

25-Foot Auxiliary Cutter For Pacific

Fishermen



This 25-foot auxiliary cutter was designed primarily for use in Pacific waters as a "live-well" fishing boat. However, she could equally well be used as for trochus fishing, carrying copra, or as a general work-boat. She was designed in collaboration with the Commission's fisheries officer by a leading Australian naval architect, who contributed the article below.

By ARTHUR N. SWINFELD

An artist's impression of the cutter under sail. Under power, a speed of up to 7 knots could be expected from a diesel motor of around 20 h.p.

THIS small 25-foot vessel should fill many needs throughout the Pacific islands. First and foremost she is intended to operate as a "live-well" fishing boat, but if this is not required she could readily be used for trochus fishing or as a copra-carrying vessel.

In an article entitled "25-Foot Motor Fishing Boat For Pacific Waters" that appeared in the *Quarterly Bulletin* for April, 1958, the Commission's fisheries officer, Mr. H. van Pel, referred to the need for small, seaworthy fishing vessels in the South Pacific. He stressed six factors of real importance:

1. SEAWORTHINESS

The small vessel shown in the drawings should fulfil this requirement in the hands of an experienced crew. However, it must be remembered that all standing and running gear (i.e., halyards, shrouds, blocks, etc.) should be kept in good order. The cutter does not carry very much sail, so that the possibility of a capsizing could occur only in the event of bad seamanship or jammed sheets.

2. ADAPTABILITY

With the addition of the "live-well", this small vessel becomes much more useful as a professional fishing craft. The difficulty of conveying fish from catch to market in a saleable condition throughout the tropics is a real one, but with the intelligent use of the fish well, this problem should be easier. Long-lining, netting, or trochus fishing could readily be carried out from such a vessel provided with dinghies.

3. AUXILIARY MOTIVE POWER

The sails are intended to operate as auxiliary power to a small diesel motor, which should provide a speed of from 5 to 7 knots according to the h.p. of the engine installed. In this regard an air-cooled diesel engine of from 10 to 20 h.p. would prove quite adequate. When considering the propeller required for the engine, it would be wise to remember that when kept vertically behind the deadwood, a two-bladed propeller offers much less resistance to the water than does a three-bladed one.

4. FOOD AND PERSONAL EFFECTS SHOULD BE KEPT DRY

The small coach-house enables this requirement to be met. Space forward of the fish well should also prove useful.

5. PRESERVATION OF THE CATCH

The fish well takes care of this. Incidentally, it should be borne in mind that the inside of the well should be free of any sharp edges or corners that could damage the fish. Actually, the inside of the well should be lined to keep it smooth and easy to clean.

6. REPAIRS AND MAINTENANCE

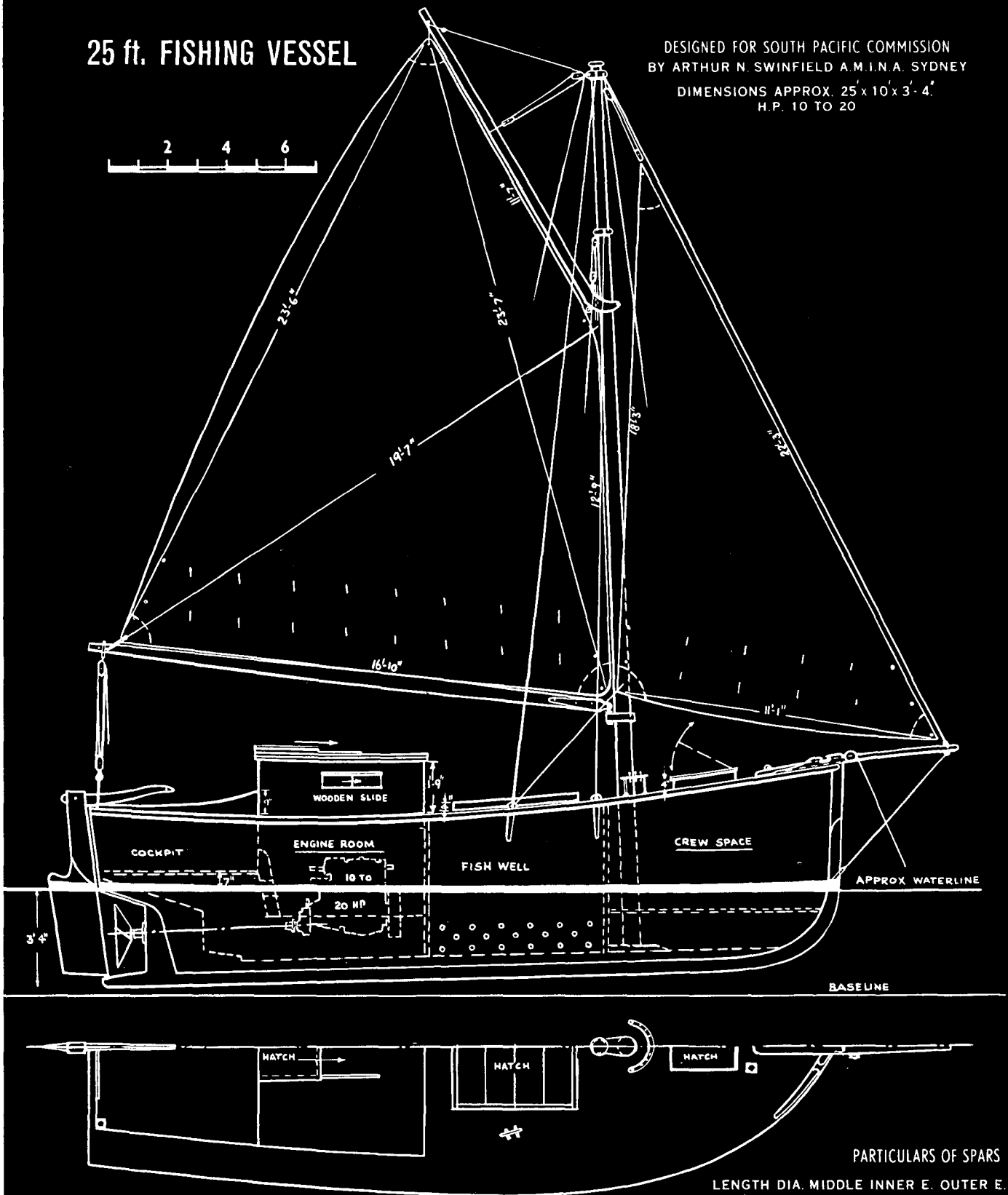
These can be cut to a minimum by making sure that every precaution is taken during the construction of the vessel to prevent dry rot and damage by borer (wood borer, not sea borer.)

The builder should paint *behind* every surface before fitting two or more pieces of timber together. This particularly applies to the ends of planking onto the stem and stern, and behind the bent frames, between the frame and planking. It also applies where the deck beams fit into or on top of the shelf, under the deck planking itself, and on top of the deck beams. The top of the mast (under the truck) and behind every mast band should be well painted. If any metal protective sheathing is fitted in the way of the gaff jaws, the mast area under such sheathing should be doubly painted.

Wood borer attacks sappy timber, so

25 ft. FISHING VESSEL

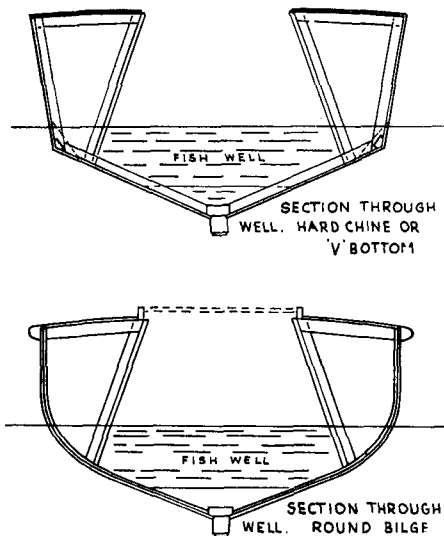
DESIGNED FOR SOUTH PACIFIC COMMISSION
 BY ARTHUR N. SWINFIELD A.M.I.N.A. SYDNEY
 DIMENSIONS APPROX. 25' x 10' x 3'-4"
 H.P. 10 TO 20



PARTICULARS OF SPARS

	LENGTH	DIA.	MIDDLE	INNER E.	OUTER E.
MAST	31'-0"	7"	7"	4"	4"
BOOM	17'-8"	5"	4"	3"	3"
GAFF	12'-0"	4"	3½"	3"	3"

NOTE: RUNNERS OR TOPPING LIFTS ARE NOT SHOWN.
 THEY COULD BE FITTED AS DESIRED BY OWNERS.



every care should be taken to avoid sap in any part of the vessel. However, one precaution worth while taking is to use any of the copper naphthenate preparations (Cuprinol, Dekol, etc.) as a paint or preservative inside the cutter. This helps to minimise the ravages of borer.

Always remember that it is fresh water (rain) that causes dry rot, *not* salt water, so it should not be possible for rain water or hose water to get into any joint in the vessel.

Crosstrees are not shown in the design of the new cutter because it is felt that they are not needed for such a small sail area. Often they are badly installed and cause more trouble than they are worth.

One final point relates to slipping and cleaning, with subsequent painting below the waterline. Never merely "beach" the cutter for scrubbing and painting by running her on to the nearest suitable beach or mud-flat. It is much better to lay down a few crosspieces of tree trunk or something similar—and then to run the keel on top of these. In this way the keel can be cleaned, inspected for marine borer, and then painted.

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in progress for some years most of the incompatibles will have been discovered and described.

Finally, the lowest level, or nurse shade, must be created. Pawpaw, tree cassava or any of the standard legumes will provide fast-growing nurse shade for the very young cocoa. Any which are used must be capable of being easily removed after the cocoa reaches its third year of growth.

I was told that some thinning out of the intermediate shade layer is necessary as the development of the cocoa proceeds, because the saplings continue to grow too, and eventually may cast too much shade. This thinning out is accomplished with the use of a hormone tree poison, sprayed on to the bark, and

Always use good-quality anti-fouling paint, and paint in accordance with the manufacturer's instructions.

Hints On Construction

The lines of this cutter show a very hard bilge, and this will need to be carefully watched when "bending-in" the steam-bent frames. Good bending timber will be needed, with plenty of "wet steam" in the steam box. (Lines are also available for a similar vessel designed with a hard chine and "Vee-bottom".)

The average width of the hull planking should be approximately 4½". The bilge planks could perhaps be reduced to 4" and the sheer plank increased to 5". The garboard (or plank nearest the keel) could be 6" in width.

A few helpful suggestions to the amateur builder may not go amiss:

- (i) Build this vessel under cover on blocks 18" high. Use four blocks anchored firmly in the ground and to each other.
- (ii) Make sure that all hull planking is as seasoned as possible and keep it under cover at all times. Do not stack it plank against plank—use small strips of timber between every plank so that drying air can circulate throughout the stack.
- (iii) Build the vessel with strong moulds—then fit the garboard and sheer planks to them.
- (iv) Then use 2½" x 1" battens on the outside of the moulds (about 12" apart) to form a shape inside of which all steam-bent timbers (or frames) can be bent.
- (v) Then plank up on these steam-bent timbers, taking away the temporary battens as you go.
- (vi) All stringers and clamps must run from the bow to the stern. Do not join them all at the same mould.

encircling the tree to be killed. Any tree so poisoned gradually withers and dies by drying out. The pieces which eventually break away and fall are usually without sufficient weight to damage the underlying cocoa.

I was particularly impressed with this scientific approach to shade control by means of forest trees. At a distance the area gave the effect of being no more than light virgin forest. When a closer examination of the shade pattern which the bush trees created was made, I found that only careful planning and close attention to the principles I have described could have accomplished such perfect results. The shade pattern on the ground on a clear day at noon was fifty per cent. shade and equal sunlight in the classical checkerboard style, the ideal shade for cocoa.

25-FOOT AUXILIARY CUTTER

PLANS AVAILABLE

Complete sets of drawings for the 25-foot auxiliary cutter described in the accompanying article are available from the SOUTH PACIFIC COMMISSION, Box 5254, G.P.O., SYDNEY, AUSTRALIA, price £STG.4/4/- per set, post free by surface mail.

Each set contains five separate plans, as follows:—

Number 1 . . . gives offsets and lines for a round-bilge vessel.

Number 2 . . . Depicts the general arrangement and sail plan.

Number 3 . . . gives details of stern, frames, stem and transom.

Number 4 . . . shows details of the amidships section and of deck framing and rudder.

Number 5 . . . gives offsets and lines for an identical vessel but with "vee" bottomed lines.

- (vii) If possible, install your engine in the boat before all planks are fitted. This allows you actually to see inside and outside the boat when boring the shaft hole.
- (viii) Do not forget to "fair" the deadwood away after the stern-tube flange is fitted and fastened in its position. This allows the water to flow cleanly to the propeller and give your boat more speed.
- (ix) The measurements shown on the lines drawing are taken to the outside of the planking. Be sure to allow for this when making the moulds by deducting the thickness of the planking in every case.

The soil in the Auki demonstration blocks was not above average elsewhere. It is a medium clay loam, with a fairly light crumb structure; there was a good ground cover of natural leaf mulch. The soil underneath the mulch was cool.

Under these conditions the development of the seedlings was even and the growth sturdy and vigorous. Within the age groups represented I have never seen better or more healthy cocoa anywhere.

If the smallholders will continue to follow the techniques demonstrated, and there is some evidence to show that they are doing so, the future of the Solomon Islands cocoa industry will be assured along practical and economic lines.

The efforts and enthusiasm of the extension officers of the Cocoa Division towards this end are worthy of the highest praise.