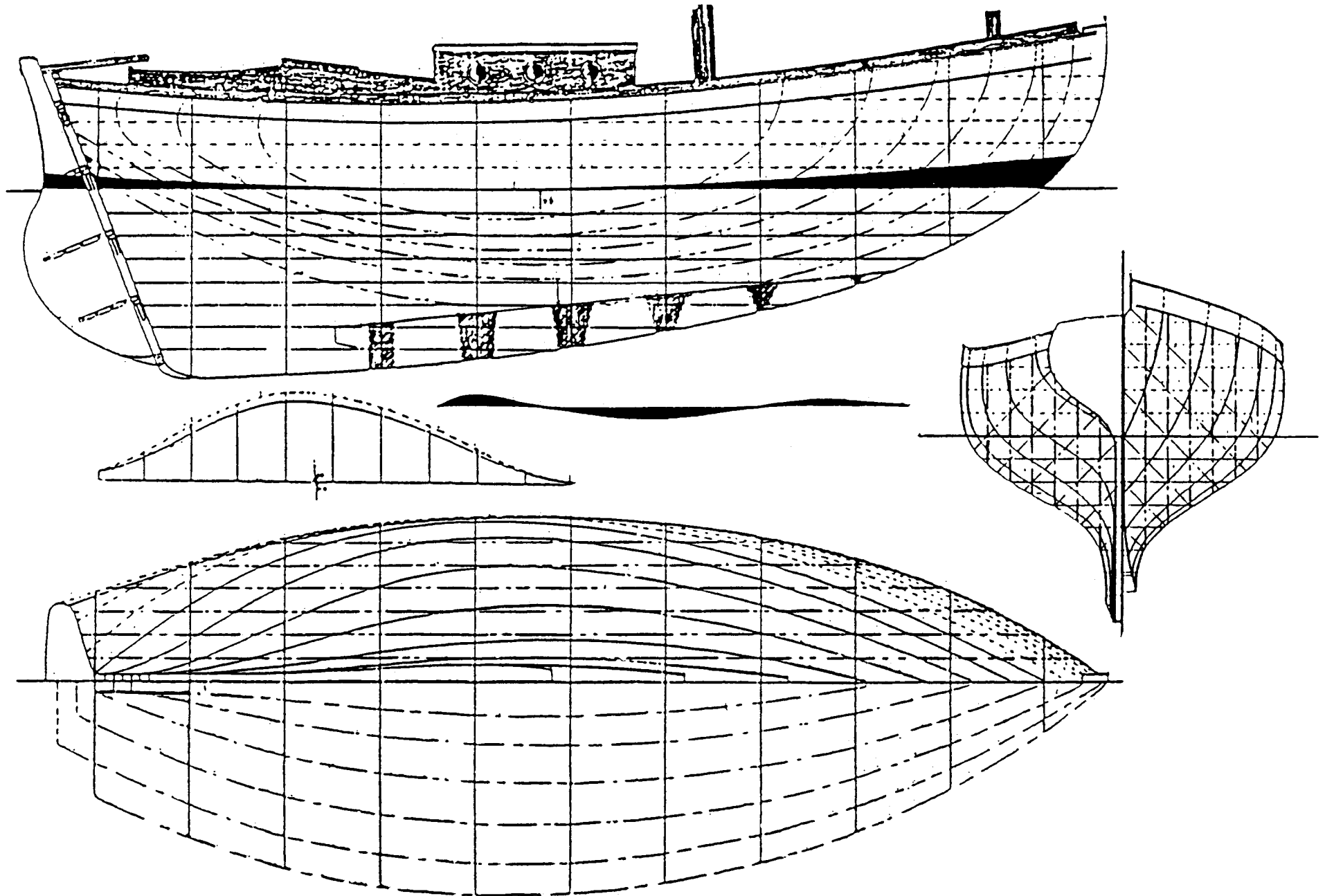
Wainings of companion and deck house: Teak 1½ in. thick.

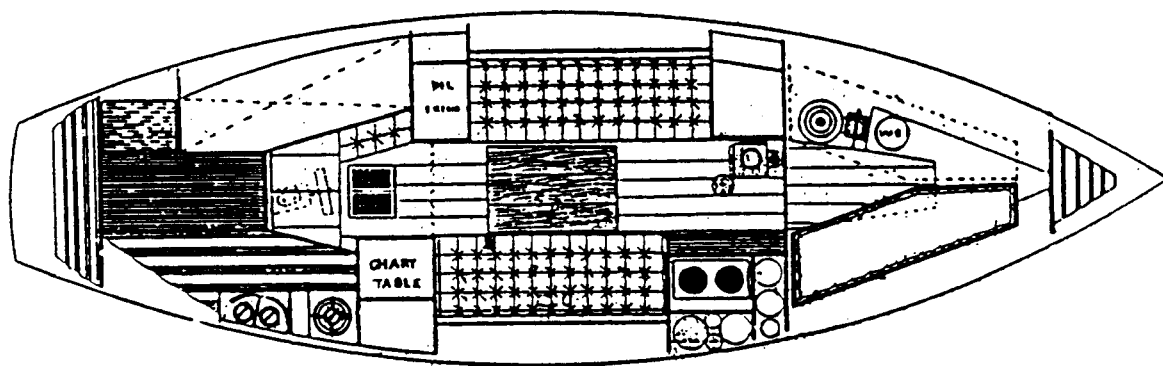
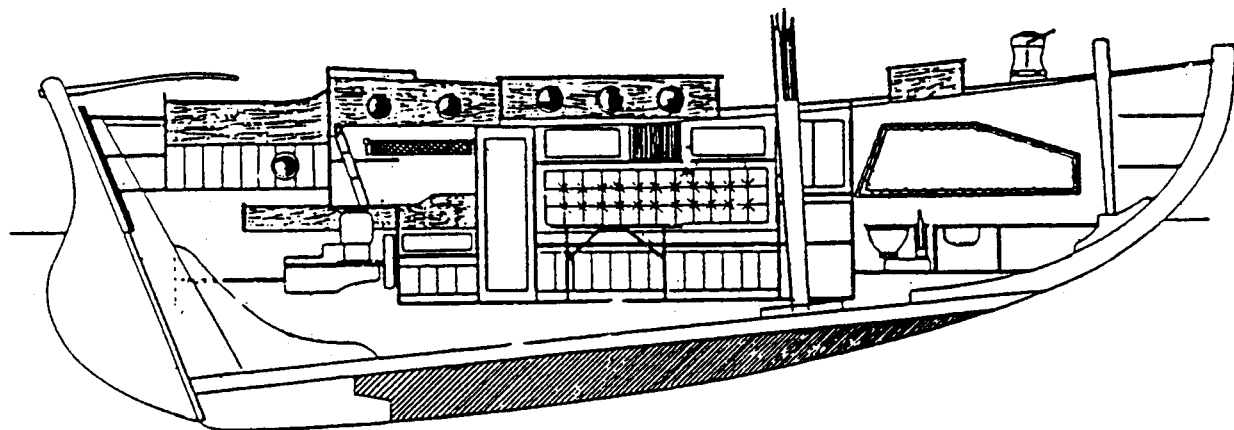
Breast Hook: Of oak or galvanised iron.

KHAMSEEN 'A' DESIGN 1941

LOA 31.5 ft. LWL 28 ft. Beam 9.5 ft. Draught 5.5 ft. T.M. 10.6 tons.

Displ. 8.8 tons. Iron keel 3.0 tons. Ballast 10 cwt. Sail Area 555 sq.ft.



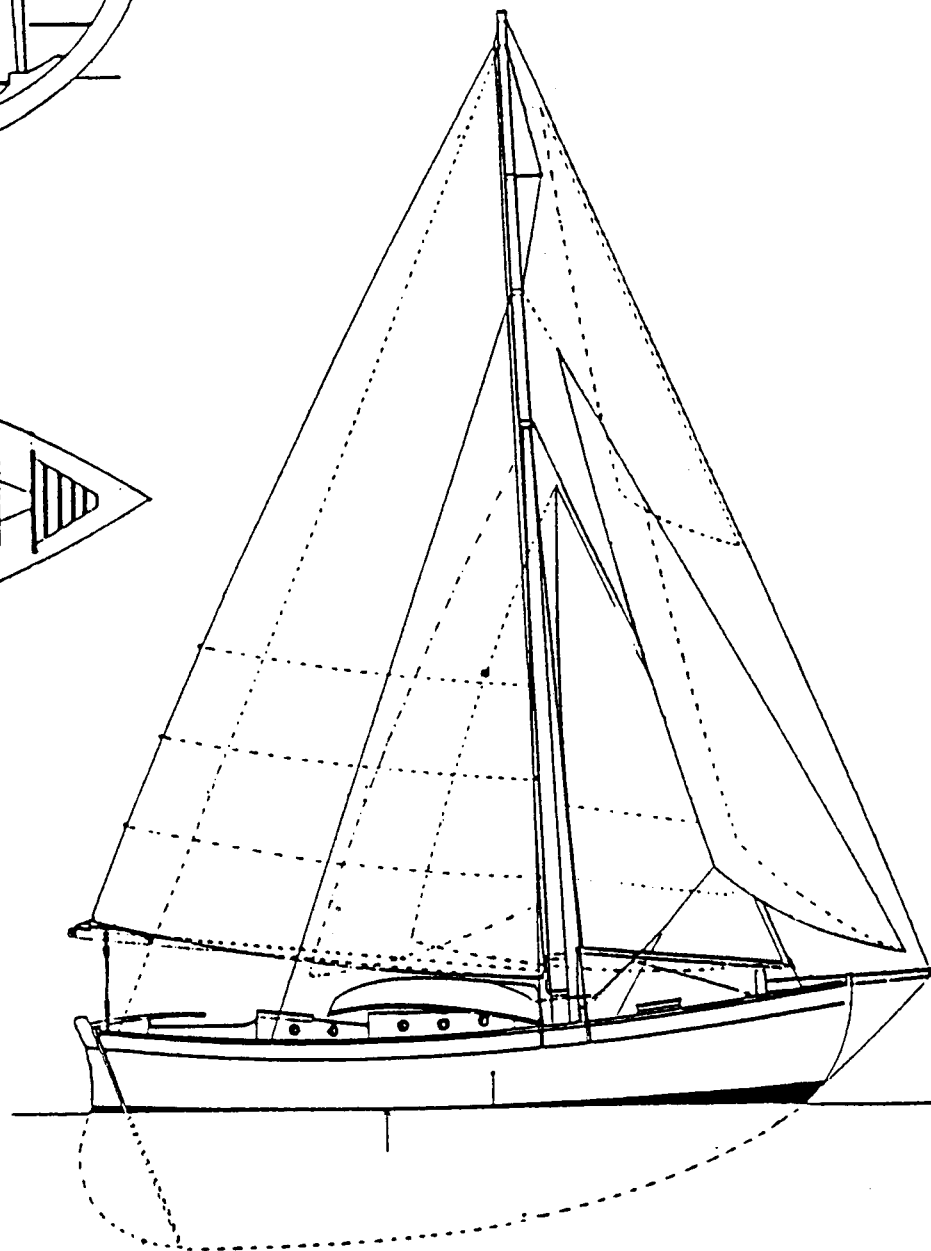


T.H.B. explained in an article in Y.M. how he drew the lines of KHAMSEEN 'A'. " I combined the lines of the original KHAMSEEN with those of my ZYCLON design, now well known as the Z 4-tonners. I spaced out the sections of ZYCLON till her dimensions were LWL 21 ft. and beam 7 ft. 2 in. Changing the scale from 1 in. to 1 ft. to $\frac{1}{4}$ in. to 1 ft. gave the dimensions of the new KHAMSEEN 28 ft. by 9 ft. 6 in. Like ZYCLON she has a perfect metacentric analysis, and her centres of upright and heeled buoyancy coincide.

So KHAMSEEN 'A' is an elongated ZYCLON and should have all the advantages of the smaller yacht accentuated by increased size and longer waterline compared with beam. The ratio is almost 3:1, which is about correct for a yacht of this size.

The resulting displacement is virtually the same in each case, but I have given KHAMSEEN 'A' less outside ballast because I feel sure that the original weight was excessive, and would most probably put the yacht below her marks.

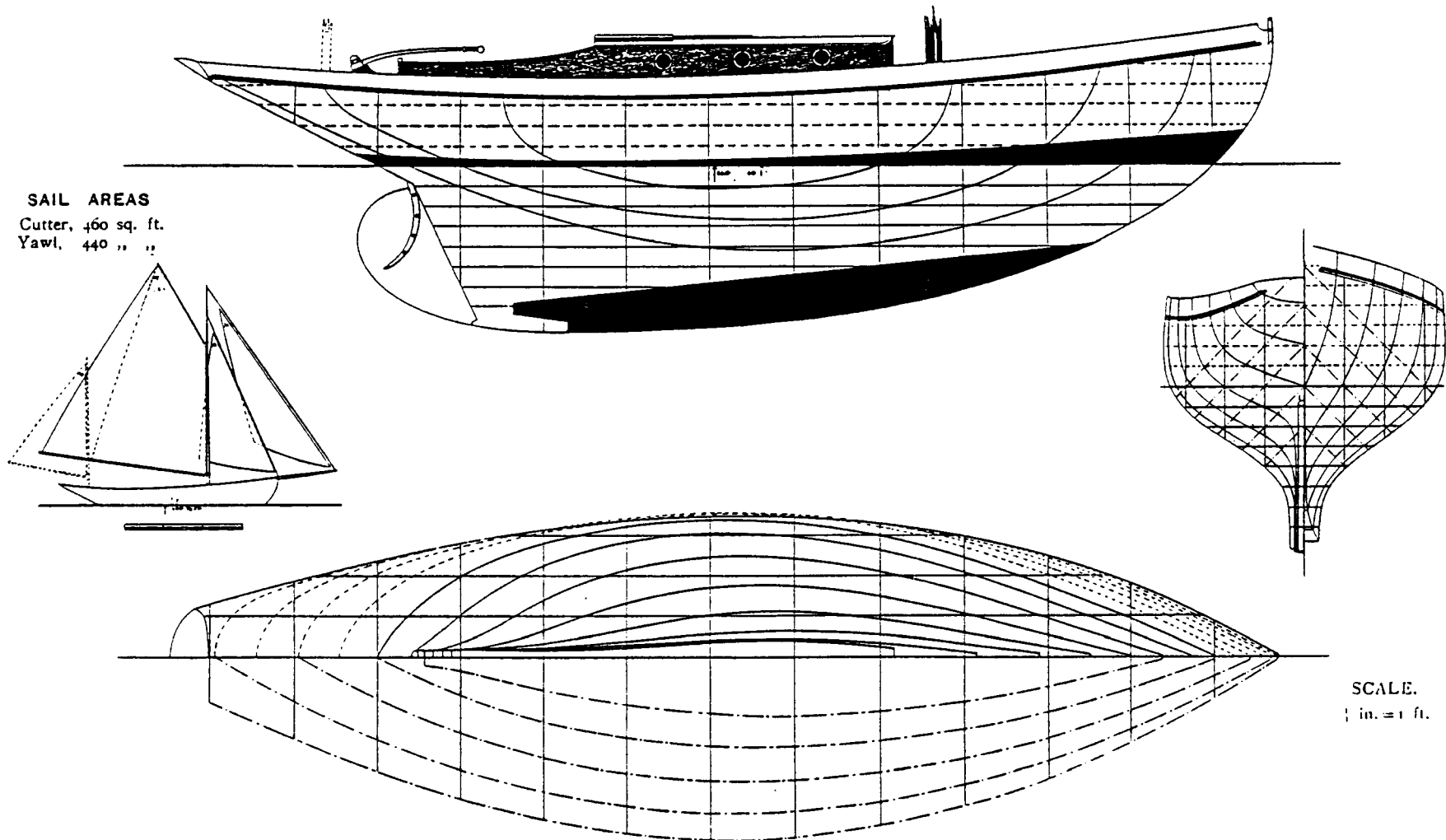
The sail plan has been modernized by reducing the length of the boom and slightly lengthening the mast."



LA BONNE DESIGN 1917

LOA 27.81 ft. LWL 21 ft. Beam 7.12 ft. Draught 4.12 ft.

Displ. 3.8 tons. Iron keel 1.57 tons. Sail Area 460/440 sq.ft. T.M. 4½ tons.

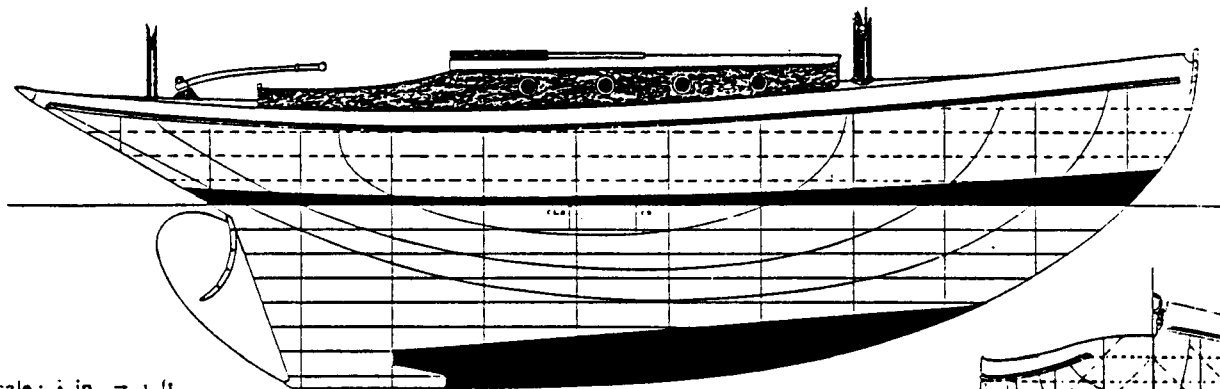


Herbert Reiach MINA, founding editor of Yachting Monthly, speculated in one issue of the magazine that a class of small cruiser racers would encourage young men to take up sailing when the war (1914-18) was over and invited comments. T.H.B. submitted this design as his contribution to the discussion.

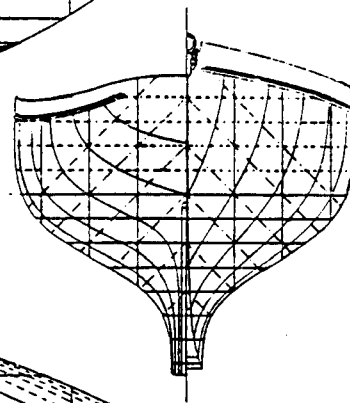
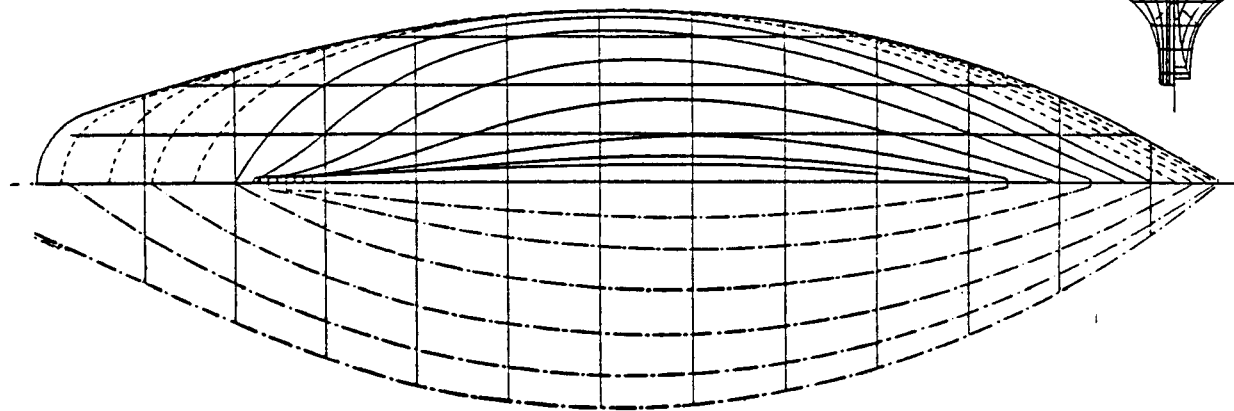
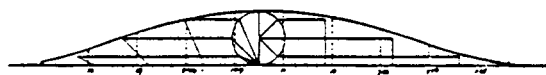
RUSSIA DESIGN 1917

LOA 24.5 ft. LWL 19 ft. Beam 7.08 ft. Draught 3.75 ft.

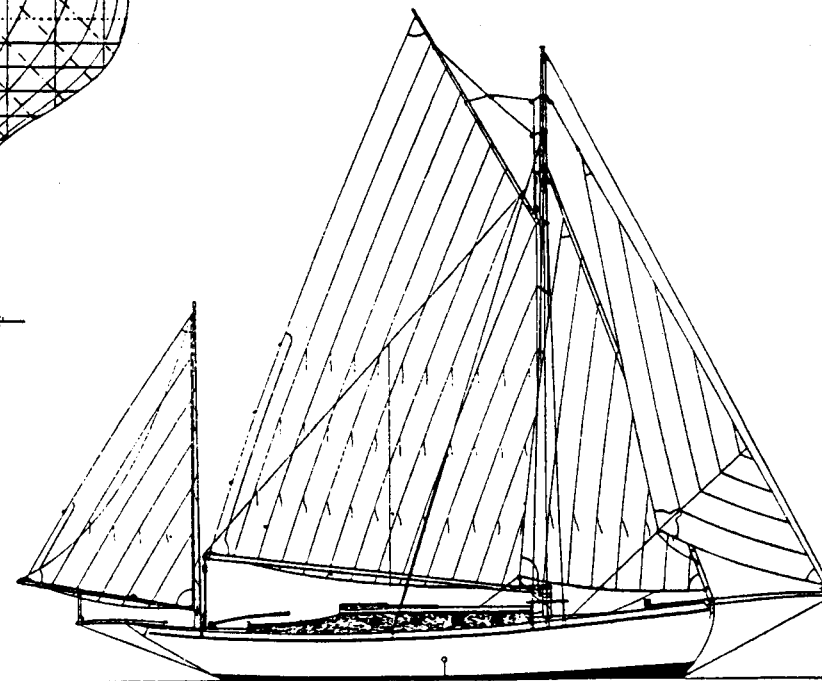
Displ. 3.5 tons. Iron keel 1.25 tons. Sail Area 345 sq.ft. T.M. 3.7 tons.



Scale: $\frac{1}{4}$ in. = 1 ft



No accomodation or construction plans were published for either the RUSSIA or LA BONNE designs.



The article T.H.B. wrote to accompany this design was headed 'A Single-Handed Yawl'. He explained: "It is the opinion of many competent men that the single-hander should be as small as is compatible with good living room. Many think also that the yawl is the most suitable rig for this purpose. Accepting, for the present, these two opinions, I have designed a yacht which may interest those addicted to sailing alone."

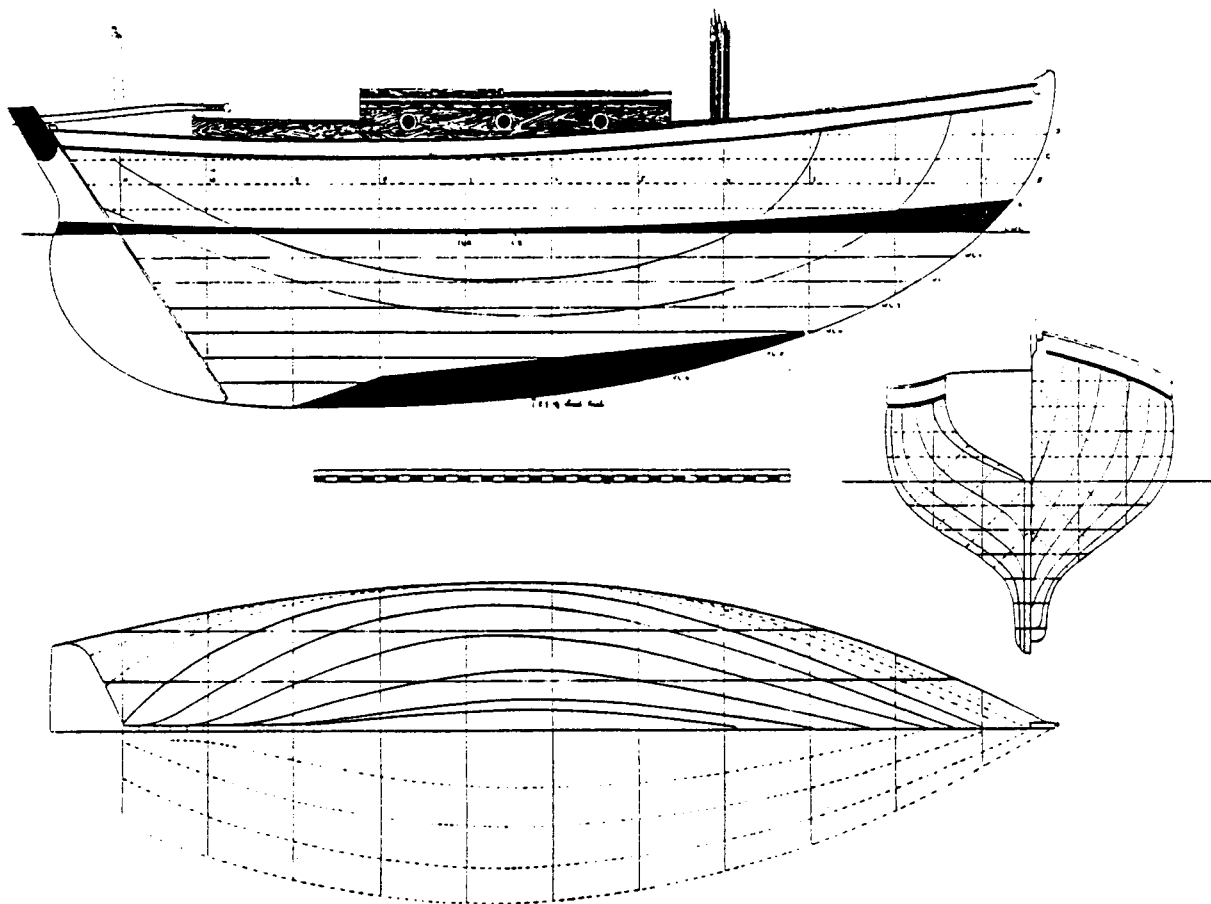
Mainsail 197 sq.ft. Mizzen 44 sq.ft.

Foresail 56 sq.ft. Jib 48 sq.ft.

MEMORY DESIGN 1911

LOA 21 ft. LWL 18 ft. Beam 6 ft. Draught 3.5 ft. T.M. 3 tons.

Displ. 2.5 tons. Lead keel .85 tons T.M. 3 tons Sail Area 225 sq.ft.



This is a smaller version of the Hong Kong design. T.H.B. commented: "Within the small dimensions given it has proved possible to get ample sitting headroom for two. The seats are of double plank. The top planks turn over and meet in the middle line, making a flat floor upon which two mattresses can be spread.

The cabin top construction avoids all the complication of side beams and carlins which are very difficult to fit. It gives a broad deck to walk on and plenty of room below, with no extra windage, it would be as light as and perhaps even stronger than an orthodox cabin-top, and would look as well."

The following scantlings are suggested :

Keel.—English wych elm, or Canadian rock elm, or oak, sided 4½ in., moulded as per drawings.

Stem.—A natural oak crook, sided 3 in., moulded at head 6 in., at scarf with keel 9 in.

Stem post of oak, sided 3 in. at after end, 3½ in. at fore end, moulded as in drawing.

Deadwoods of oak or pitch-pine. Stem and stem-post to be bolted to keel and deadwoods with ½ in. yellow metal bolts.

Lead keel to be bolted to keel with ½ in. yellow metal bolts.

Rudder of oak. To be strengthened at aperture for propeller with an iron plate on each side as shown.

Planking to be ½ in. mahogany. Or as follows : garboard and two next planks of oak 1 in. thick, rest of pitch-pine ½ in. thick. Sheerstrake of teak ½ in. thick. Garboard planking to be caulked, the rest to be secretly caulked with cotton wick.

Timbers of Canadian rock elm, sided 1 in., moulded 1½ in., spaced 6 in. c. to c. An extra timber to be worked in way of mast.

Hanging and lodging knees of oak where necessary.

Beams of oak, sided 1½ in., moulded 2½ in., main beams sided 2½ in., moulded 3 in., spaced as shown.

Rail of teak.

Cabin top.—Sides of teak 1 in. thick.

Cockpit coamings of teak ½ in. thick.

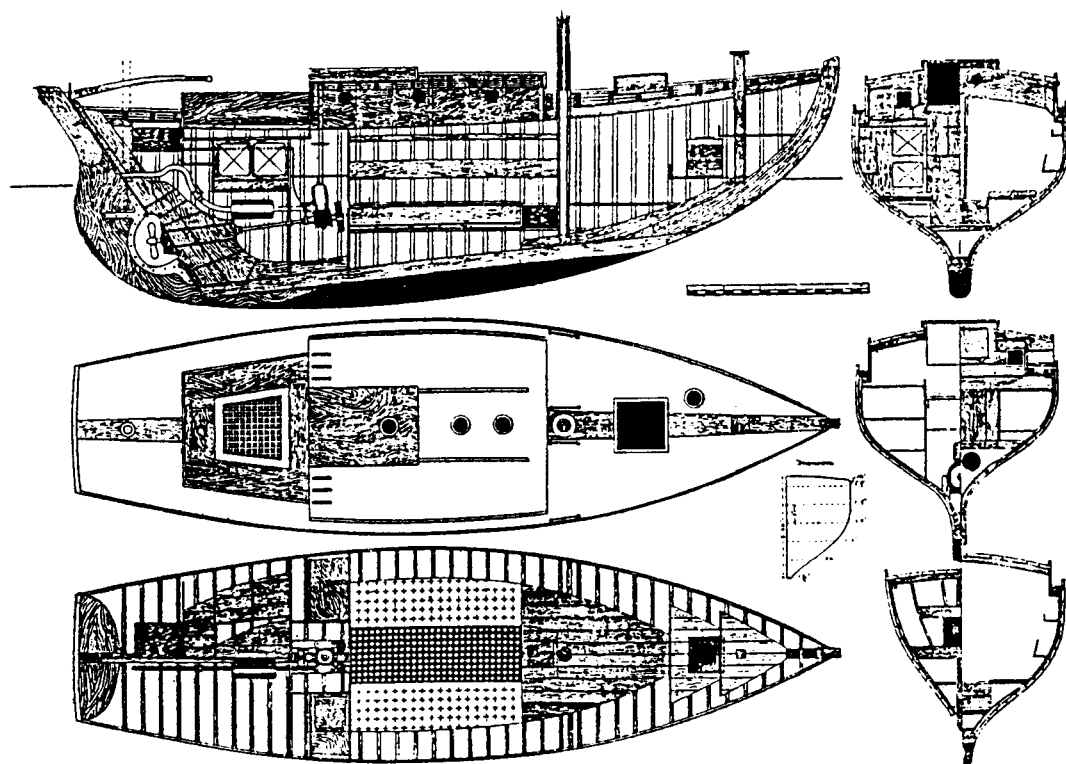
Deck of red pine ¾ in. thick, covered with canvas painted white or light ochre.

Shelf.—Canadian rock elm, sided 2 in., moulded 3½ in.

Floors at sections 3, 5, 6, 7, and 8 of galvanised iron 1½ in. by ½ in., or of angle steel, reaching well up to turn of bilge.

Carlins.—Pitch or oregon pine, 2½ in. moulded by 2 in. sided.

Breast-hook.—Galvanised iron, 1½ in. by ½ in. at throat, arms 9 in. long, end of arms 1 in. by ½ in.



Mast.—Clean grown Norway spar, at heel $3\frac{1}{2}$ in., at deck $4\frac{1}{2}$ in., at shoulder $2\frac{1}{2}$ in.

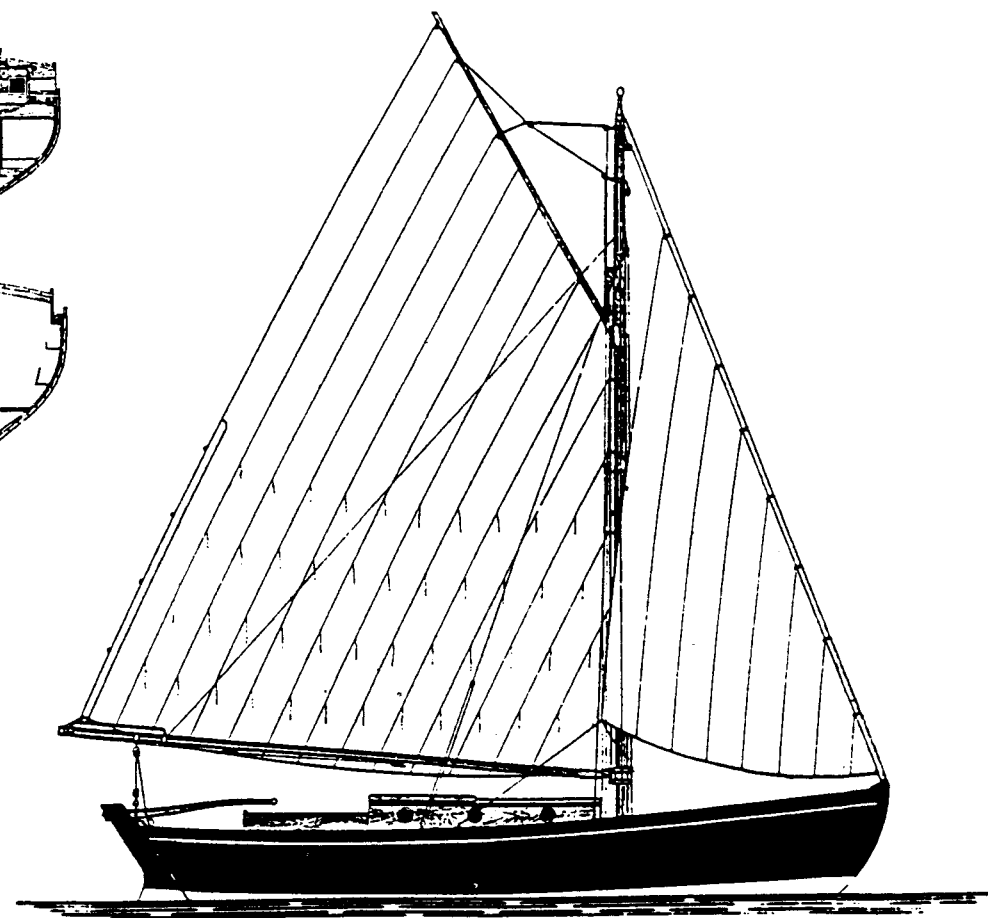
Boom.— $3\frac{1}{4}$ in. diameter at fore end, $3\frac{1}{2}$ in. at aft end.

Gaff.—At jaws $1\frac{1}{2}$ in., middle $2\frac{1}{4}$ in., outer-end $1\frac{1}{2}$ in.

Anchor.—Bower anchor to weigh 42 lb. Shank to be 3 ft. 4 in. long, from tip of flukes to tip 2 ft. 1 in. Palms to be set at 40° to shank. Thirty fathoms of $\frac{1}{16}$ in. chain.

Kedge 28 lb. Shank 3 ft., tip of flukes to tip 1 ft. 10 in.

The specification called for some internal trimming ballast in addition to the lead keel. If this yacht were to be built today even more extra ballast would be needed to compensate for the weight saved with the improved anchors and lighter chain which would be fitted in accordance with modern practice.



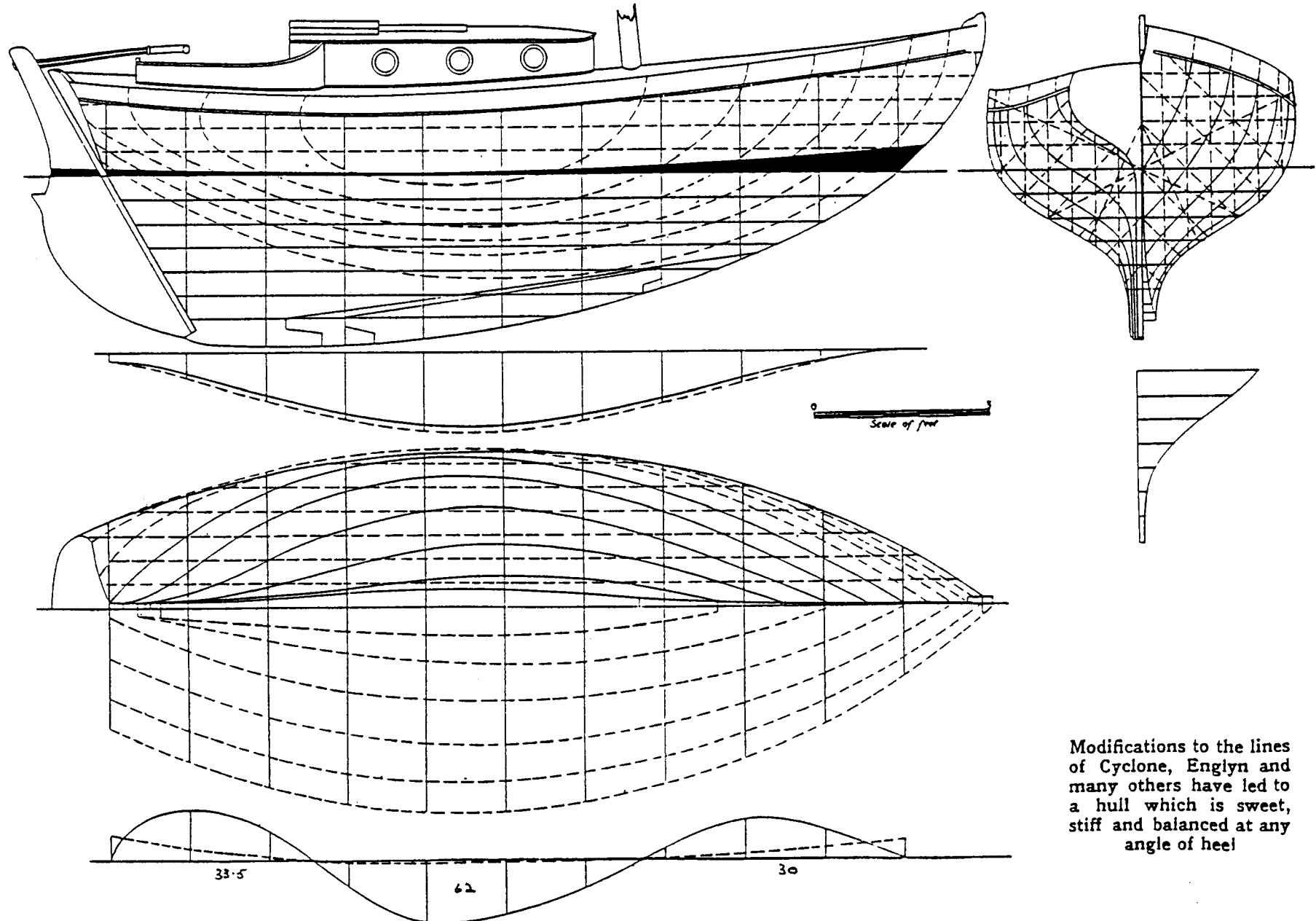
SAIL PLAN OF THE 3-TON AUXILIARY CRUISER.

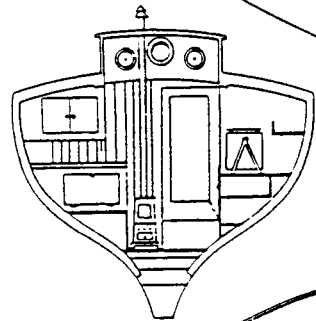
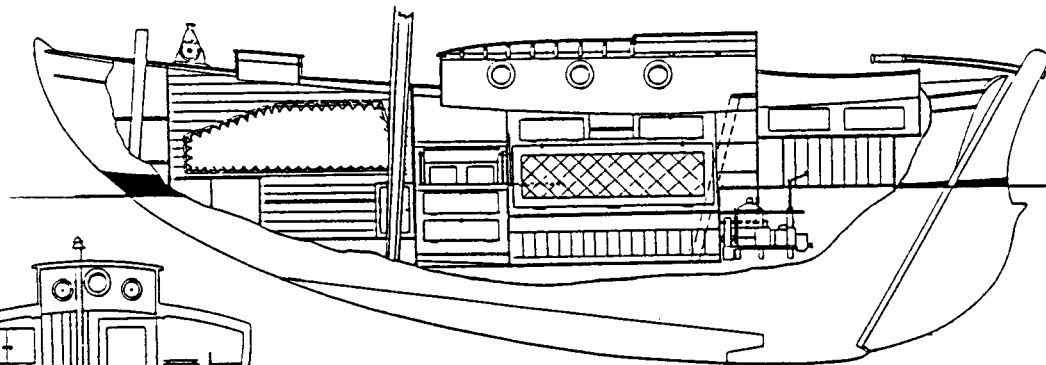
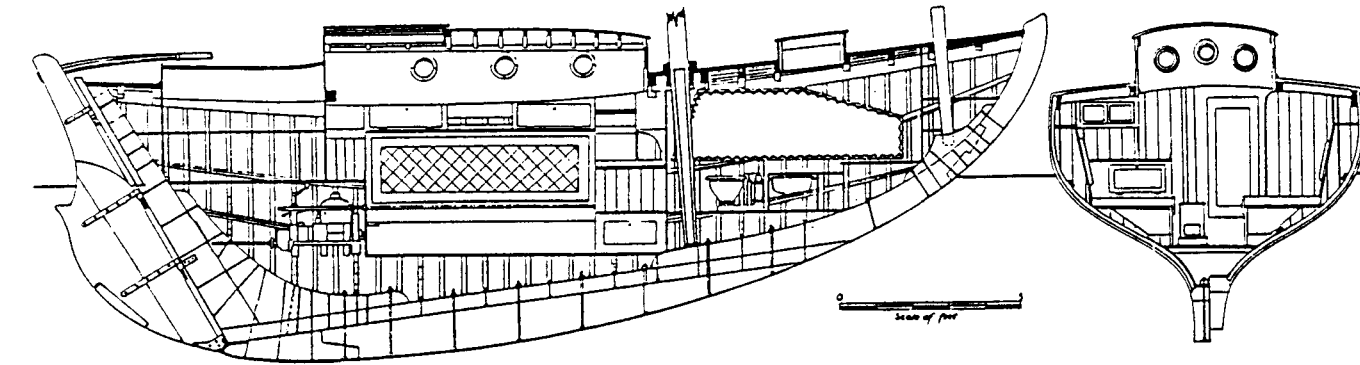
Arcas:—Mainsail ...	175 sq. ft.
Foresail ...	50 "
Total	225 "

OMEGA DESIGN 1936

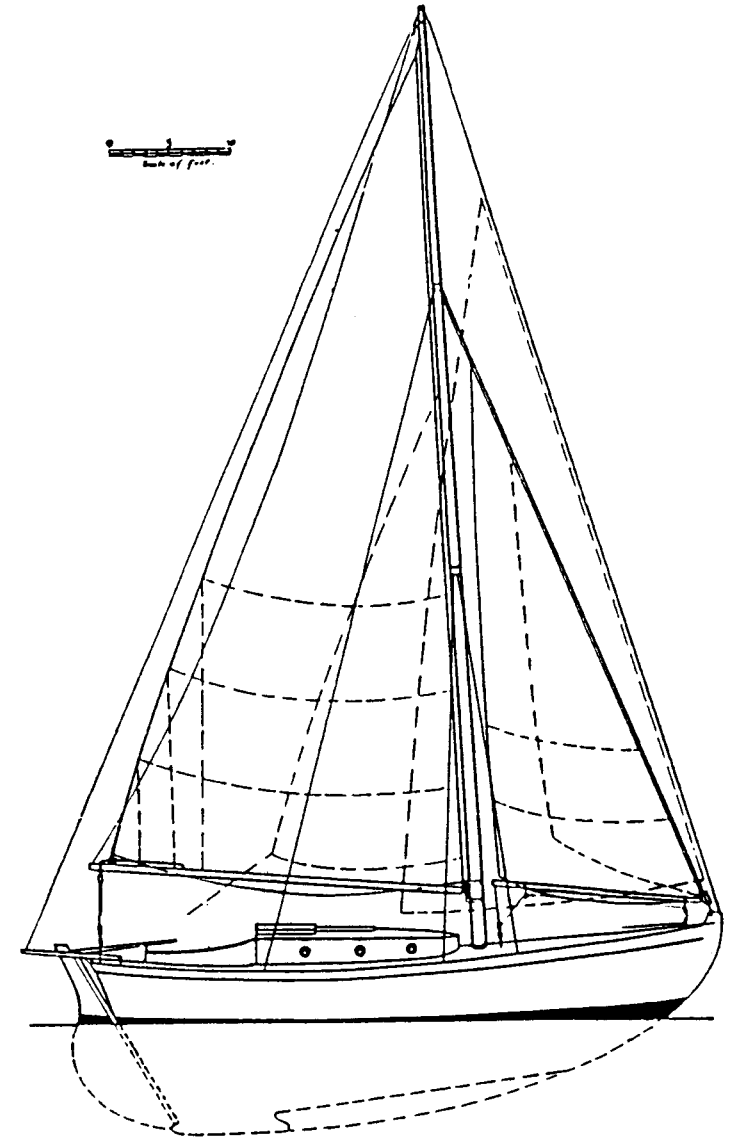
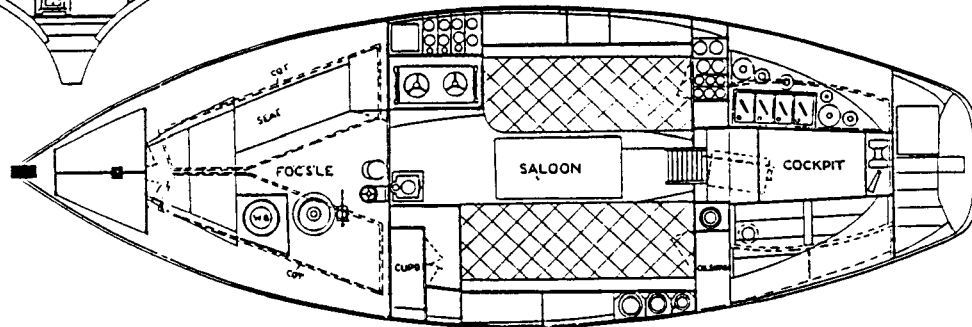
LOA 26 ft. 10in. LWL 22 ft. 6in. Beam 8 ft. 9in. Draught 4 ft 9in.

Displ. 5.93 tons. Iron keel 1.84 tons. Sail Area 306 sq.ft. T.M. 7.5 tons.





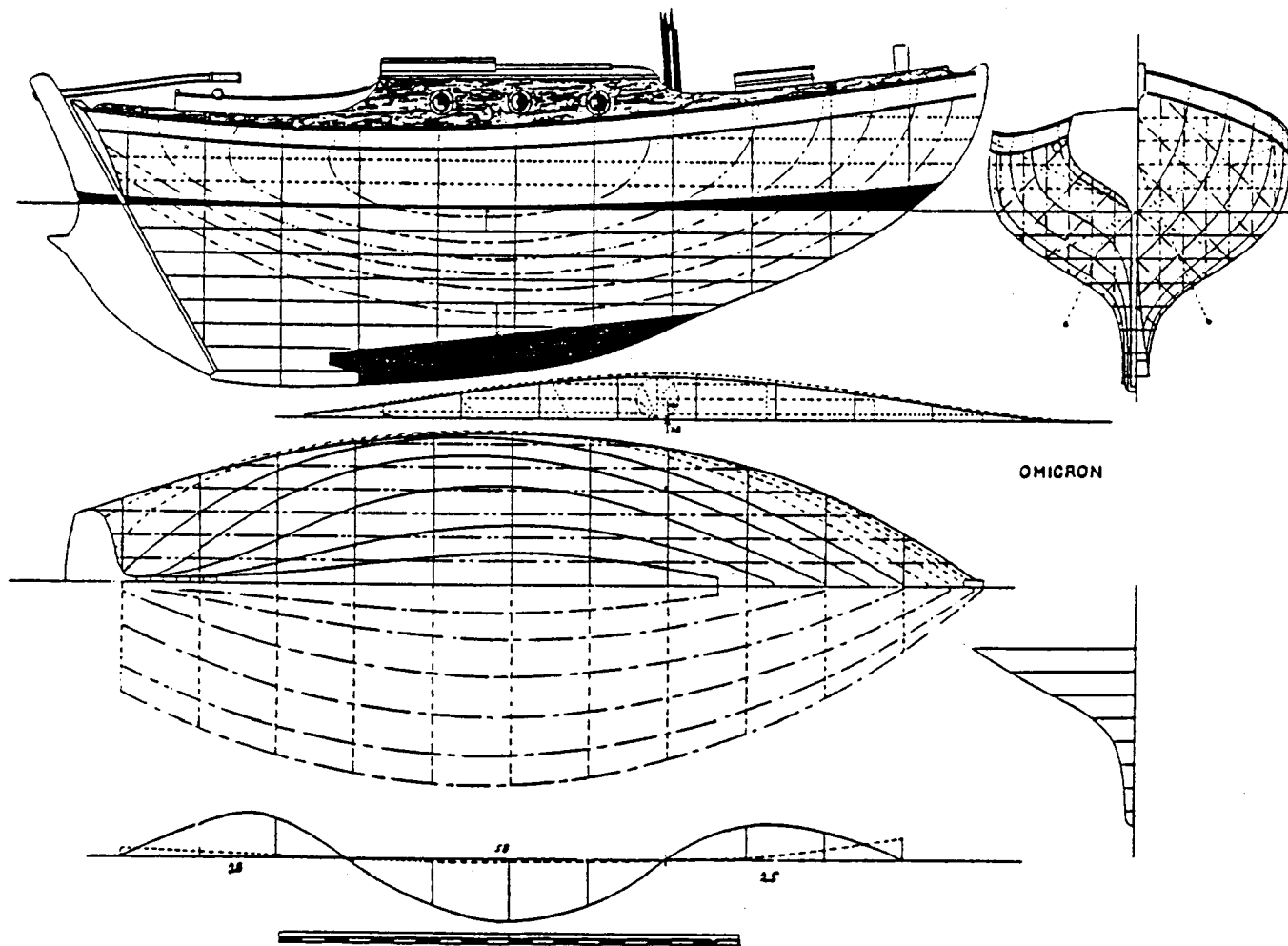
Layout shows nice understanding of a cruising man's needs



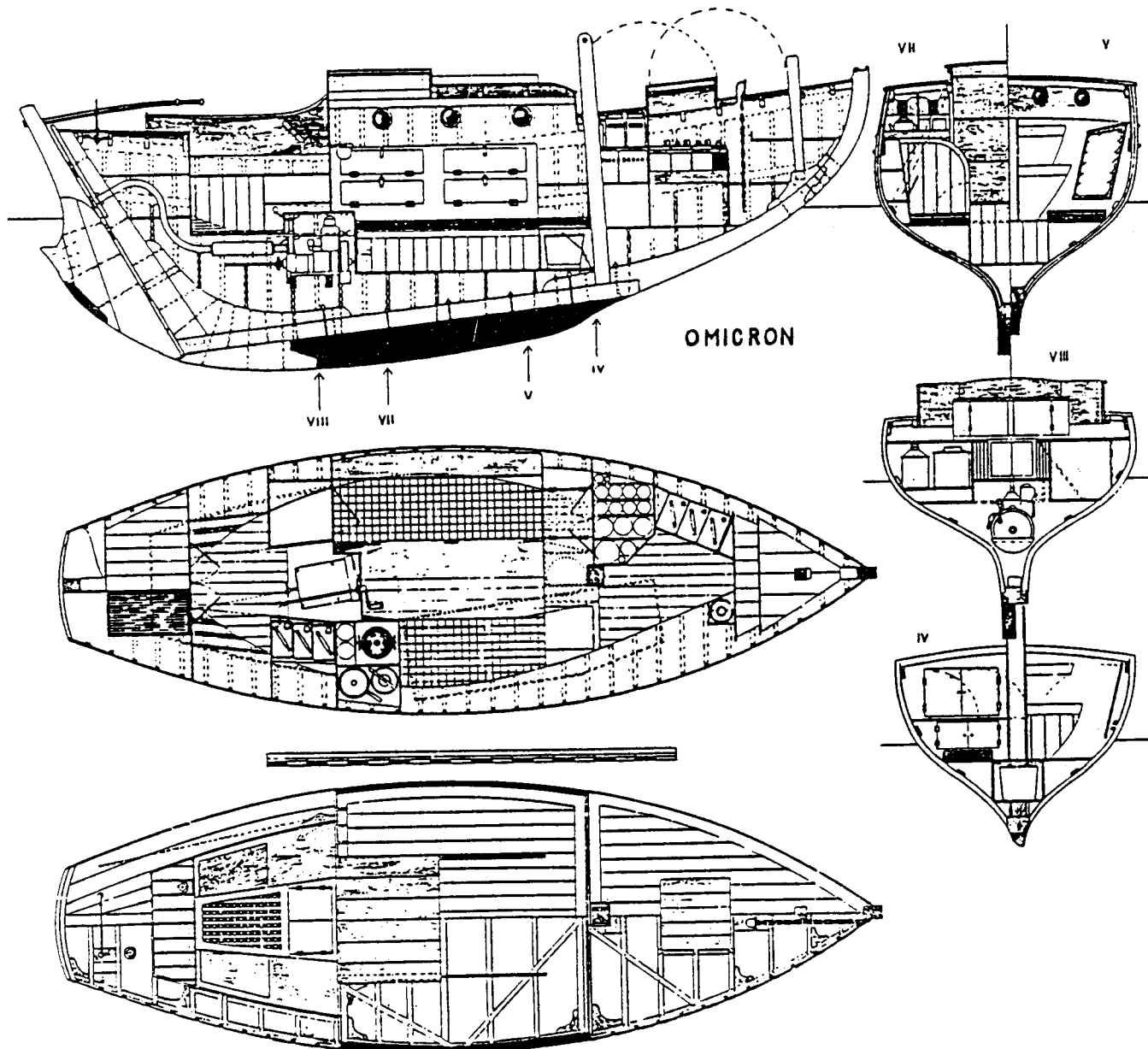
OMEGA is the last of a series of yachts with a LWL of 22.5 ft. and a transom stern. The hull conforms to the metacentric system, and the centres of the heeled and upright centres of areas practically coincide.

OMICRON DESIGN 1940

LOA 20 ft. LWL 17 ft. Beam 6 ft 6½ in. Draught 3 ft 9½ in.
 Displ. 2.5 tons. Lead keel 1 ton. Sail Area 190 sq.ft. T.M. 3 tons.

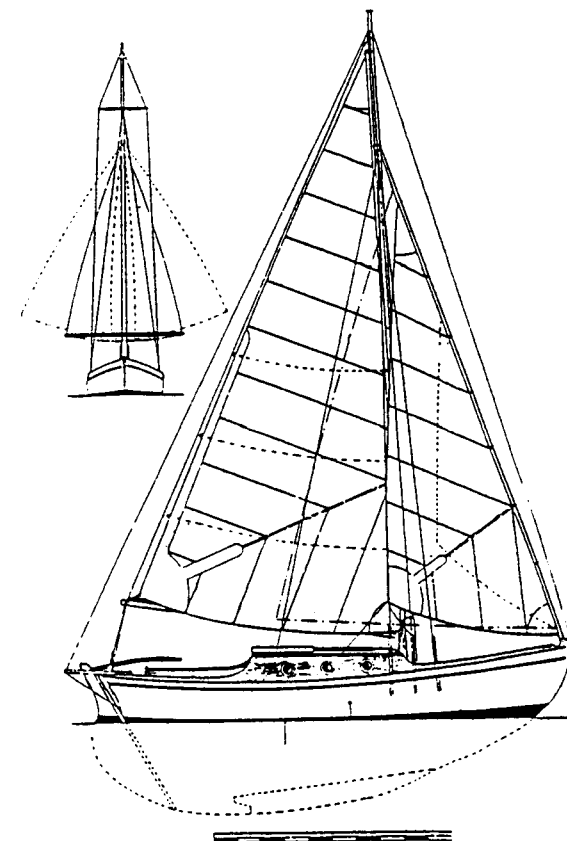


Writing in YM. about this design T.H.B. explained that she was derived from the OMEGA design. "The drawings of OMEGA are to a scale of $\frac{1}{4}$ in. to 1 ft. Taking the same lines I altered the scale to 1 in. to 1 ft., and with a slight change in profile to bring the centre of gravity of the lead lower and to improve hauling-out facilities, produced OMICRON.



"The mainsheet passes forward from the quarter block to a sheave in the cockpit coaming, and is belayed inside the coaming. The sheet can be tended without looking backwards, and a foot on the bulkhead gives an enormous purchase.

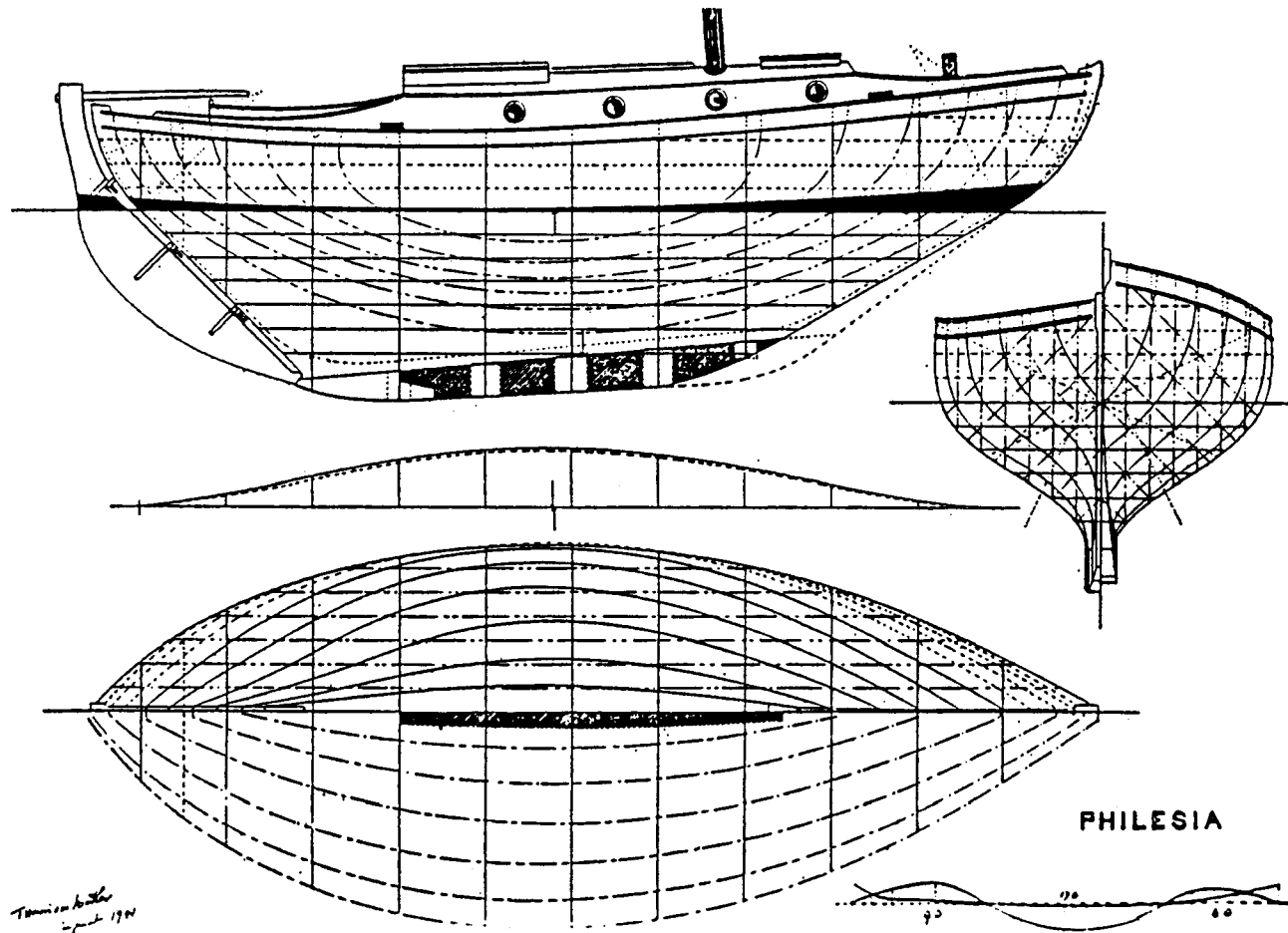
The forehatch is a large one, so that all work for'ard can be done from the fo'c'sle. Standing on the sole of the fo'c'sle, one can reach the chain and raise the anchor. There will be double forestays, so that the headsails can be shifted; again without standing on the deck."



This design is the best compromise that I can think of which will give reasonable stability with the necessary cabin space. We know that in OMEGA it has produced a satisfactory seaboot, so in the smaller size the result should be the same. The metacentric analysis is almost correct without the rudder. The after curve is slightly larger than the forward curve, but this is due to the fact that the after deadwood is kept reasonably thick for purposes of strength in a weak spot."

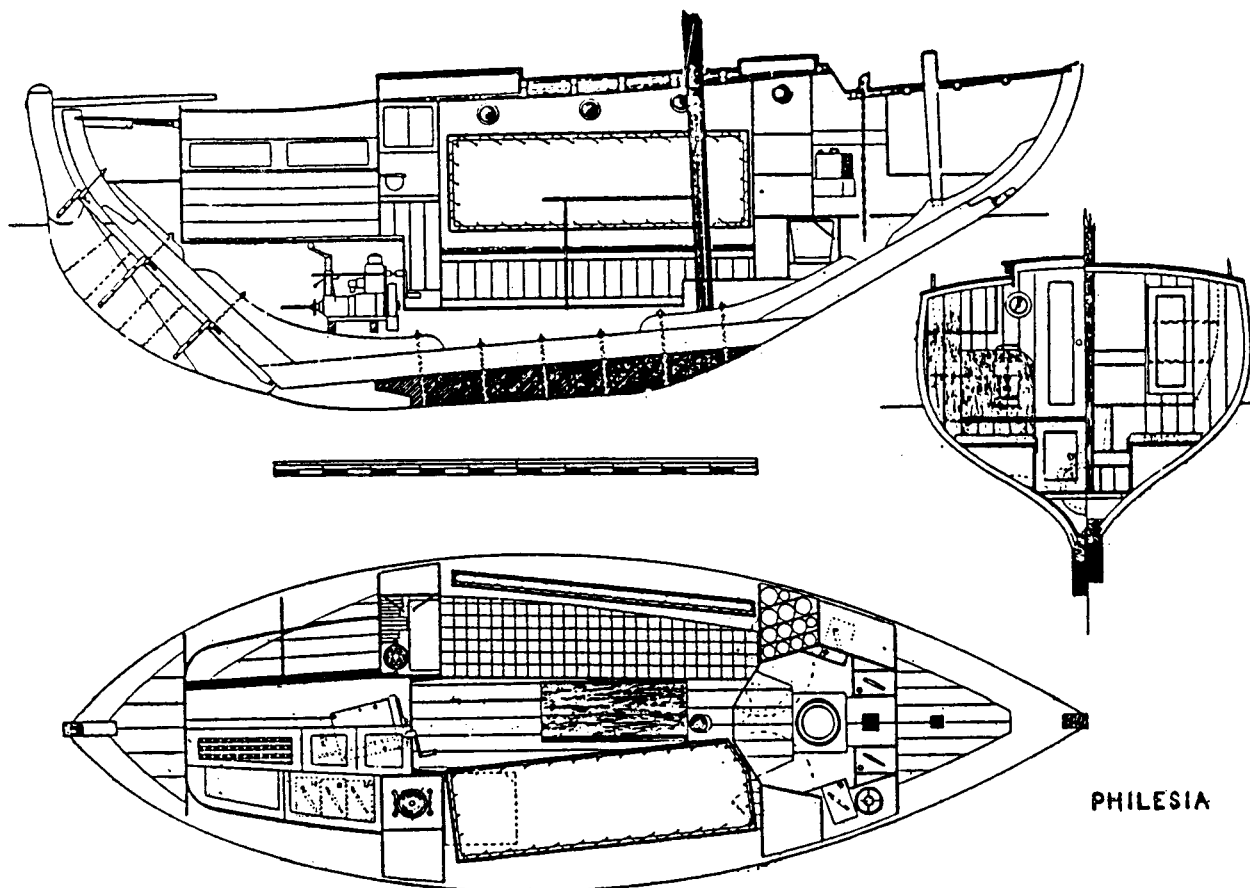
PHILEZIA DESIGN 1941

LOA 21 ft. LWL 18 ft. Beam 7 ft. Draught 4 ft.
 Displ. 3.24 tons. Lead keel 18 cwt. Sail Area 207 sq.ft. T.M. 3.6 tons.



Commenting on this design in *The Yachtsman* in December 1941 T.H.B. wrote:
 "PHILEZIA was to be a cruising yacht specially designed for amateur construction. I decided that a small yacht would be easier to build than a larger one, so I chose 18 ft. as the length of the L.W.L.

It seemed to me that a double-ender of the Colin Archer type would be the easiest form, and it was obvious that a log-keel calling for no adze work would facilitate the task. To make the planking easier, and to make the adoption of the Ashcroft principle of planking possible I kept the bilge easy, and avoided excessive sheer."



PHILEZIA

"The straight forefoot economises in wood and again makes the work simpler. The topsides amidships are carried up to avoid the construction of the orthodox cabin top with all its short beams and carlines. This form also gives more room inside. Apart from those features the design is quite ordinary and there is nothing freakish about her.

The double ended type gives a natural harmony and balance, and PHILEZIA has an almost perfectly balanced hull. The centres of upright and inclined curves of areas almost coincide and the metacentric analysis is very good. It is not perfect in that the after curve of the symmetry or moment curve is larger than the forward.

Theoretically this ought to make the hull light-headed, but I do not think that PHILEZIA will carry lee helm, in fact probably the opposite will occur; she will in strong winds carry slight weather helm off the wind. To make the balance perfect it would be necessary to deepen the forefoot as indicated in dotted lines. This might or might not be advantageous.

The lead keel is on the light side and I calculate that about six or seven hundredweight of inside ballast would be necessary to bring her down to her marks."

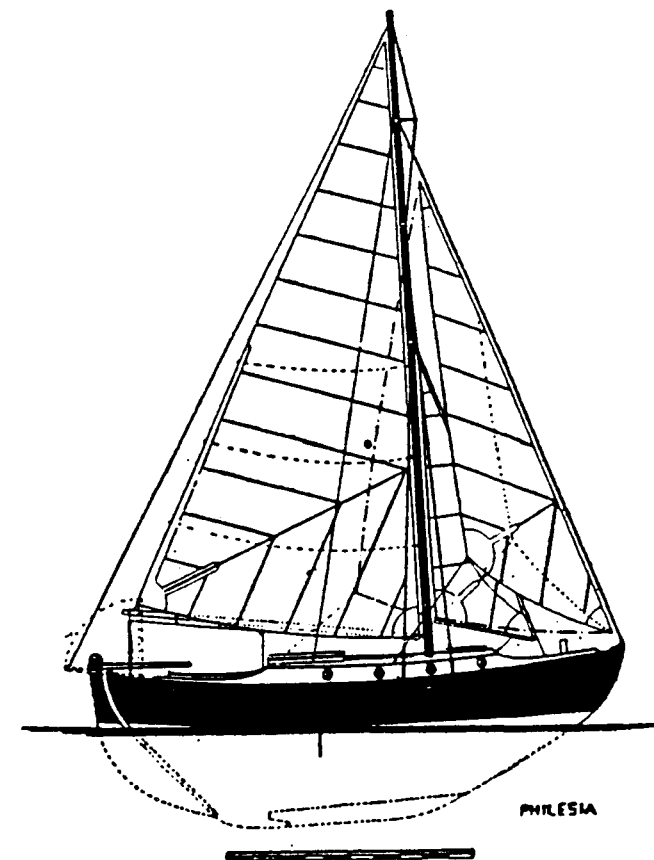
"PHILEZIA is a chubby craft but as she is well balanced she will, I am sure, run well and handle nicely, but she would be better were the same sections spaced out to a L.W.L. of 19 or 20 ft."

Mainsail.....145 sq.ft.

Foresail.....20 sq.ft.

Jib.....42 sq.ft.

"The small boom foresail will probably not be approved of by many, but I am inclined to think that it is useful. It works itself and is no trouble at all."

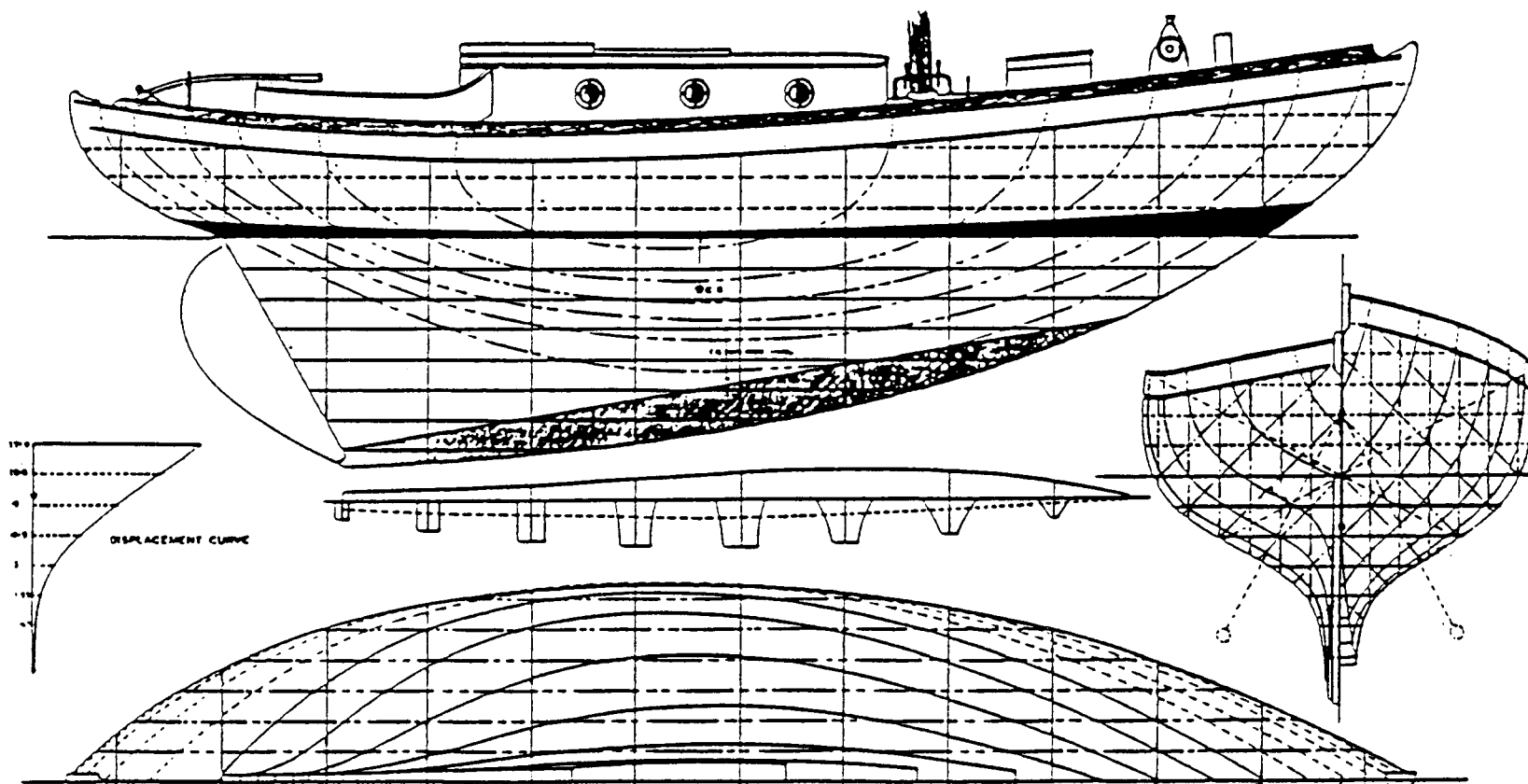


PHILEZIA

ROSE OF ARDEN DESIGN 1938

LOA 30 ft. LWL 23 ft. Beam 8 ft. 9 in. Draught 5 ft. T.M. 7.8 tons.

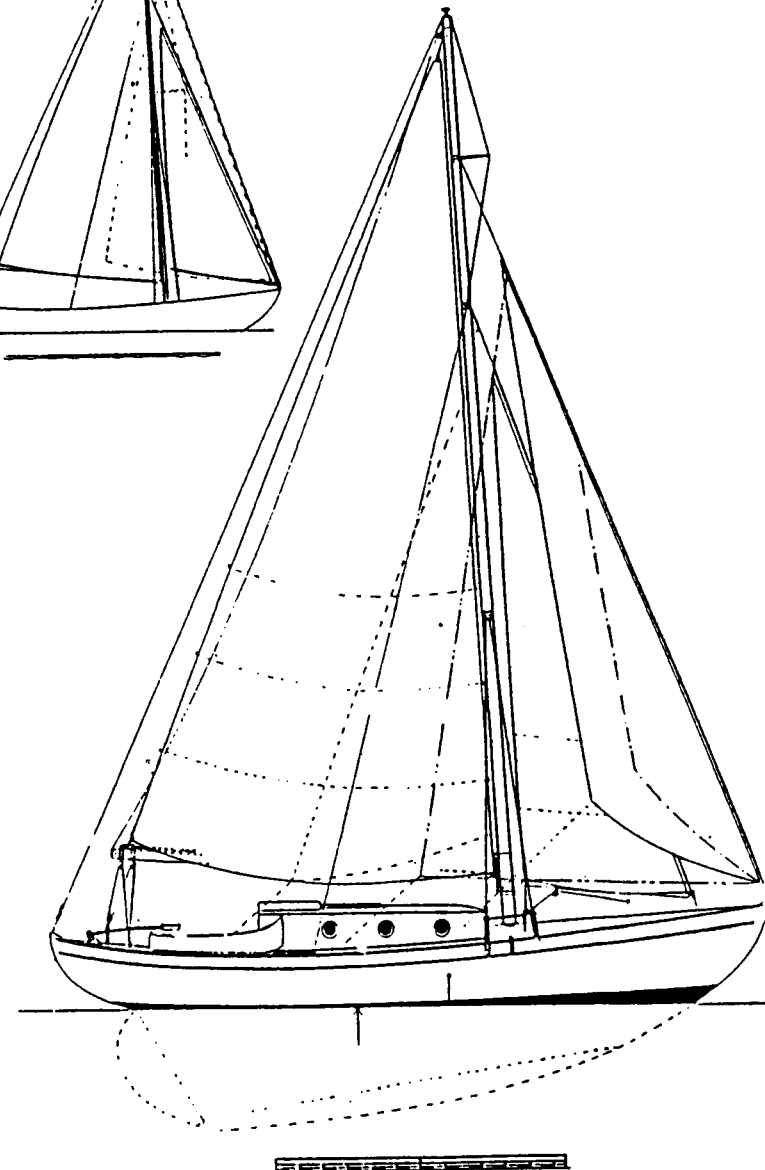
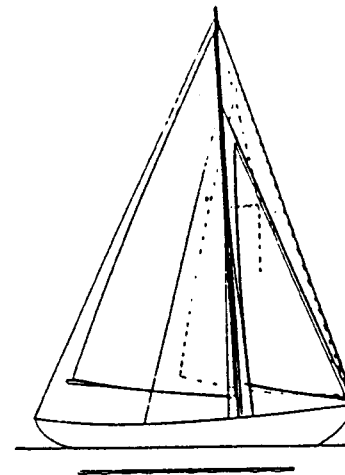
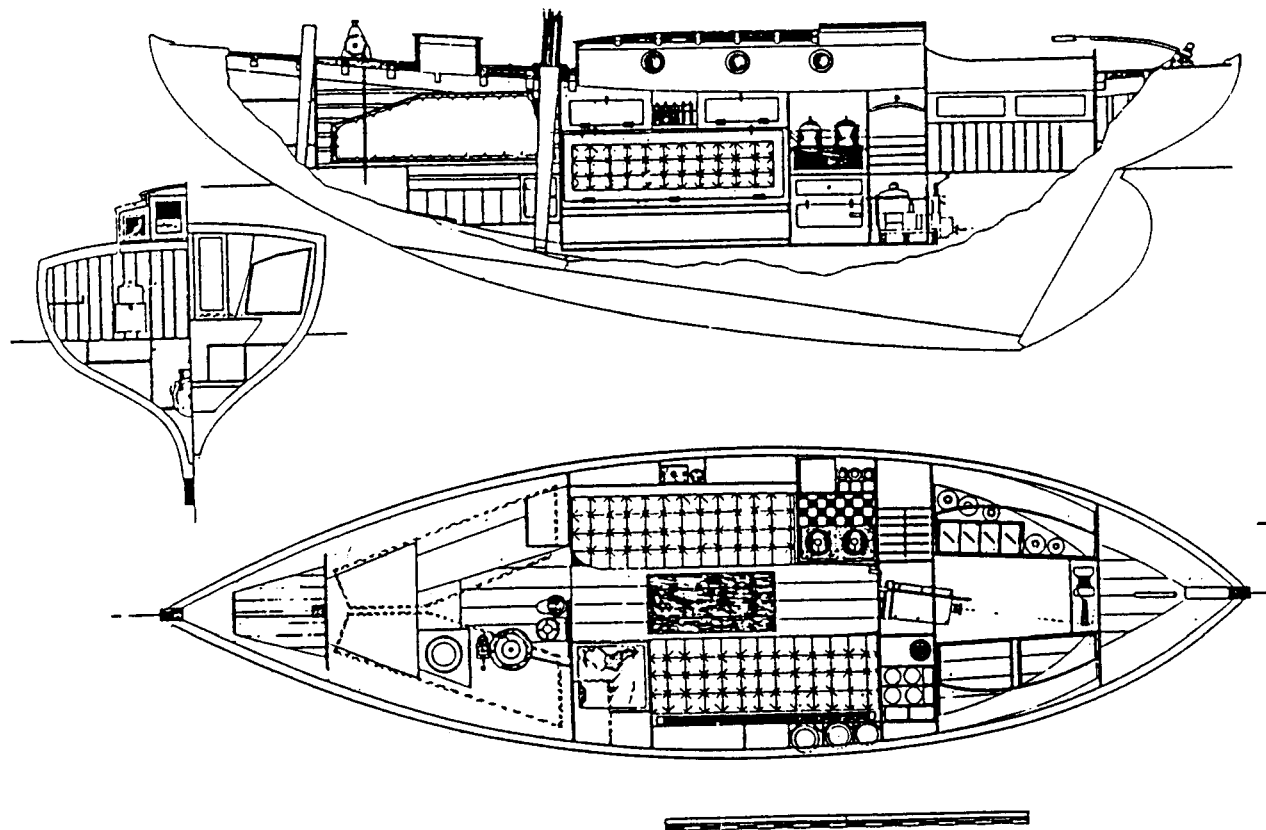
Displ. 5.84 tons. Iron keel 2 tons. Ballast 10 cwt. Sail Area 395 sq.ft.



Based on the design of EDITH ROSE the ROSE OF ARDEN has been lengthened 6 in. at the bow to accommodate the stemhead rig, while the canoe stern is a true Albert Strange parabolic stern.

As it was found in practice that EDITH ROSE needed more stability the new boat's displacement is .34 tons greater, while the iron keel has been increased to 2 tons and about half a ton of ballast is to be carried inside.

Sloop 360 sq.ft
Cutter. 395 sq.ft.



Describing this design T.H.B. wrote: "The metacentric analysis has been calculated with the inclusion of the rudder. Theoretically she ought to balance on a wind with the rudder amidships, and carry faint weather helm with a loose helm.

The cabin plan is that of VINDILIS with the improvements suggested after four years' experience with this yacht. The port side is unaltered, but on the starboard side the after part has been modified to bring the galley into the ship for greater convenience.

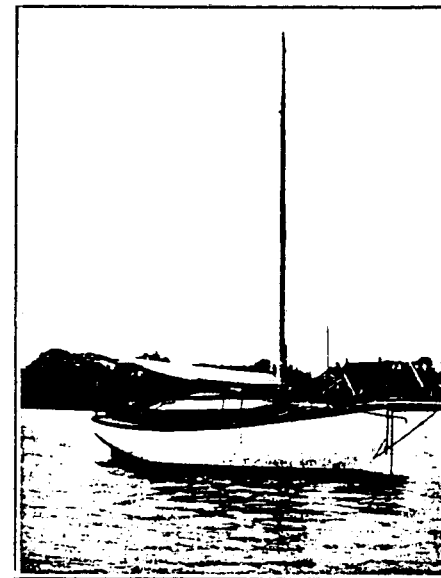
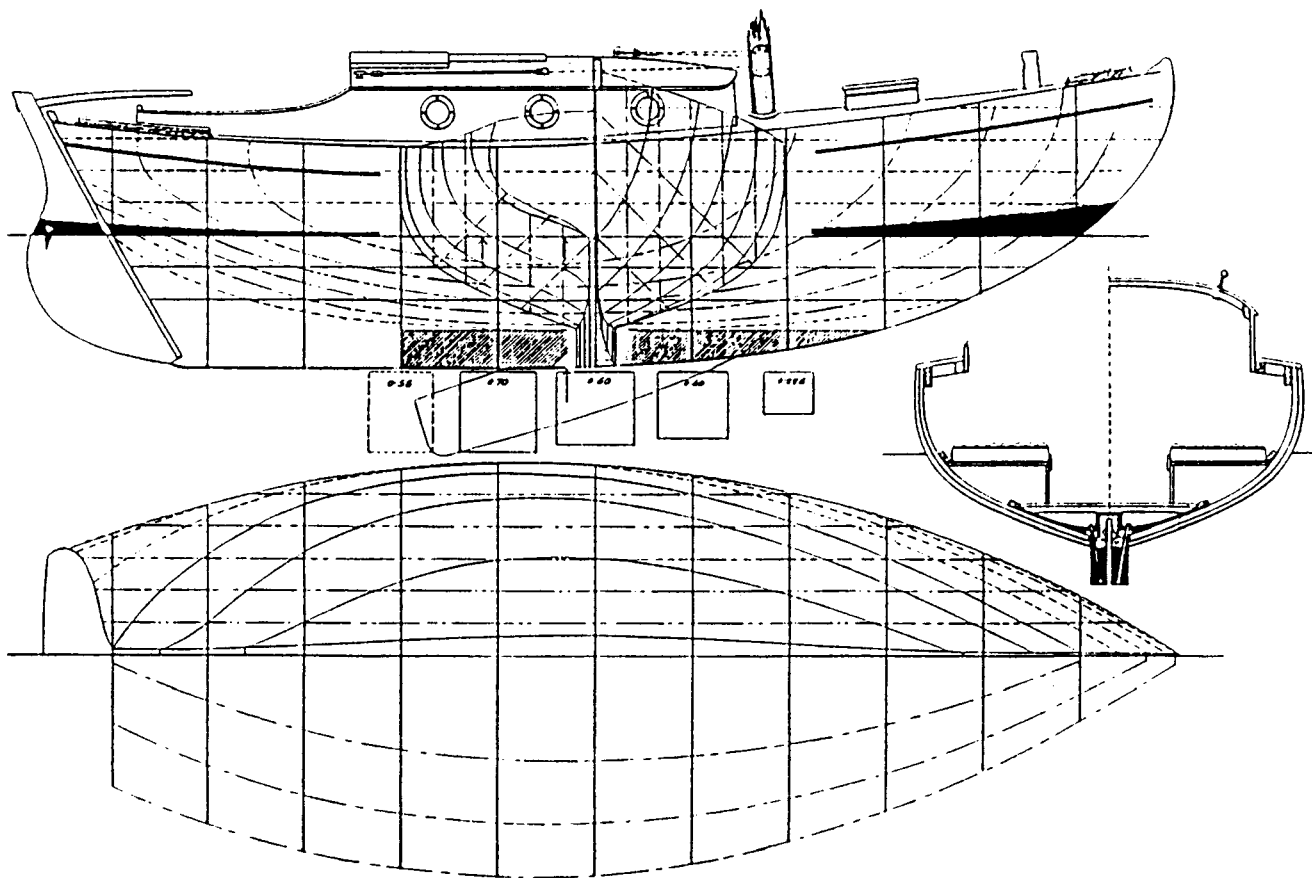
A hanging cupboard is arranged aft of the galley. At the back of the hanging cupboard is a bin for the trysail and the second jib. To make room for the hanging cupboard aft a small cupboard and side-board for 'ard had to go, but there is room for a small cupboard of triangular shape in the fo'c'sle opening into the saloon."

SABOT DESIGN 1932

LOA 23.6 ft. LWL 20 ft. Beam 8 ft. Draught 2.75 ft./ 4.75 ft.

Displ. 3.35 tons. Iron keel 18 cwt. T.M. 5 tons. Sail area 315 sq.ft.

This design of a little shoal-draught cruiser was built to by A.V. Robertson, of Woodbridge, Suffolk, for Mr. William Duffield, who wished to use her on the upper reaches of the Trent, on the Norfolk Broads and, in reasonable weather, in the Thames Estuary. A fixed draught of less than 3 ft. was therefore decided upon.



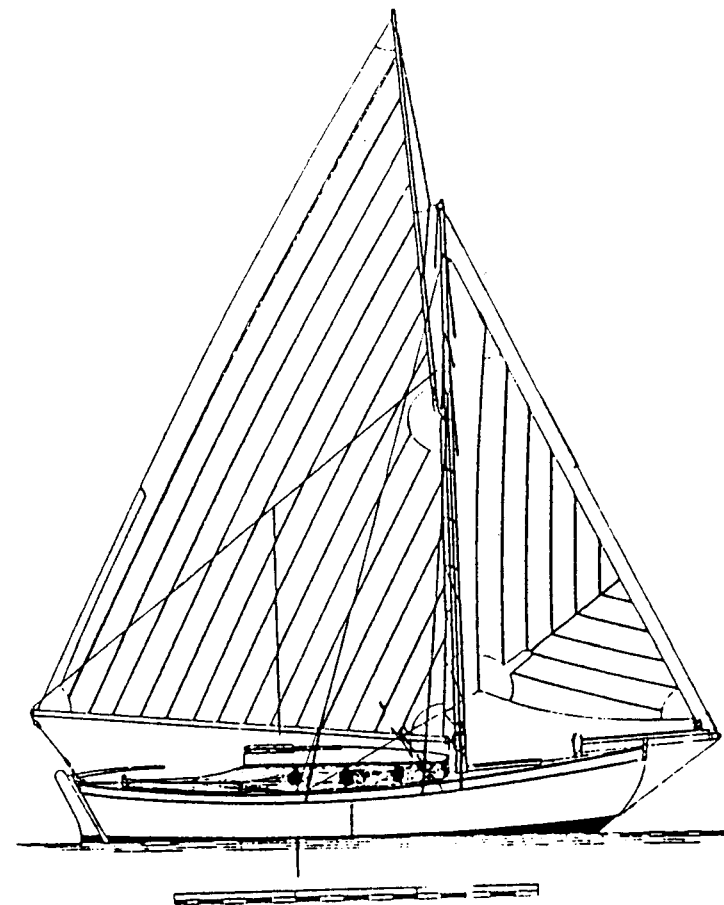
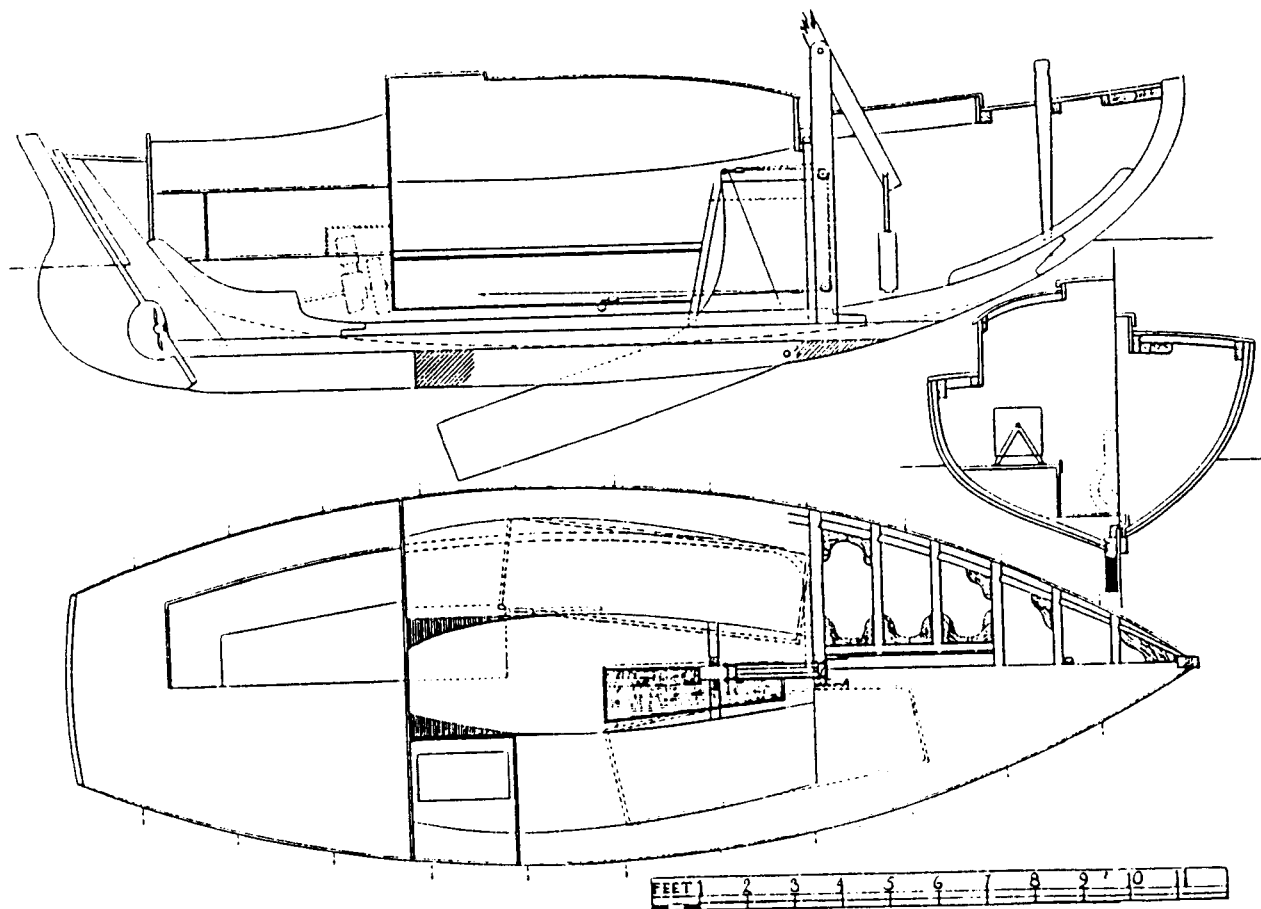
RANA II. IS A SHAPELY LITTLE PACKET

By means of a well cambered cabin-top, there is about 4ft.9in. headroom in the cabin amidships. The two folding cots are arranged with the galley aft, the forepeak being used solely as a storage space.

The cost of a similar boat without an engine would be about £300.

With her good freeboard and powerful sections this is a stiff and able little ship, and as there are no reverse curves to the garboards, except at the stern, the keel and deadwood are most effective in producing lateral resistance when the boat is close-hauled, with the result that the proposed centreboard shown has so far not been needed.

Referring to this centreboard, Dr. Butler writes: "The Lines Drawing shows my own idea of the best arrangement of the centreboard, the well known L-form adopted by Albert Strange and George Holmes, with the top of the L coming out through the cabin-top. The owner preferred that the centreboard should not come through the cabin-top, so the design was modified as shown in the construction and cabin plan."



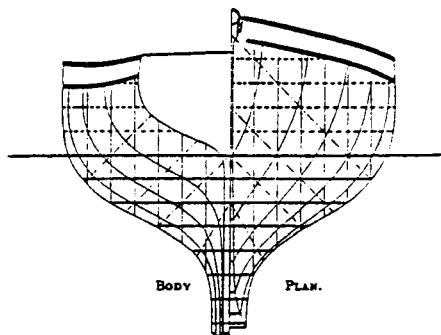
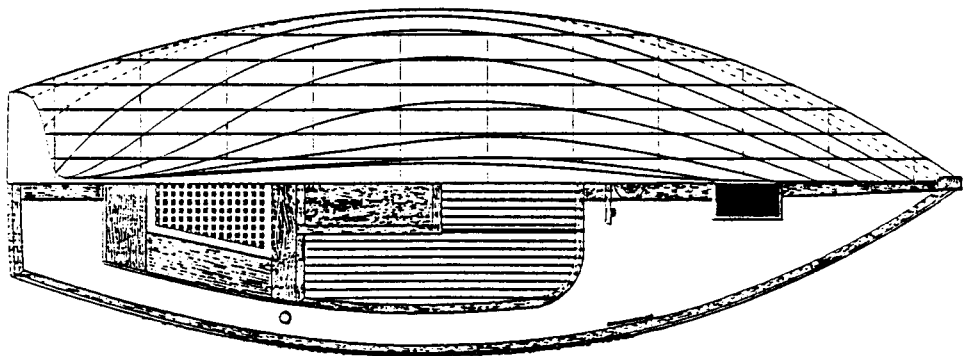
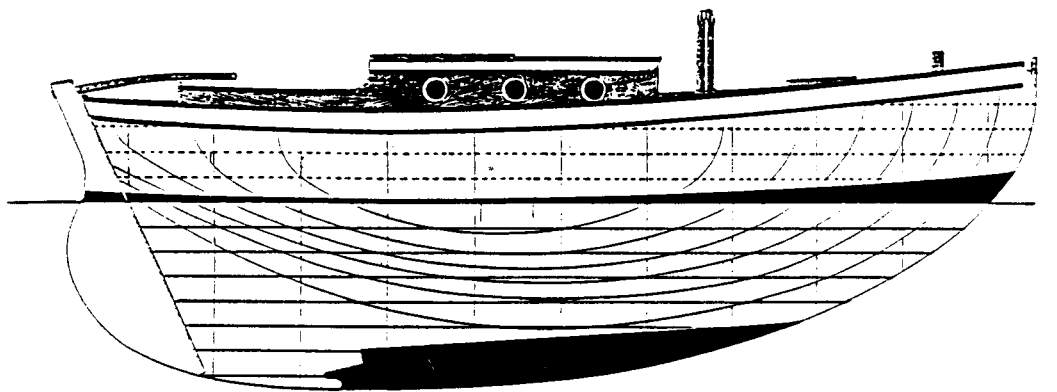
Mainsail 250, Jib 65; total 315 sq. ft.

The rig was to have been Bermudian sloop, but as the mast had to lower, a shorter spar was essential and the gunter lug shown was adopted, with a 'lazy Jack' on the topping lifts.

SEAGULL DESIGN 1912

LOA 20 ft. LWL 18 ft. Beam 7 ft. Draught 3.75 ft.

Displ. 3.2 tons. Iron keel 1 ton. Sail Area 297 sq.ft. T.M. 3½ tons.



Although SEAGULL was originally designed for the Rev.H.C.Bell the only example known to have been built was commissioned by N.Suffling, a brother of H.J.Suffling who owned MEMORY.

The characteristics of the two yachts were compared in a letter by H.J.S. to YM in 1914. It should be noted that the sail area of MEMORY had been increased to 304 sq.ft. and later reduced to 274 sq.ft.

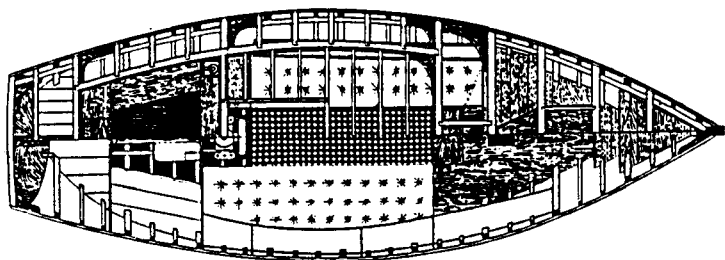
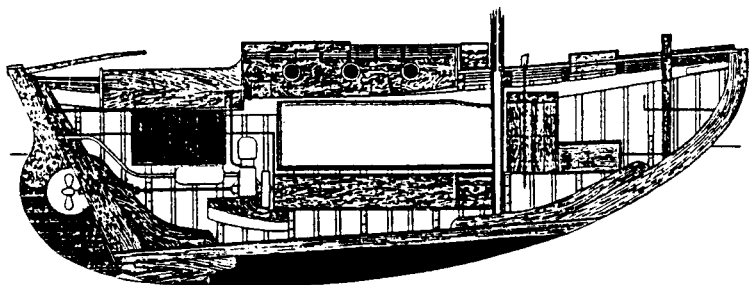
"In light to moderate winds MEMORY was always easily the winner, especially when tacking, also sailing off the wind in all weathers. She is a perfect little yacht in every respect, but in a two or three reef breeze, tacking, SEAGULL could outsail MEMORY anyhow, standing up to her work, making practically no leeway, and pointing and sailing well. Her ability under these conditions was surprisingly good.

Her quickness in stays was remarkable, for not withstanding a larger lateral plane, she came about faster than MEMORY and was almost too touchy going free. With her C.E. 1ft.6ins forward of her C.L.R. she was perfectly balanced at all times. Her fuller lines made her throw the spray about, she being much wetter than MEMORY when facing a breeze and chop.

Personally, I think her formation forward rather too full, and that she would be drier and faster if a trifle finer in this respect.

These boats have not been tested at sea, sharp tidal chops on Breydon Water, and a breeze up to "8" are the worst conditions they have been in.

I believe the designer considers that the finer lined MEMORY would behave more comfortably in a choppy sea outside than the beamier boat. Theoretically this should be so, but I cannot help feeling that SEAGULL'S power in a strong breeze tacking would, even under these conditions, bring her home first.



"The accomodation is arranged as follows: There are two shelves in the forepeak for sails and gear, and for bags. Aft of this on the port side is a bin to hold kit bags, and aft of the bin is a large cupboard with a central shelf.

On the starboard side there would be pegs for oilskins, and aft of these a shelf, which extends right aft to the after bulkhead.

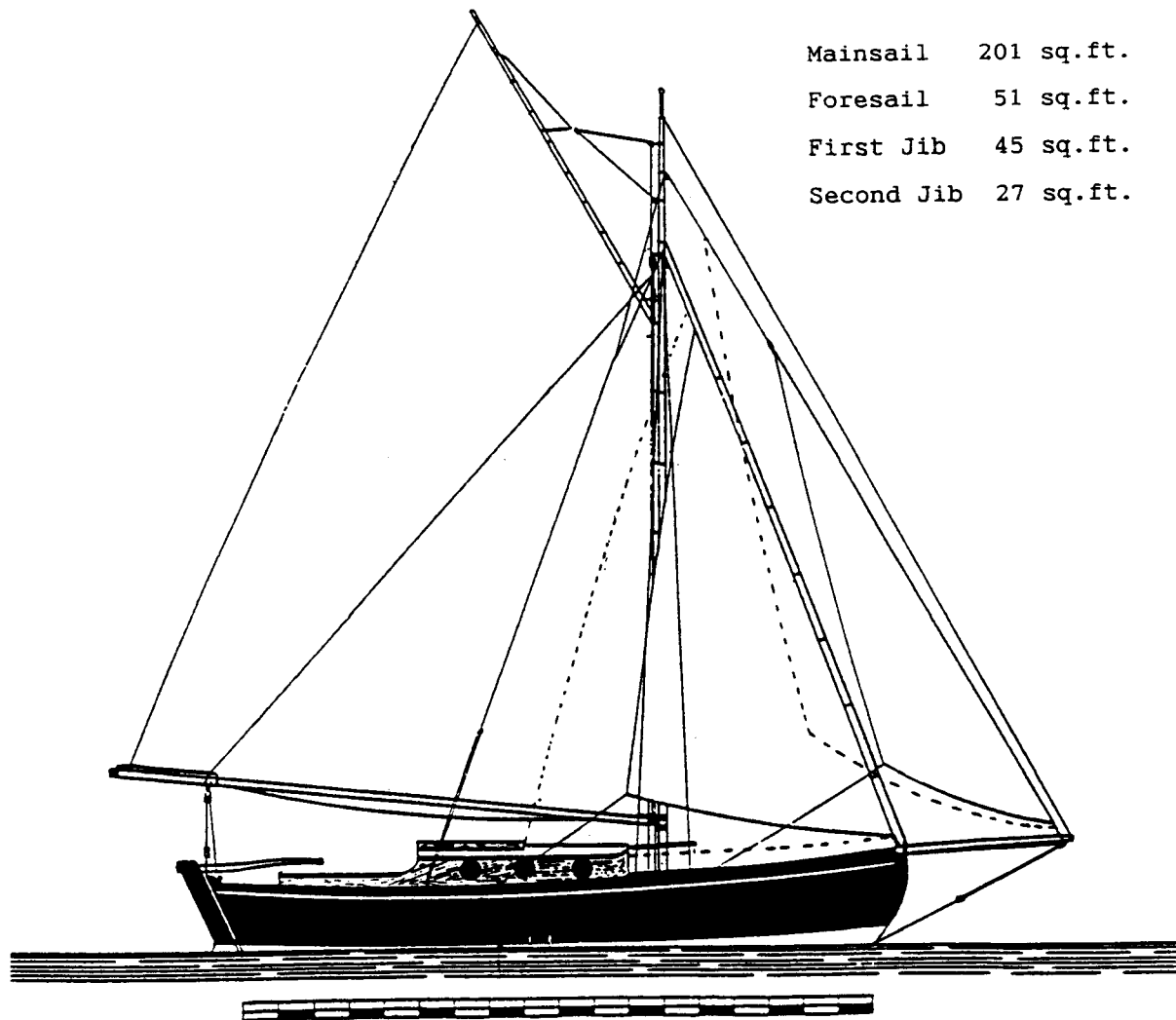
The cabin has 4ft.3ins. head room, and ample floor space. On the port side is a folding cot, and aft of the cot is space for a primus stove. There is no cot on the starboard side, but the seat can be made to draw out or fold over so as to get sufficient width for comfortable repose.

Aft of the mast is a water tank. On each side of the cockpit are lockers accessible from the cabin. The cockpit is lead lined, but not self-draining."

T.H.B. commented; "On the sail plan two centres of effort are marked. (White verticals on LWL. Ed) The forward one is that of full mainsail, foresail and second jib. The aft one is that of full mainsail, and first jib without foresail. According to all the rules of the game the boat *ought* to carry a strong lee helm with first jib and foresail, but, as she has plenty of beam she might balance nicely.

Boats are very extraordinary in this respect; the unexpected happens. I once owned a skipjack sharpie, which carried lee helm on a wind, but griped badly with a free wind."

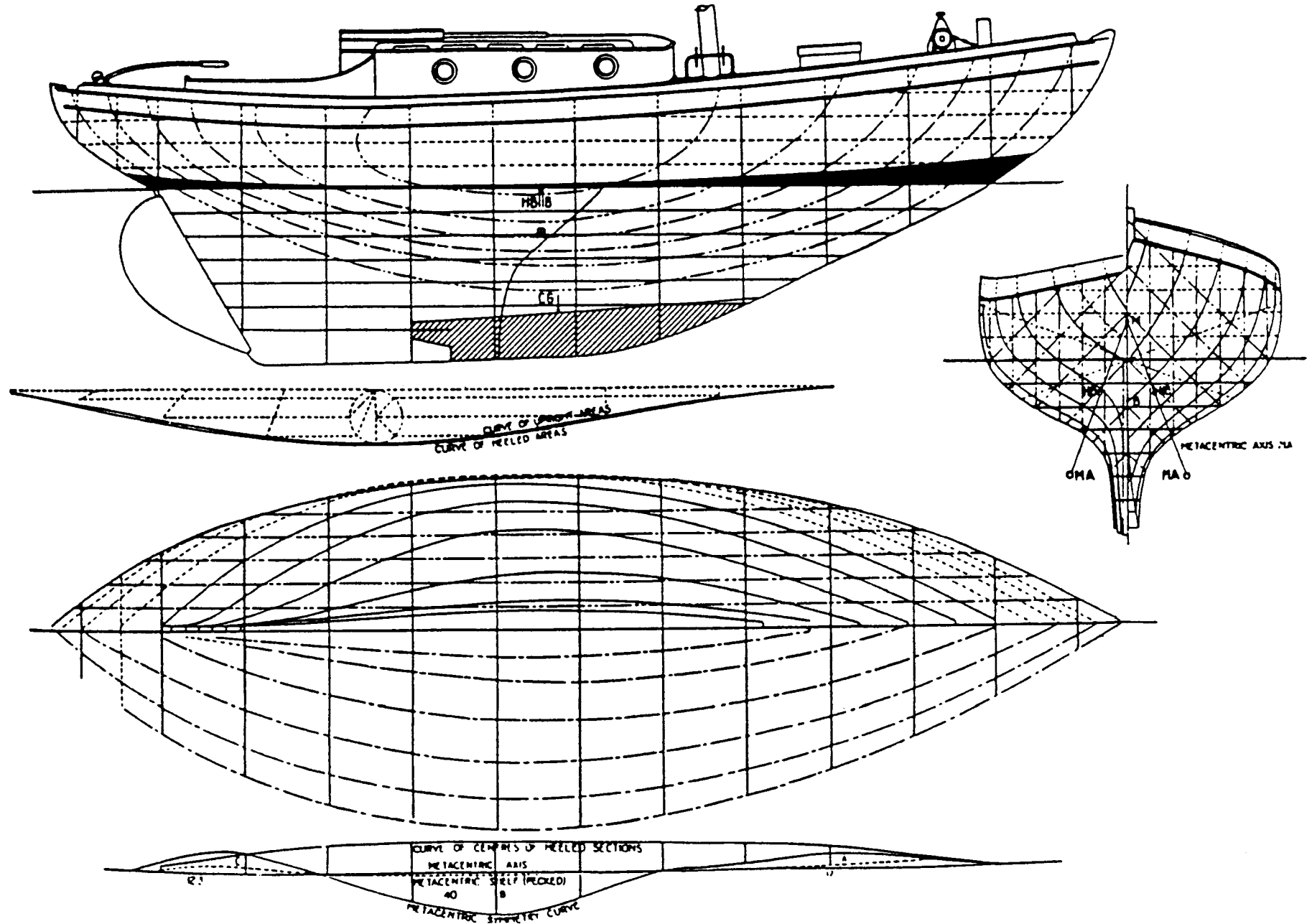
Mainsail	201 sq.ft.
Foresail	51 sq.ft.
First Jib	45 sq.ft.
Second Jib	27 sq.ft.

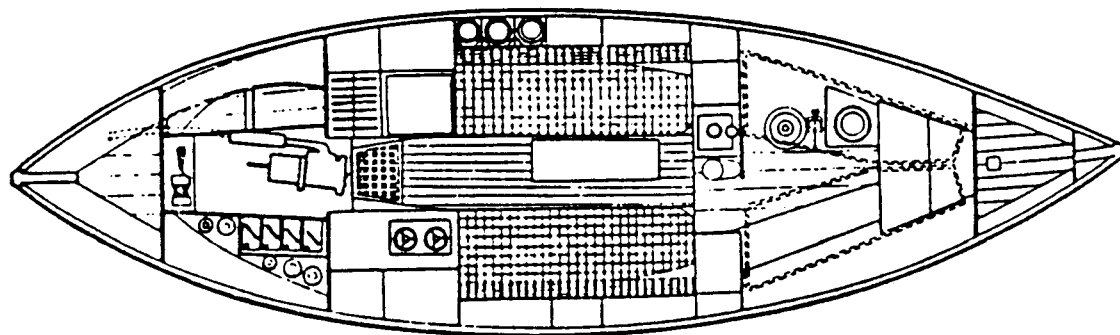
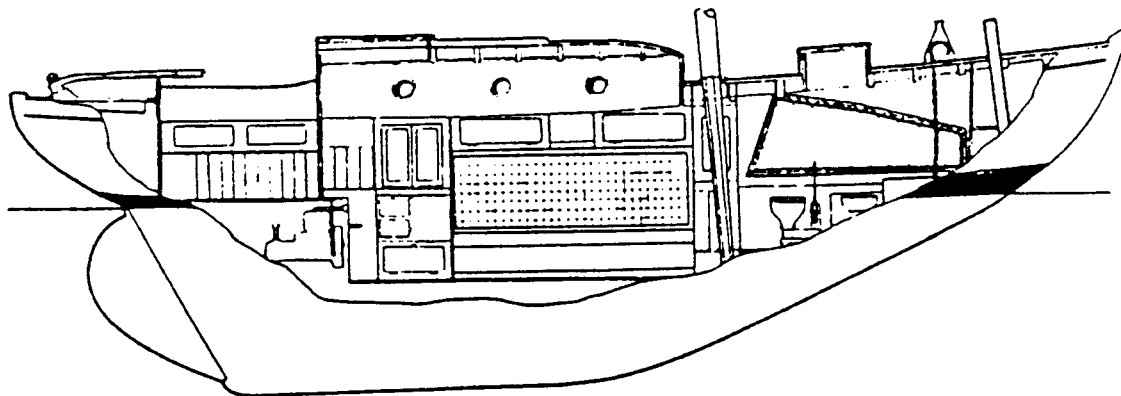


SINAH DESIGN 1935

LOA 31 ft. LWL 24 ft. Beam 8 ft. 6in. Draught 5 ft.

Displ. 6 tons. Lead keel 1.95 tons. Sail Area 416 sq.ft. T.M. 8 tons.





When the SINAH design was first published T.H.B. wrote: "In 1935 I realised that after trying for many years to design a balanced hull I had not succeeded. I had fined down the quarters more and more in each succeeding design, and when built each was better balanced than its predecessor, but perfection had not been obtained.

A study of metacentric designs showed me that, although I had been quite right in my treatment of sterns, I had obviously not filled in the bow enough. The result was that I designed SINAH with the idea that she would be properly balanced.

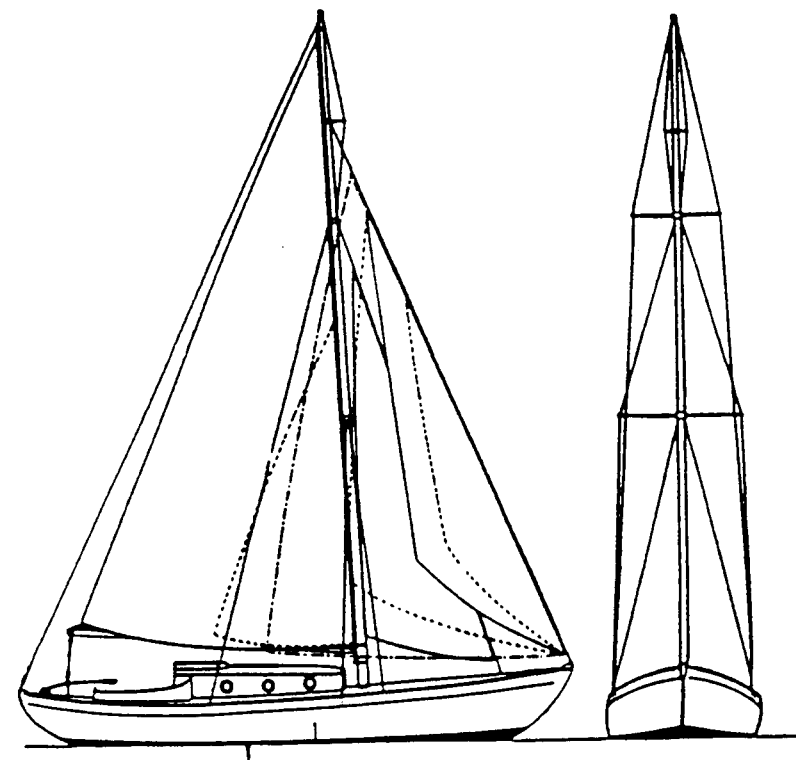
Mr Welch very kindly got out for me what he called a 'curve of centres of heeled sections'. This is really a metacentric shelf plotted from an axis at right angles to the inclined waterlines starting from the intersection of the load waterlines and the central upright axis.

This is what I call the 'Welch Axis' and use it to get out the shelf rather than the actual metacentric axis. It is quite unnecessary to take the trouble to calculate out the metacentre, for this point has really nothing to do with analysis. Later we find the prometacentric axis by a process of trial and error, and this is all that we need.

One day Admiral Turner asked me to spend a weekend with him so he might teach me how to work out a shelf. I took the SINAH design with me, and he worked out her analysis. When I saw the actual working of the scheme I at once saw how simple and valuable it was, and from that time I was able to design with the knowledge that I was no longer dependent on mere inspection of the lines but had in my hand a method of actual measurement. I could get a graph that at once showed the relationships of the displacement fore and aft.

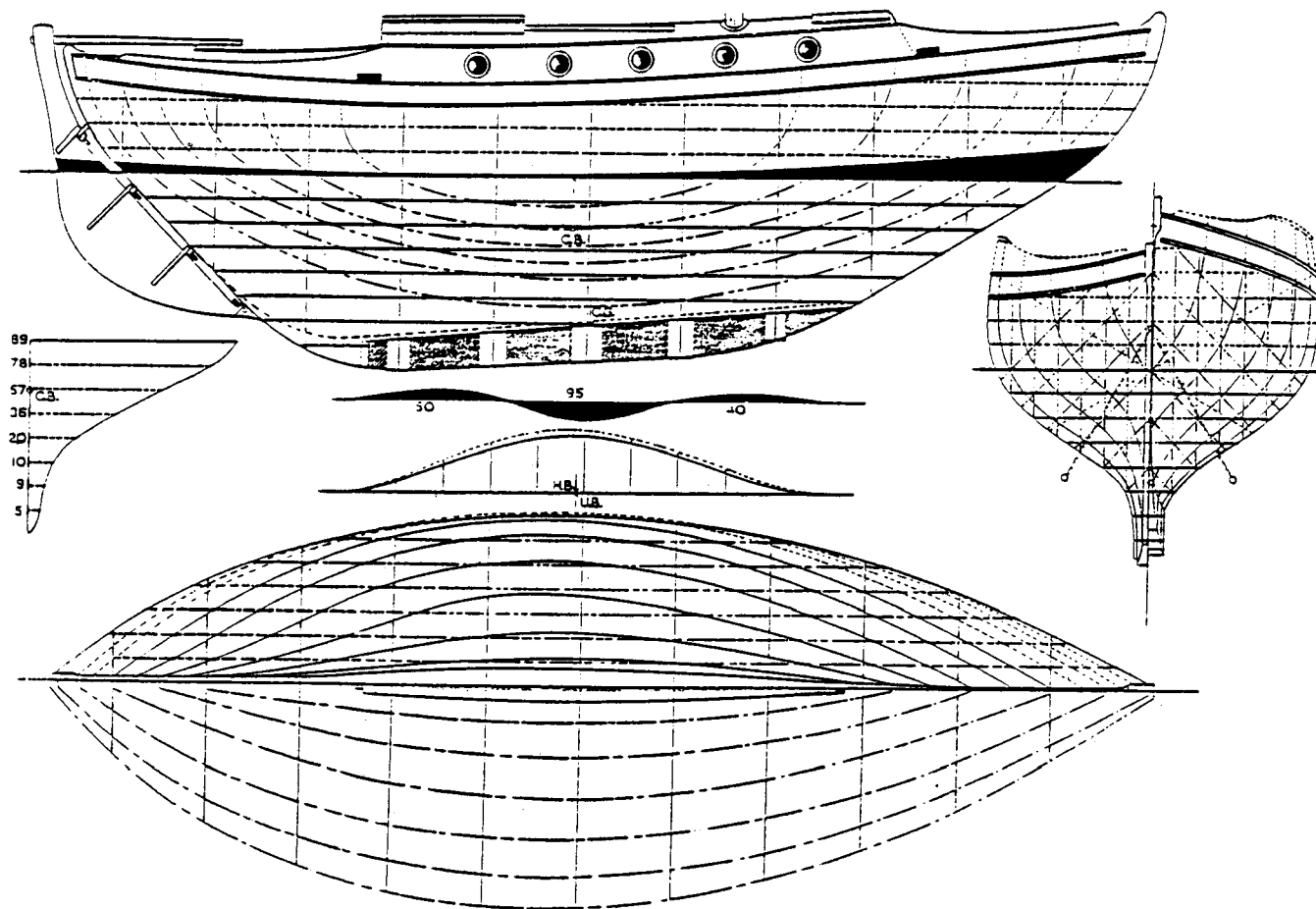
As a matter of fact, SINAH, designed entirely by eye, turned out absolutely correct. her analysis is accurate, in that curve a , or rather $-a$, is $-c$ but $a + c$ is not $-b$. This means she is not quite a metacenteroid. The curves shown are plotted on the actual metacentric axis.

It is necessary to draw another axis parallel to the metacentric axis, that allows the equation to balance, but two or three shots will get it right. This new axis is the pro-metacentric axis



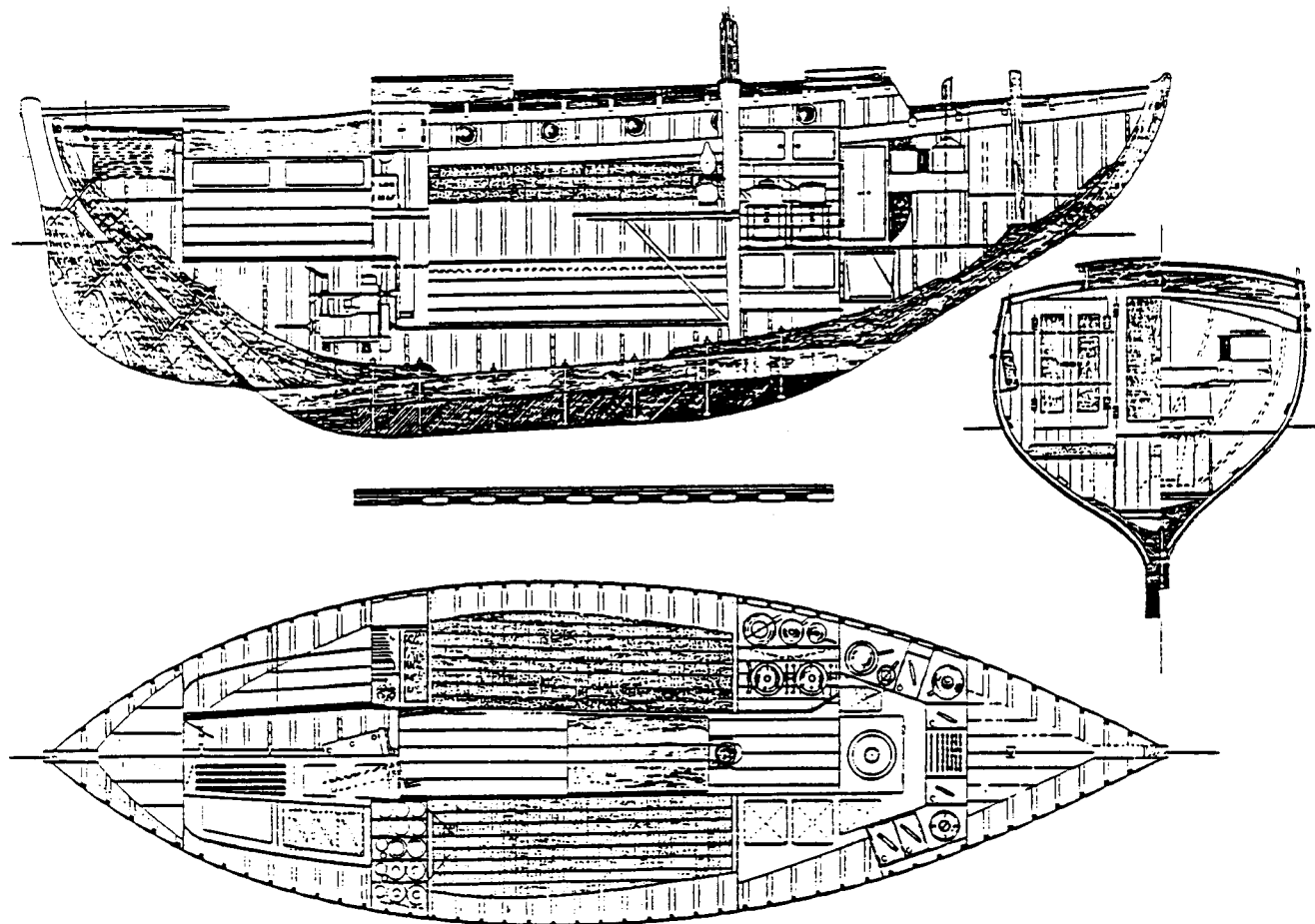
THUELLA DESIGN 1944

LOA 23 ft. 6in. LWL 20 ft. Beam 7 ft.1in. Draught 4 ft.
 Displ. 3.6 tons. Lead keel 1.15 tons. Sail Area 245 sq.ft. T.M. 4.4 tons.



"The lines are metacentrically balanced, and the centres of the curves of upright and heeled areas coincide. The hull is not quite a metacentroid, but I do not think that this is a matter of great importance. The rudder is small and does not come down to the heel of the sternpost. The shape of the hull and its good balance does not call for a large rudder, and the heel had to be well rounded off to complete the metacentric balance.

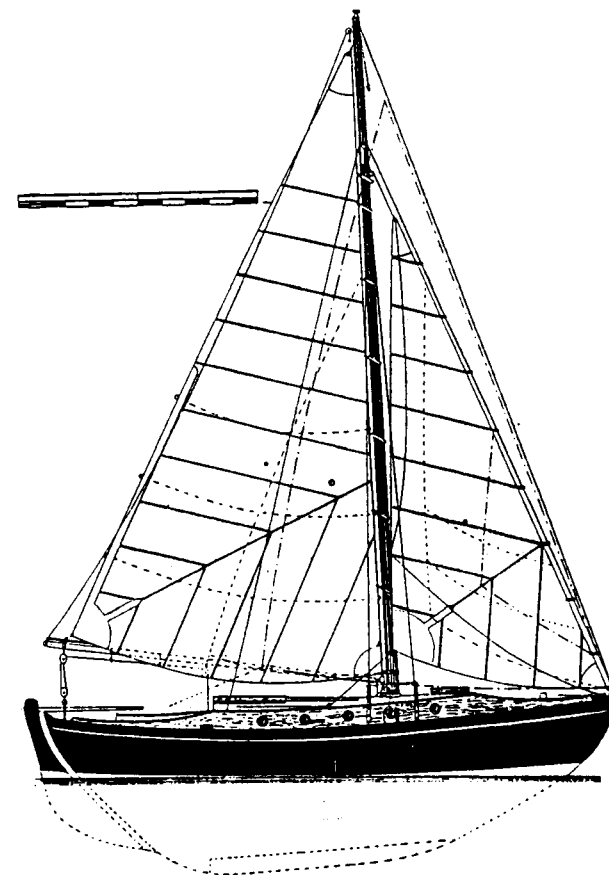
The body-plan shows easy bilges, which make for sea-kindliness, and so does the absence of flaring topsides."



Mainsail.....	165 sq.ft.
Foresail.....	80 sq.ft.
2nd.Staysail....	50 sq.ft.
Storm Stays'l...	15 sq.ft.
Trysail.....	58 sq.ft.
Spinnaker.....	83 sq.ft.

"The profile is well cut away fore and aft, but not unduly. I am not certain that I would not have liked to give the yacht more sheer, but this would have added considerably to the difficulty of planking. The topsides are carried up amidships to form a central turret. This construction is not continued to the stemhead, for we do not want our yacht to resemble a motor boat nor to carry a lot of extra weight and windage forward, where the extra headroom is useless.

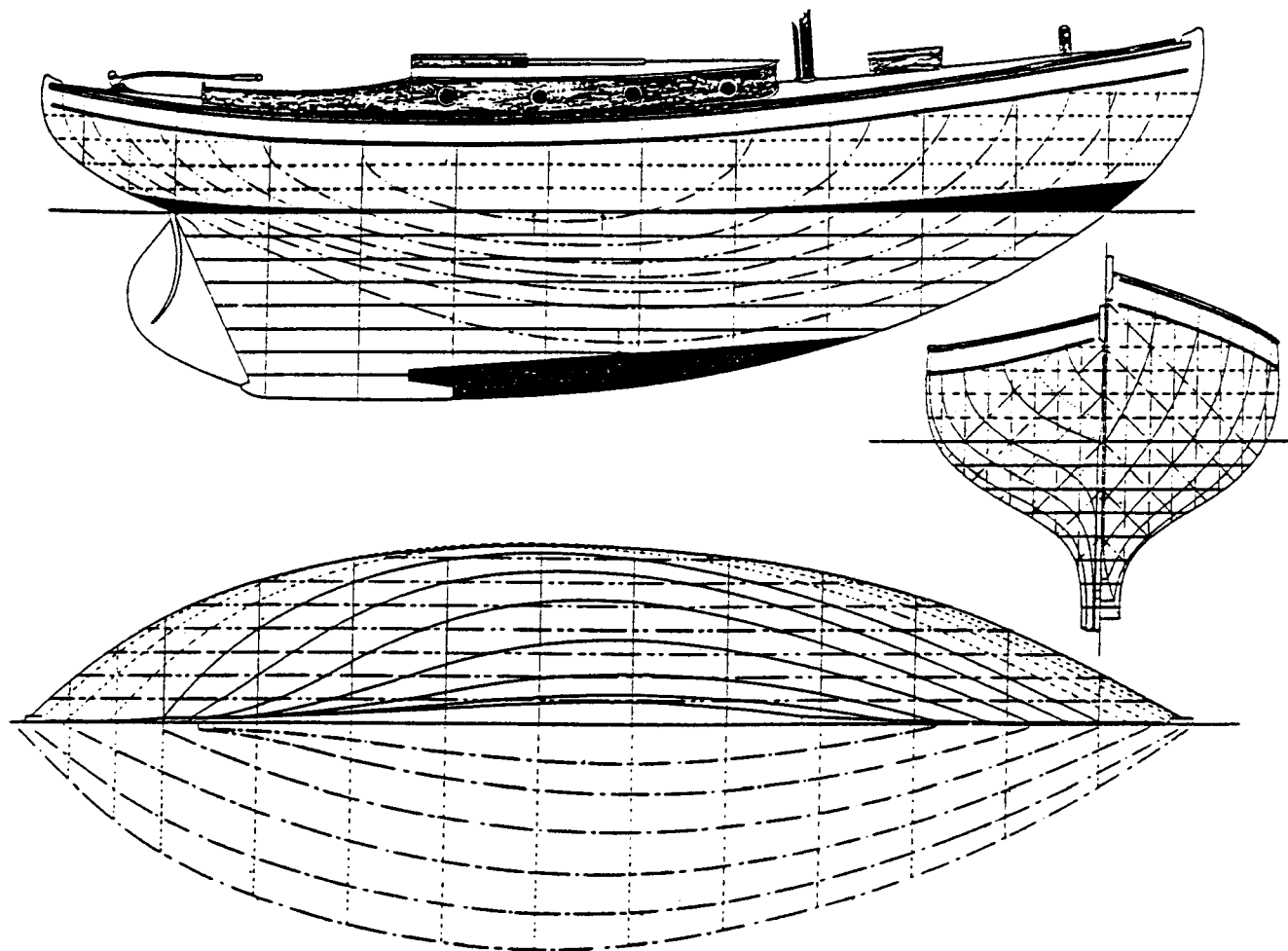
This method of building has every advantage, and I cannot see any disadvantage. If the upper strakes are left bright, or painted a different colour to the actual topsides, and if there are two widely-spaced, broad rubbing strakes, the appearance is quite good. This form of hull is easier to construct than one with an orthodox cabin-top, with all its short half-beams and carlines; it is lighter, stronger and safer; and it gives a noble deck and adds immensely to the room inside. It is worth quite a foot more beam.



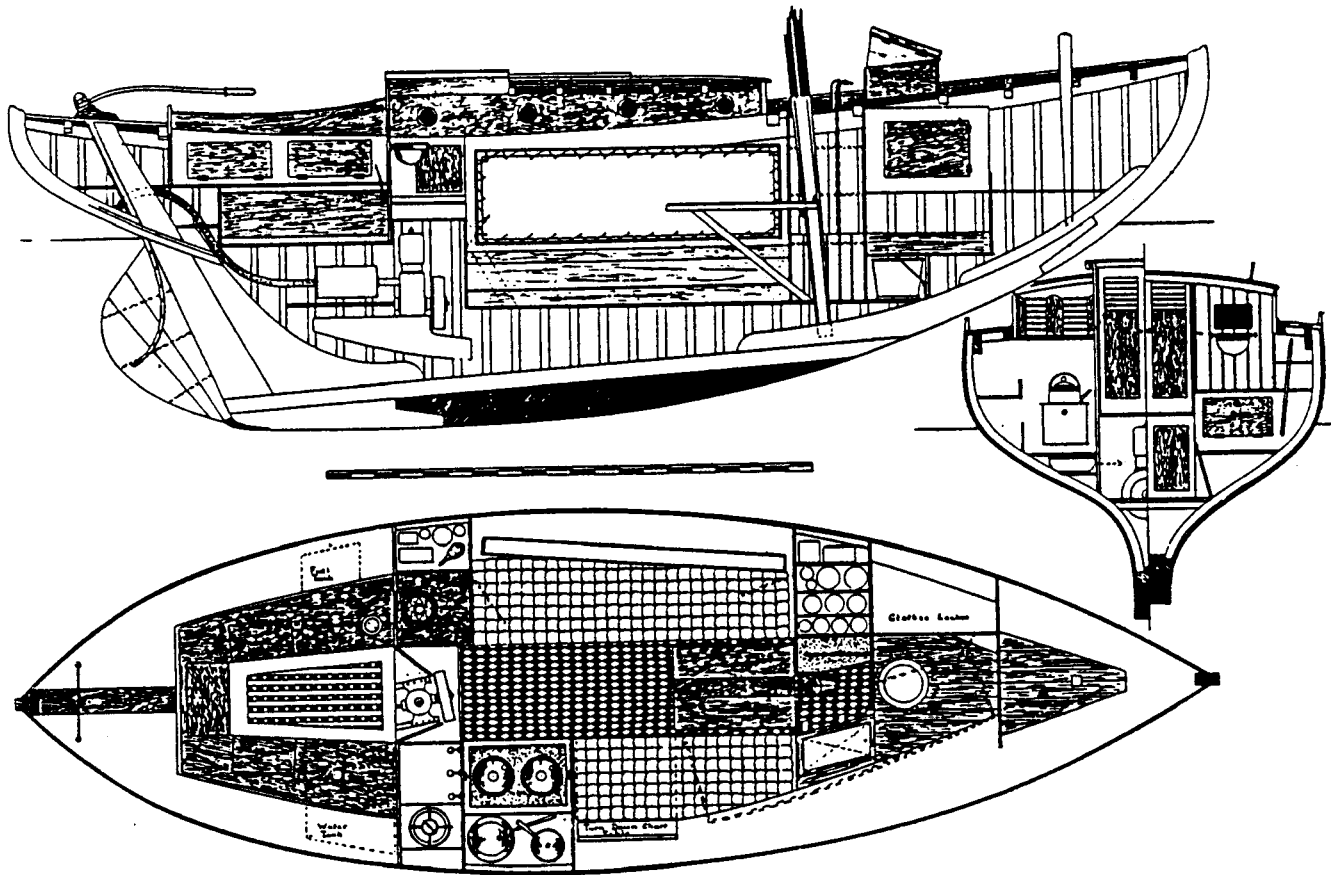
VINDILIS DESIGN 1931

LOA 25ft. LWL 20 ft. Beam 7 ft. 6in. Draught 4 ft.

Displ. 3.57 tons. Lead keel 1.2 tons. Sail Area 300 sq.ft. T.M. 5 tons.



T.H.B. wrote: " In this design I have tried to get as much comfort and capacity for keeping the sea, as is possible on a waterline of 20 ft. A beam of 7 ft 6in. is, I think, about correct: more would tend to make the yacht 'loggy'.and might introduce undesirable tendencies; less would be incompatible with the necessary cabin space; and though it would produce a yacht with a sweeter action at sea, there would be less power, and the angle of heel would be greater. I think it is essential that a small yacht shall sail on her bottom , and not on her side."



The cockpit has lockers under the side decks. The tanks are under the seats as shown in dotted lines, and aft of these are two lockers.

In the cabin there is a hanging locker for oilskins to starboard, and a shelf for the riding light.

To port there is a table and over it the compass; a small cupboard close up under the side holds oddments. Under this table is a clothes locker.

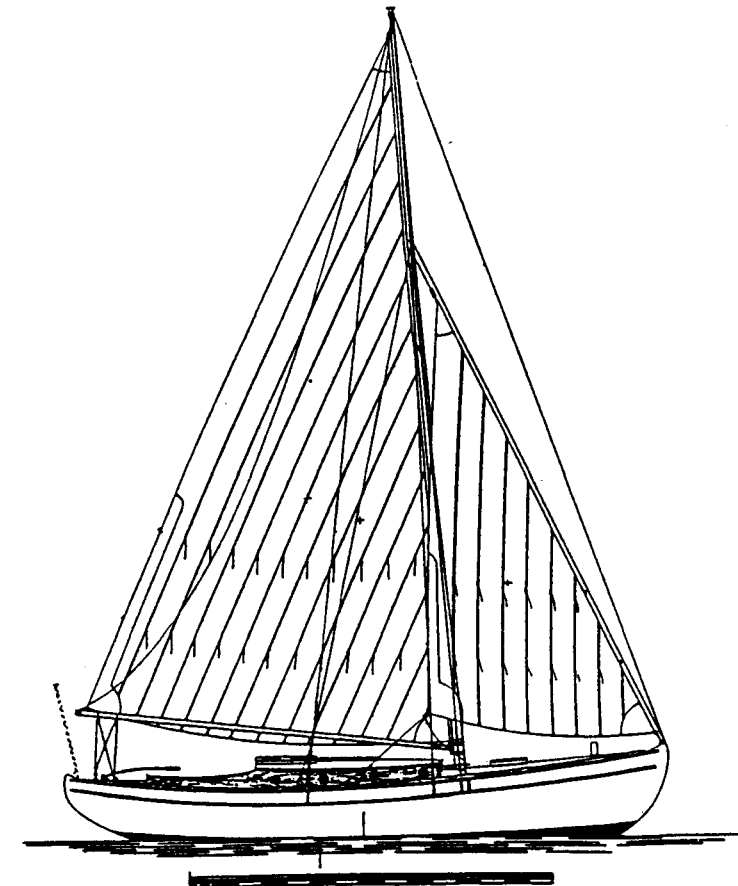
To starboard is the galley, with stowage behind the stove for pots and pans. Under the galley is a pull-out wash basin.

"I have chosen the canoe stern because it is to a designer the logical conclusion of the after body, and gives a better balance of the wedges of emersion and immersion than either a counter or a transom stern.

Also a canoe sterned yacht can lie to a sea anchor astern, and her high bow will keep her stern to sea, aided perhaps by a small jib sheeted flat aft. Judging from what one reads, a sea anchor over the bow is a complete 'wash out', and if it keeps the boat head to wind it endangers the rudder.

The knockabout rig is very simple. I do not think that it would often be necessary to reef the staysail, because these beamy yachts tend to carry strongish weather helm, and even with two reefs in the main, this boat will, I think, balance in a strong wind with full staysail.

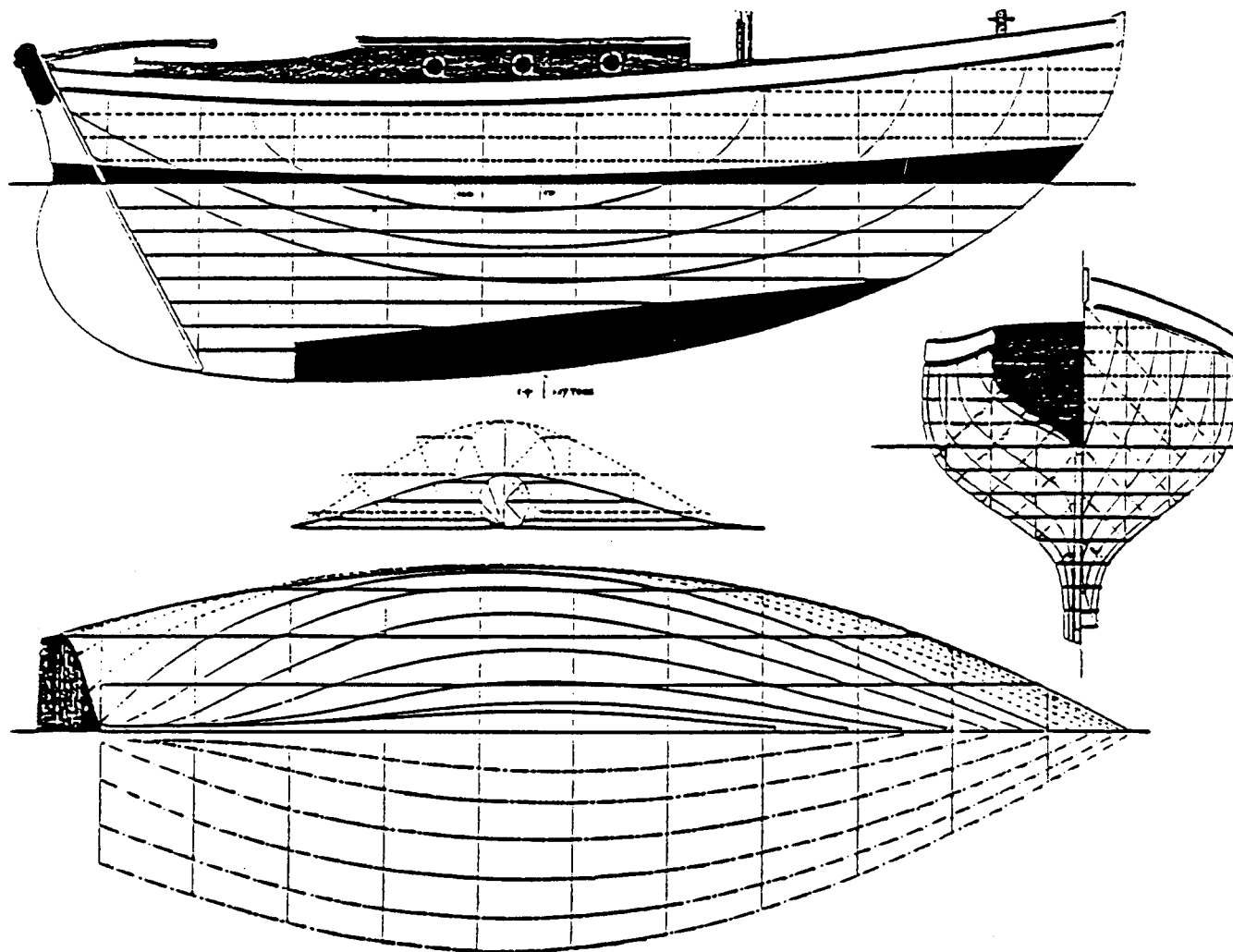
The cutter rig with the mast about a foot further aft would be equally good, perhaps better. I think that she will heave-to with a reef in the staysail, and the main furlled."



WEST WIND DESIGN 1916

LOA 24.16 ft. LWL 21 ft. Beam 7.08 ft. Draught 4.16 ft.

Displ. 3.8 tons. Iron keel 1.57 tons. Sail Area 305 sq.ft. T.M. 4 tons.



In the same article T.H.B. considered the size of small cabin yacht suitable for the week-ender living far from his boat.

"Probably for the average man the best size will be about four tons. A length between perpendiculars of 22 ft., combined with a beam of 7 ft., works out at four tons Thames measurement.

The best proportions are about one third of the waterline length for beam, and one-fifth for draught. The least freeboard should be in the neighbourhood of one-tenth of the waterline length, from water level to the top of the covering board. Most yachts have less, but in a small craft good freeboard will keep her dry, give good reserve of stability, and supply the necessary headroom in the cabin without a high coach roof.

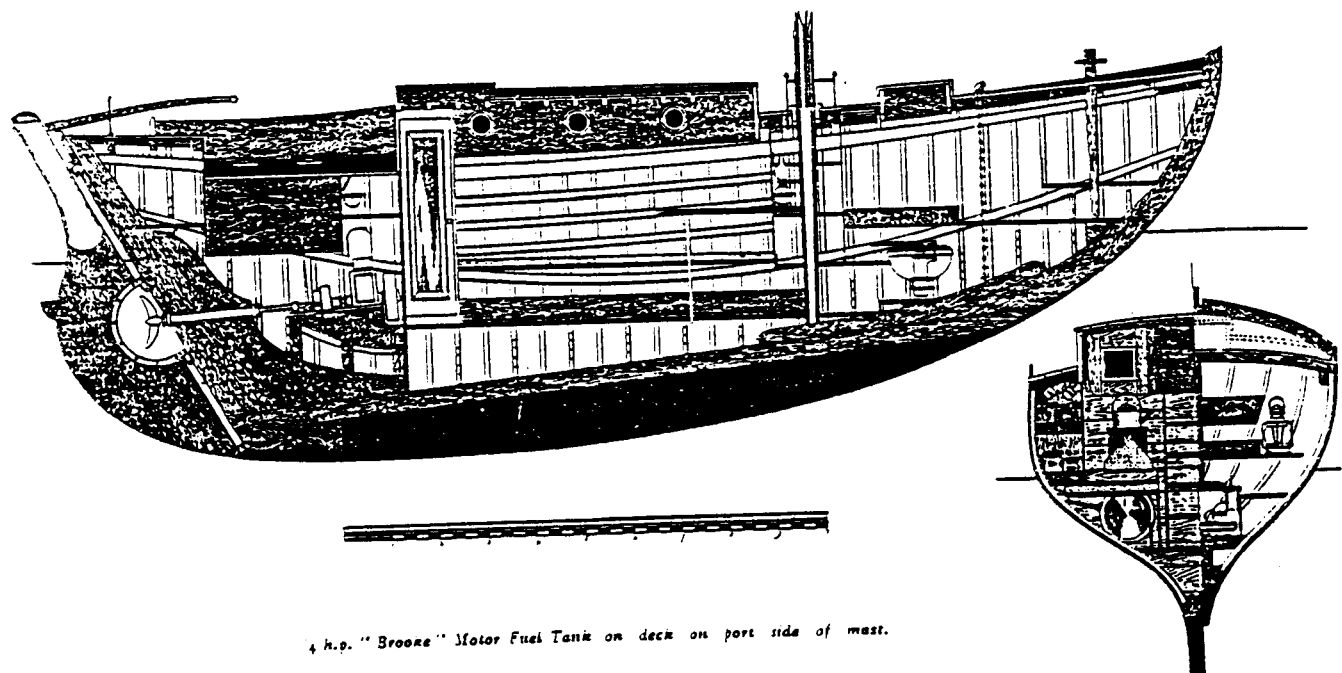
The yacht may have a square stern, a shortish counter, or a canoe stern, according to taste. Each type is, if correctly designed, equally seaworthy, and equally fast.

There should be some forward overhang, but it should not exceed the least freeboard measurement. A yacht intended for open sea work will demand a good forefoot and little overhang. This forefoot may be sufficiently cut away to ensure handiness, but there must be enough lateral plane to make the craft run well and to heave-to in disturbed water.

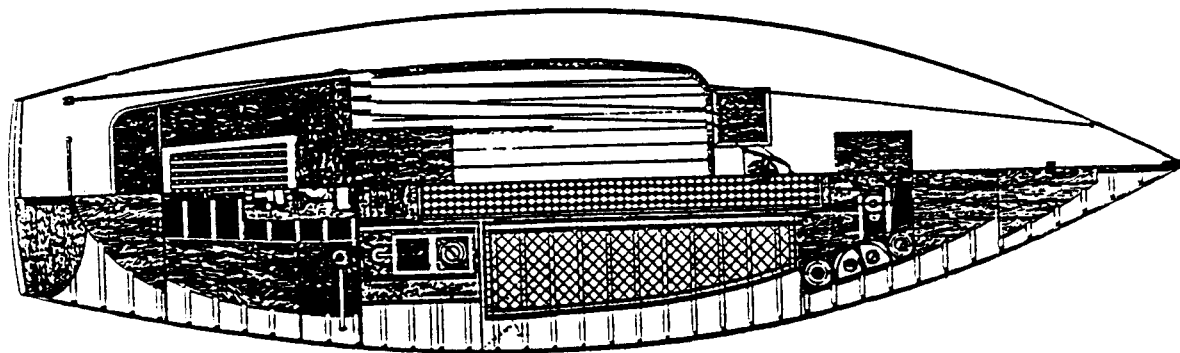
In January 1917 T.H.B. had a long article entitled 'The Week-end Single-handed Cruiser' published in Y.M. The article commented on three designs, No.1 was by H.J.Suffling - the first owner of MEMORY, Nos. 2 & 3 by T.H.B. Design No.2, became known as WESTWIND when she was built in 1928 for N.A.Suffling, nephew of H.J.

In describing the design T.H.B. wrote: "The lines are in no sense experimental, but are those of the MEMORY enlarged and somewhat refined."

The bilge must not be too pronounced if an easy sea boat is desired; the powerful yacht may be capable, but she is not comfortable. The yacht which heels easily will be kind to a raw crew, whereas the hard-bilged or beamy craft will wet her owner and perhaps make him sea-sick."



$\frac{1}{4}$ h.p. "Brooke" Motor Fuel Tank on deck on port side of mast.



"The rigs suitable for our purpose are: Cutter, Sloop and Sloop-yawl. My own choice for ordinary week-end sailing would be the gunter lug with a single head-sail, preferably set on the stem-head. I should keep the area moderate. Most yachts are oversailed. A good rough rule to apportion sail area to a yacht of the type under discussion is to make it three-quarters of the square of the waterline length. Mr Albert Strange recommends 100 sq.ft. for every ton of displacement."

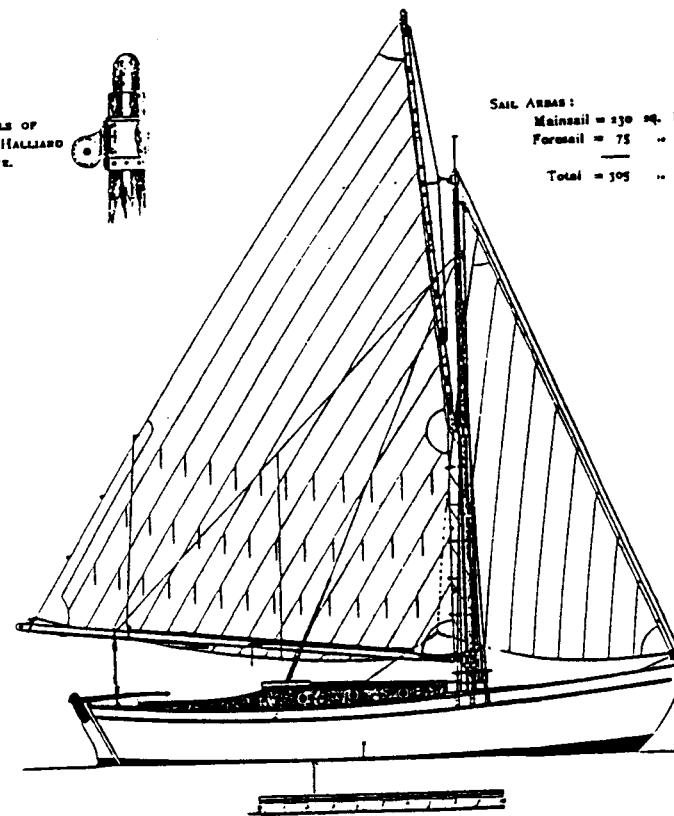
SCANTLINGS.

$\frac{3}{4}$ in. planking of 1 in. pitch pine; garboard strake and sheer strake of hard wood. Timbers all of American elm, bent, 1 in. by $1\frac{1}{2}$, spaced 7 in. centre to centre; an extra timber to be worked in way of mast. Beams of oak; main beams, $2\frac{1}{2}$ in. by 3 in.; through beams, $1\frac{1}{2}$ by $2\frac{1}{2}$ in.; half-beams, $1\frac{1}{2}$ in. by 2 in.; shelf, 2 in. by 3 in.; carlines, $2\frac{1}{2}$ in. by 2 in.; cabin top, $\frac{3}{4}$ in. teak on oak beams $1\frac{1}{2}$ in. by $1\frac{1}{2}$ in., spaced 7 in.; deck, $\frac{3}{4}$ in. pine, canvas covered.

DETAILS OF
PEAK HALLIARD
SHEAVE.



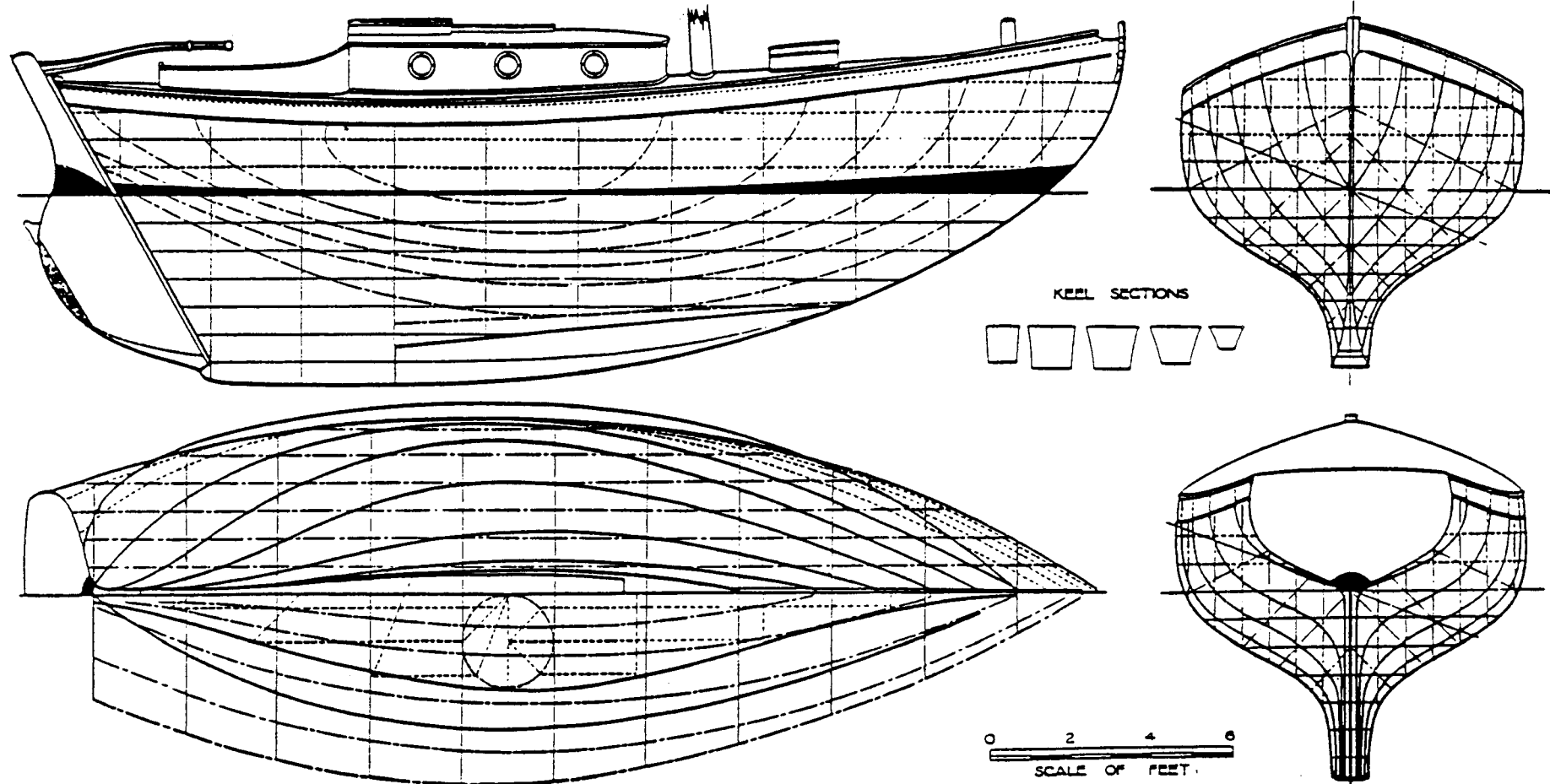
SAIL AREAS:
Mainsail = 330 sq. ft.
Foresail = 75 ..
Total = 405 ..



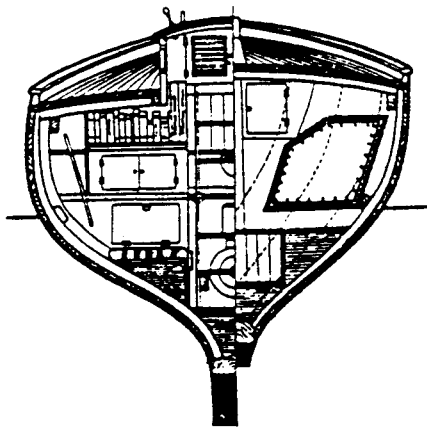
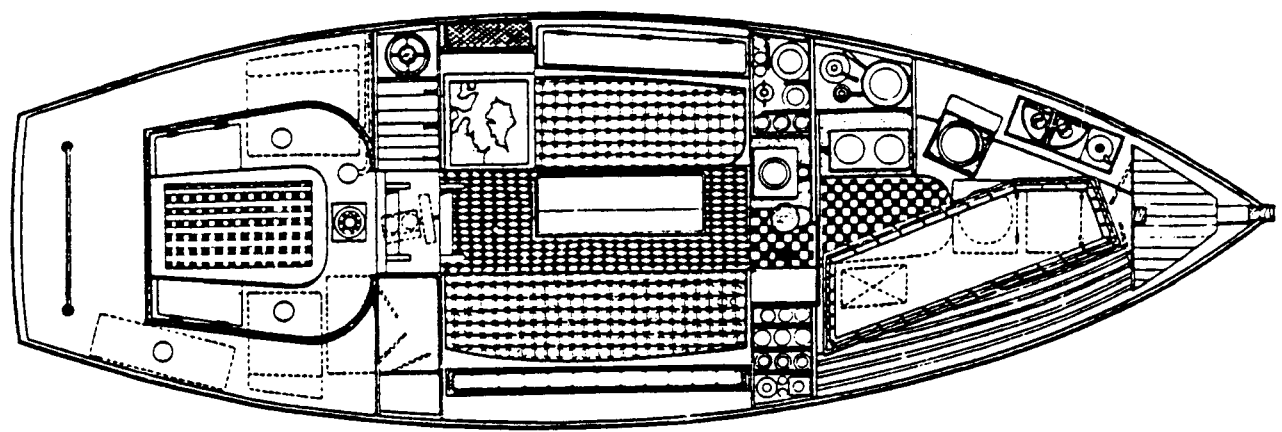
YONNE DESIGN 1931

LOA 26ft. LWL 22ft. 6in. Beam 8ft. 7in. Draught 4ft/4ft. 6in. T.M. 6.8 tons

Displ. 5.5/5.45 tons. Keel Lead/Iron 2.2/1.6 tons Sail Area 393 sq.ft.



When this design, described by T.H.B. as a 'sports model' of the earlier CYCLONE II design, was published in YW. in 1932 the Editor commented: "It is a little unusual to find the mast of a Bermudian cutter of such small size stepped in the same position as that of a gaff cutter, namely, two-fifths of the waterline abaft its forward end, but this has been done purposely in order to obtain a comparatively large staysail.



T.H.B. has found that MINION, a CYCLONE II, would sail to windward under her headsails alone, and would come about readily in smooth conditions in Southampton Water. With the jib aback and the mainsail lowered she would heave to and remain steady. He anticipates that YONNE would behave in a similar manner under staysail alone.

When running before the wind the staysail and the mainsail would be goose-winged, and it should be possible to make the staysail spill the wind into the jib so that all sails are drawing instead of hanging idly,blanketed by the mains'l.

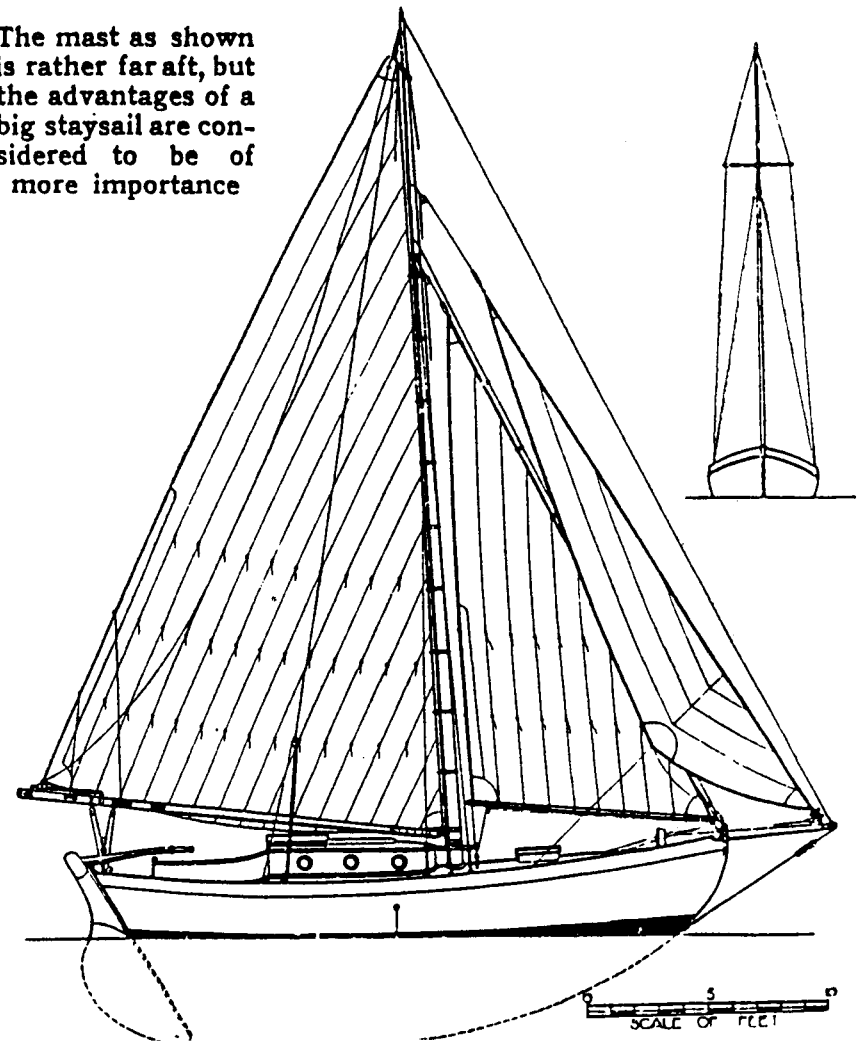
From a glance at the lines it appears that YONNE has plenty of grip of the water and a nice clean run, so in all conditions she should be remarkably steady on her helm, in spite of her short length. In small craft of this type steadiness and the ability to look after herself are very valuable qualities.

In the accomodation plan the mast is actually shown stepped nine inches further forward than in the sail plan; if a larger area were required this alteration would be necessary, and the larger mainsail would be balanced by a larger jib. Actually, the position shown would make very little difference to the arrangement below.

In small cruisers there is one thing which T.H.B. never omits, and that is provision for handling charts in a convenient position. Just inside the cabin to port is a big hanging locker for oilskins, another item which is not always remembered.

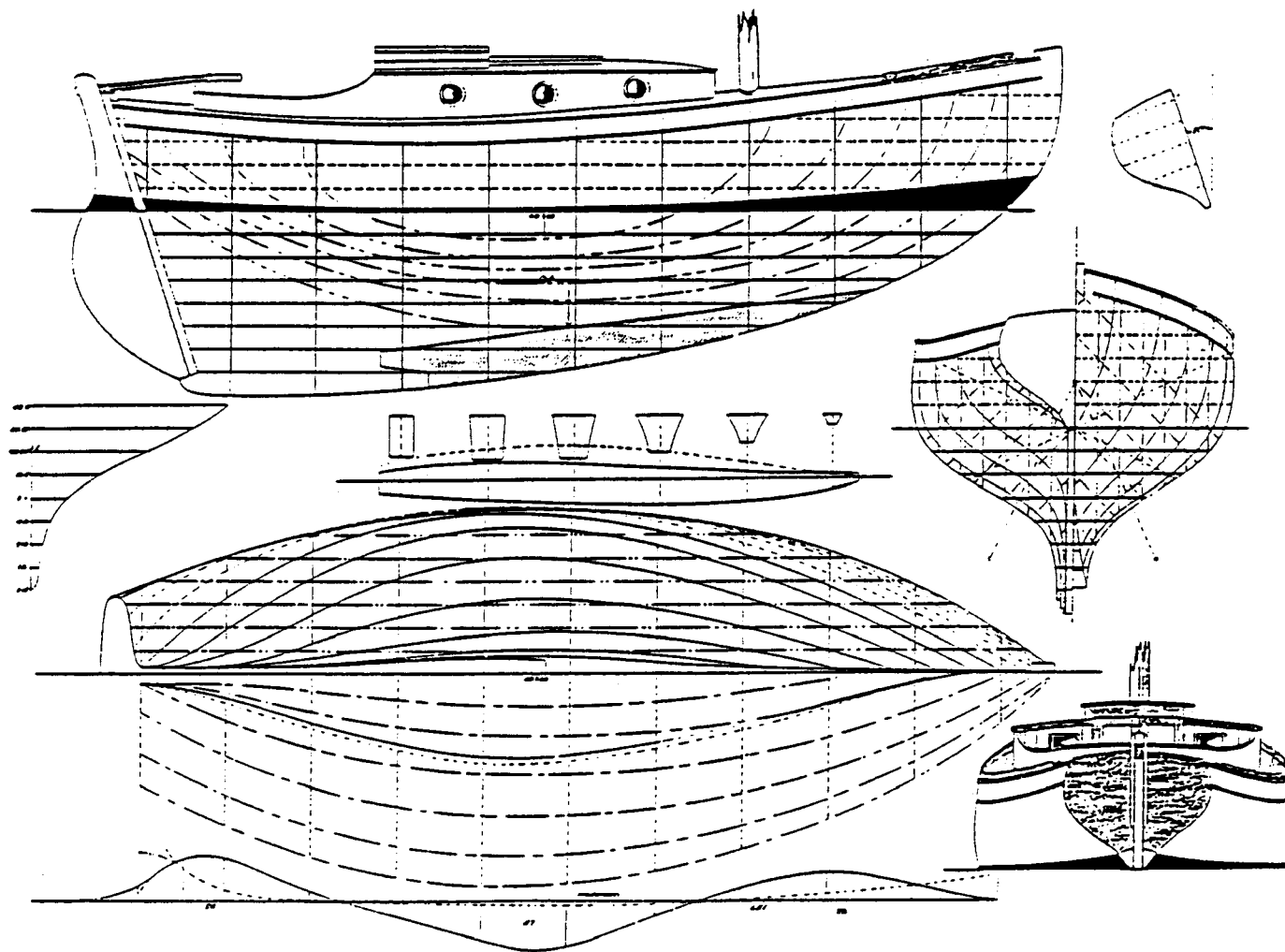
The position of the bilge pump just to port of the compass is well chosen, and it is worth noticing that the discharge from this pump passes through the topsides just below the rubber and not on to the deck.

The mast as shown is rather far aft, but the advantages of a big staysail are considered to be of more importance



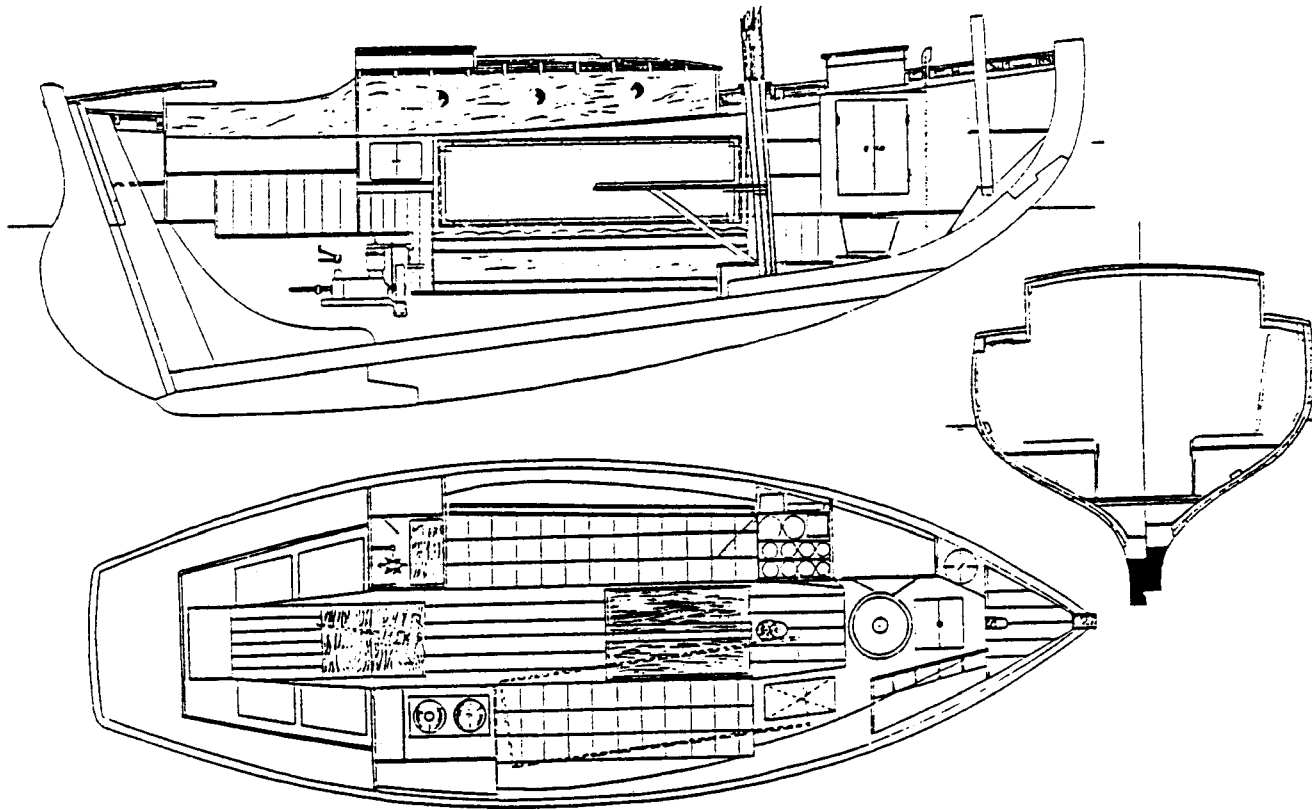
ZYKLON DESIGN 1937

LOA 21 ft. LWL 19 ft. Beam 7 ft. 2in. Draught 4 ft.
 Displ. 3.3 tons. Iron keel 1 ton. Sail Area 260 sq.ft. T.M. 3¼ tons.



Writing in YM in 1937 T.H.B. described the ZYKLON design: "Twelve years ago I designed the 4-tonner which I called CYCLONE because the first that was built weathered what the owner described as a cyclone on the coast of Sweden."

(There is some confusion here. In her Biographical Portrait in the 4th edition of the book Joan dates the CYCLONE design as 1919. 'Twelve years ago' in 1937 equates to 1925. This coincides with the date that the CYCLONE design was first published in YM. Ed.)



In addition to the Zyklons built in various yards the design was used by Capt. O.M. Watts Ltd and marketed as the 'Z Four-Tonner.' About fifty of these were built.

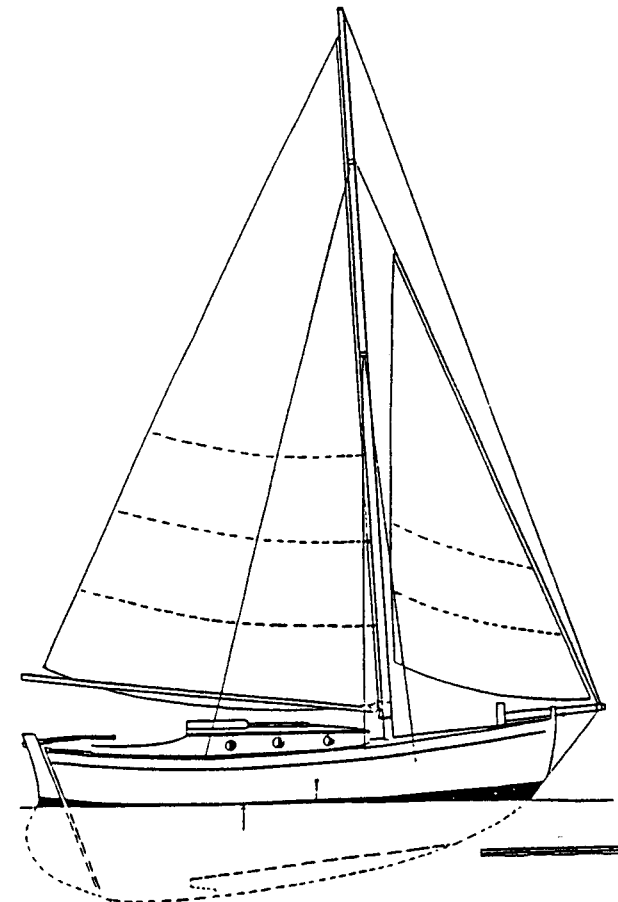
Mainsail.....190 sq.ft.
 Jib.....70 sq.ft.
 Balloon Satysail..100 sq.ft.

"It seemed worth while to modernize CYCLONE and give her a good metacentric analysis. I also wished to find out whether I could satisfy the Turnerian Hypotheses with a design that had no overhangs, one of the type beloved by the hard-bitten shellbacks of a past age.

ZYKLON is the result. She has the same dimensions as the original CYCLONE, except that her draught has been increased to 4 ft. Above water her appearance is similar, but I have given her more sheer, for CYCLONE looked too flat when built. Of course, the forefoot had to go, for it is almost impossible to design a well balanced yacht with a deep forefoot.

She has a long keel, with plenty of drag aft, and I anticipate that she will be self-steering and will even run with an occasional touch with the finger on the tiller.

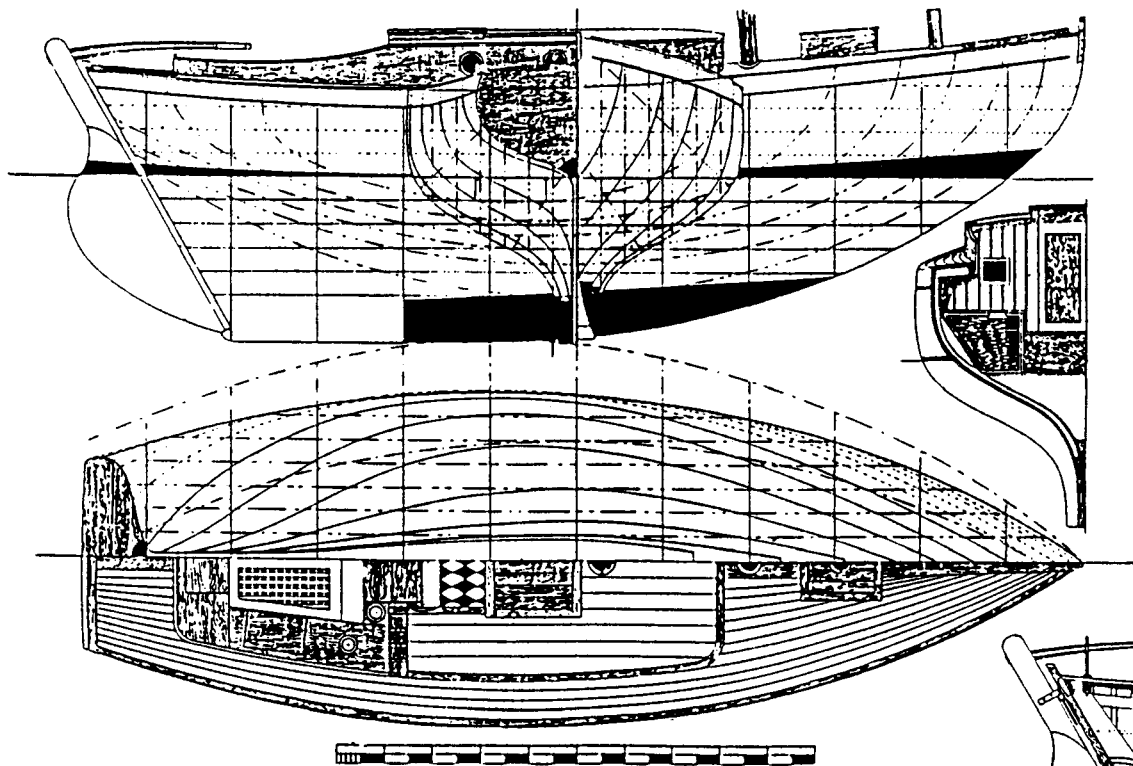
Her metacentric analysis is perfect: $(-a)+(-c) = -b$, and $-a = -c$. She is almost a metacentroid, but not quite. The curves of upright and heeled areas almost coincide."



'No 16' - TABLOID 18 FT.L.W.L. 1928

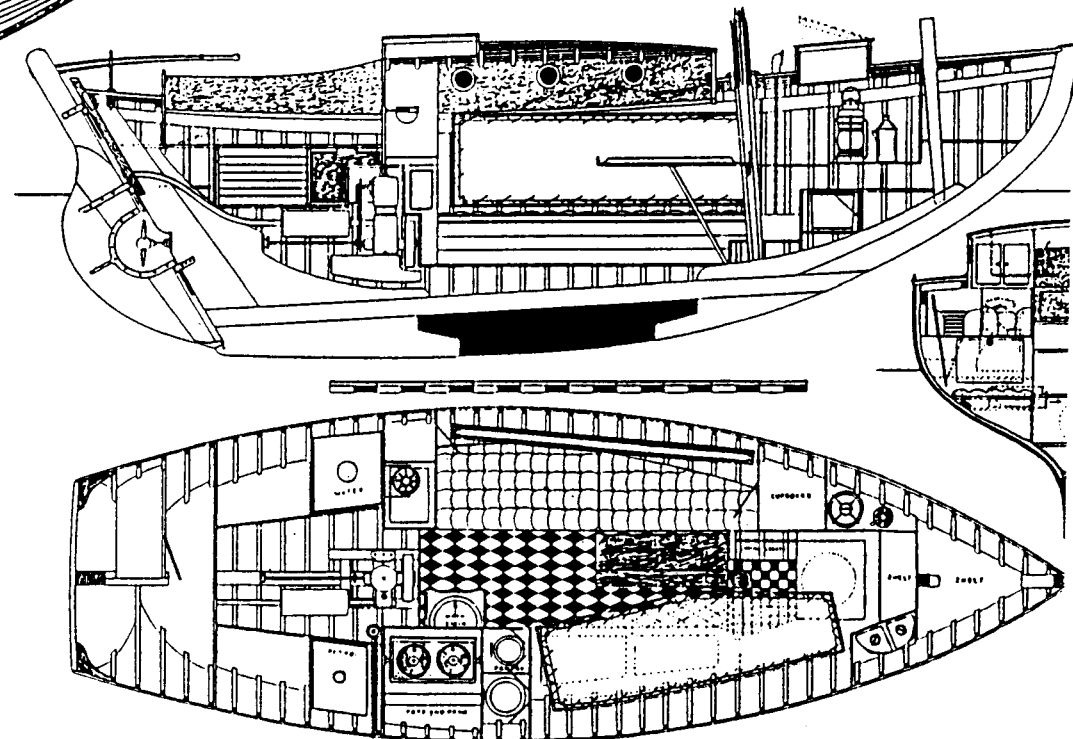
LOA 21 ft. LWL 18 ft. Beam 7 ft.1in. Draught 3 ft.6in.

Displ. 3 tons. Iron keel 1 ton. Sail Area 265 sq.ft. T.M. 3.7 tons.



"She was remarkably stiff and went to windward splendidly. I came to the conclusion she was the nicest boat I had ever sailed. The only fault she had was a tendency to carry rather too much weather helm.

As a result of my experience in CHLOE I altered the sail plan slightly so as to bring the centre of effort more for'ard. CHLOE was so stiff that I had no hesitation in reducing her draught three inches. The drawing shows both a lead and iron keel. With these exceptions the present lines are those of the original design.



This design won first prize in a Y.M. design competition in 1929 for a sailing cabin cruiser for at least two persons, 18 ft. on the water line and fitted with an auxiliary engine. Only the LWL was limited, all other dimensions were left to the designer's discretion.

In a letter to the editor T.H.B. remarked: "I am sure that your readers who honour me by awarding me the first prize in the designing competition will be interested to hear that No 16 is an actual yacht and not a mere design.

The original drawings of the tabloid were published in Y.M., Vol. 28 page 210. (see CHLOE DESIGN 1919. Ed.) Two boats were built to the design and I sailed aboard one, Chloe, in the Solent"

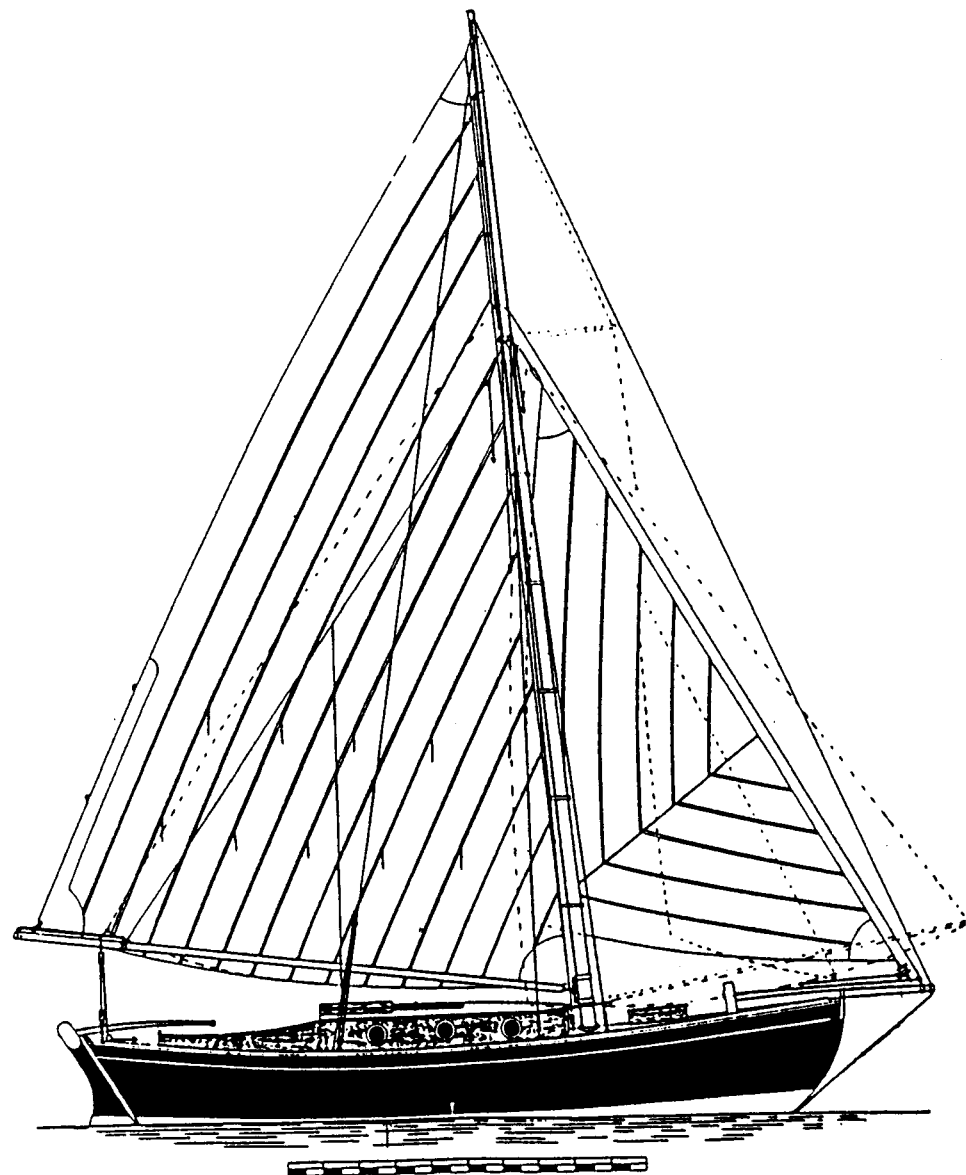
Although I regard CHLOE as an ideal boat, and as the best I have ever designed, I cannot advise anyone to build her. It would not cost much more to build her with a W.L. of 20ft., and the resulting yacht would be far better in every respect."

T.H.B. continued : "Let the lines be enlarged proportionally to a water line of twenty feet without any further alteration. Again the lines would make a splendid yacht if the scale were taken as $\frac{3}{4}$ in. to the foot instead of 1 in. to the foot. This would give a yacht with 24 ft. load water line, and 9ft.4in.beam."

It is interesting to note that T.H.B. stated that his design YONNE "is practically an enlargement of the design which won the competition held by the Yachting Monthly for a yacht of 18 ft.on the LWL."

At least two examples of the 'No 16 Tabloid 18ft LWL design' are known to have been built. One, ELGRIS, is presently being sought in the Falmouth area. The other VA DANSER was built in Carentec, Brittany, in 1932 by E.Moguerou.

In 1957 VA DANSER, then owned by one Bernard Kohler, left Concarneau and made an Atlantic crossing to St Lucia via the Canary Islands. She must be the smallest H.B. boat to have made a Transatlantic crossing.



CYCLONE 20 FT. LWL. 1921

This was the CYCLONE design of 1919 with the sections spaced to give a waterline of 20 ft. and an increased sail area. No drawings are available. It is believed that only one example was built.

ARGO DESIGN 1914

LOA 28 ft. LWL 21 ft 9in. Beam 7 ft. 8in. Draught 5ft. 4in.

Sail Area Gaff Cutter Rig 500 sq.ft. T.M. 6 tons.

The dimensions above are taken from Lloyds Register of Yachts 1915 edition. No drawings are available. The only known example of the design, ARGO, has recently been restored and is now afloat.