Chapter II SPECIFICATIONS

A. General Design Specifications

Length Overall	42' 2"
Length on Deck	36' 8"
Length Waterline	30' 10"
Beam	11' 6"
Draft	5' 8"
Displacement	22,500 lbs. (dry)
Ballast (Internal)	7,340 lbs.
D/L (Displacement/Length)	337
SA/D (Sail Area/Displacement) for Cutter	17.3
B/D (Ballast/Displacement)	33%

Sail Area

Cutter 864 square feet (total)

Main	342 sq. ft.
Jib	292 sq. ft
Staysail	230 sq. ft

Rigging Values:.
I = 51.0 (Length from top of mast to deck) – May vary – confirm on your boat.
J = 19.25 (Length from Forestay to mast)
P = 44.0 (Length of Luff of Mainsail)
E = 15.25 (Length of Boom)
Calculated length of forestay based on I and J values = 54.5'
Approx. area of 110% Genoa = 470 Square Feet
Source of Data: DESIGNER'S SAILPLAN – obtained from SailRite Webpage
PHRF Rating of Tayana 37, Cutter Rig = 180

Ketch 786 square feet (total)

Main	263 sq. ft
Jib	209 sq. ft.
Staysail	156 sq. ft.
Mizzen	140 sq. ft.

Standard Engine Depending upon year of construction and original owner's choice:
Perkins 4-108 Diesel or YANMAR 3QM30 Diesel
Fuel Tankage may vary 100 gallons (U.S.)
Water Tankage may vary 100 gallons (U.S.)
Vertical Clearance 55 feet (Verify on your particular vessel)

Non-Dimensional Values:

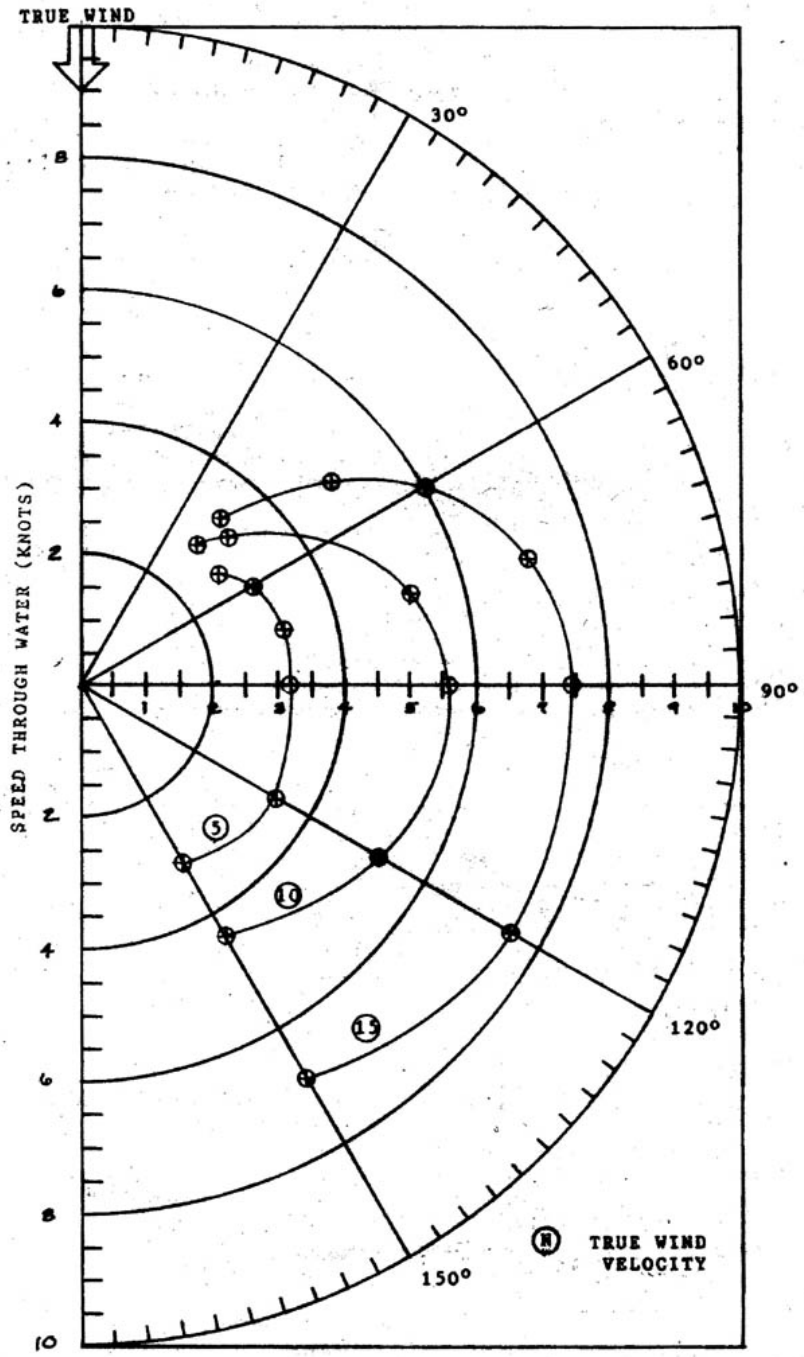
Hull Speed	7.46
Comfort Index	40.78
Capsize Ratio	1.63
Pounds/Inch	1,274

(Pounds per Inch Immersion: The weight required to sink the yacht one inch. If the boat is in fresh water multiply the result by 0.975. If you know the beam at the waterline (BWL) multipy the result by BWL/Beam.)

B. Serial Numbers

Hull Number (Coast Guard)	_____
Engine Serial Number	_____
Hot Water Heater Serial Number	_____
Stove Serial Number	_____
Battery Charger Serial Number	_____
Stereo Serial Number	_____

Polars for Tayana37 Cutter



Courtesy of Ed Potter and Bill & Rockie Truxall

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C. MATERIALS

A few words about materials are called for because of the many questions people ask about the quality of the metals, woods, and plastics used in Far East built yachts.

Resins. The resins used in the construction of TAYANA yachts are polyesters purchased in the United States or Japan. Their quality equals or exceeds that of the resins used in nearly any U.S. or European building yard. They are not of the fire retardant type, however. Yachts built from late 1985 use isophthalic gel coats to resist blistering.

Fiberglass: Fiberglass is generally purchased from the United States although some Japanese and European glass is used. The primary glass structures are made from 1.5 ounce mat and 24 ounce woven roving.

Core materials. Various core materials are used. If a cored hull has been ordered the core material is Airex (TM). This plastic material is light and highly resistant to moisture. It also is an excellent insulator. The decks of TaYang yachts are generally cored with wood blocks cut into two inch squares and formed into core "mats" much as Balsa is used. It is heavier than either Balsa or Airex, but it is cheaper than either and tolerates fastenings better. Where there is to be a heavy installation of some type, such as a winch or windlass, the core material is usually a solid plywood sheet covered on both sides by a heavy fiberglass laminate.

Teak. Teak is obtained from several sources. The most common, at this writing, appears to be Indonesia. The demand for Teak is sufficiently high that properly cured Teak is virtually impossible to find. It has been reported to us that the Teak obtained by TaYang is generally two to three years old when purchased. This Teak is then cut into planks and stored in a drying yard for a period of months. It is dried further in a kiln before it is used on a yacht. Optimally, Teak would be aged for seven to eight years before use and kilns would not be used.

Curing cracks have occasionally been a problem in yachts with solid Teak table or desk tops. Where this has occurred, the tops have been replaced. On the whole, however, the Teak has been surprisingly good and, in applications such as ceiling and decks, it is almost problem free.

* SEE SECTION V. FOR PROPER MAINTENANCE CARE.

Plywood Plywood is the core material used in interior bulkheads, soles, and tops as well as for certain structural applications. TaYang does use marine plywood. The glues used

between the plys is waterproof. There have been few plywood problems when owner maintenance has been reasonable.

Stainless Steel Type 304 stainless steel is most common in yachts whether built in the Far East or elsewhere, and that is what TaYang generally uses. Type 316 stainless steel is the best for yacht application. but it is considerably more expensive than type 304. There is little difference in strength between them, but type 304 can tend to show corrosion which while generally-harmless, is irritating

Bronze Bronze fittings used on TAYANA yachts are made in Taiwan. Tests by an independent laboratory showed that the bronze used is of good marine alloy and grade. The bronze castings are C86800 (55Cu, 37Zn, 3Ni, 2Fe, 3Mn alloy while such items as turnbuckle barrels are C19000 alloy (98-7Cu, 1.1Ni, 0.25P) .

Iron TaYang uses iron in fuel tanks and ballast. This is important because iron is less susceptible to corrosion than is the mild steel that is occasionally used by some builders in place of iron. TaYang does paint the iron with a good quality red lead primer to help extend the life of the tank.

D. CONSTRUCTION

Your TAYANA 37 has been constructed of the finest materials, using the best techniques, and it exceeds the specifications laid down by any of the most accepted standard-setting agencies. The fiberglass schedule for the hull is shown in figure II-1. and Table II.-1. Layup is done in a single mold by hand using polyester resin.

The large female mold is separated longitudinally for cleaning and mold preparation. The gelcoat is sprayed in and the first glass layer is laid up. The mold is then joined and all the remaining layups are done in the assembled mold. While the hull is still in the mold, bulkheads are installed and the hull is allowed to cure. The deck is laid up in much the same way except that a core of wood is used in those deck areas which will generally be required to support loads such as decks and cabin top.

Ballast is made of a single casting of Black Iron. The ballast casting is lowered into the keel cavity and is fully encapsulated to become part of the hull. The deck and hull are joined by one of the strongest methods in the industry. A diagram of the deck to hull joint is shown in figure II-1. Assembling the hull and deck is one of the most critical operations in the yacht's construction. The deck is lifted by a crane above the hull. The joint is prepared with 5200 epoxy compound and the deck is then-set onto the hull. The joint is -then bolted together using stainless steel-bolts on varying centers depending on the curve of the hull at the various points. Once the joining has been accomplished, the joint is fiberglassed as shown in the figure. The result is a single piece, extremely strong hull with a rigidly curved hollow beam in the form of a bulwark running nearly the entire length of the yacht.

Once these critical operations have been finished to the satisfaction of the company engineers, exterior trim is installed and the work on the accommodations is undertaken. A team of the world's finest boat carpenters and finishers takes over the yacht and frames in the interior cabinets and bunks, as shown on the plans. This work is done with extreme care and attention to detail. Framing is actually glassed into the hull and becomes an integral part of it. As a result, the quality and livability of the accommodations is largely a function of how well the framers do their job. Cabinets, doors, drawers, and the like are done by cabinet makers in a specialty shop to the order of the production foremen. TaYang engineers closely supervise every step to insure that dimensions are met and proper installation is made. The result is a yacht whose strength and beauty are second to none and whose accommodations precisely fit the needs of its new owner.

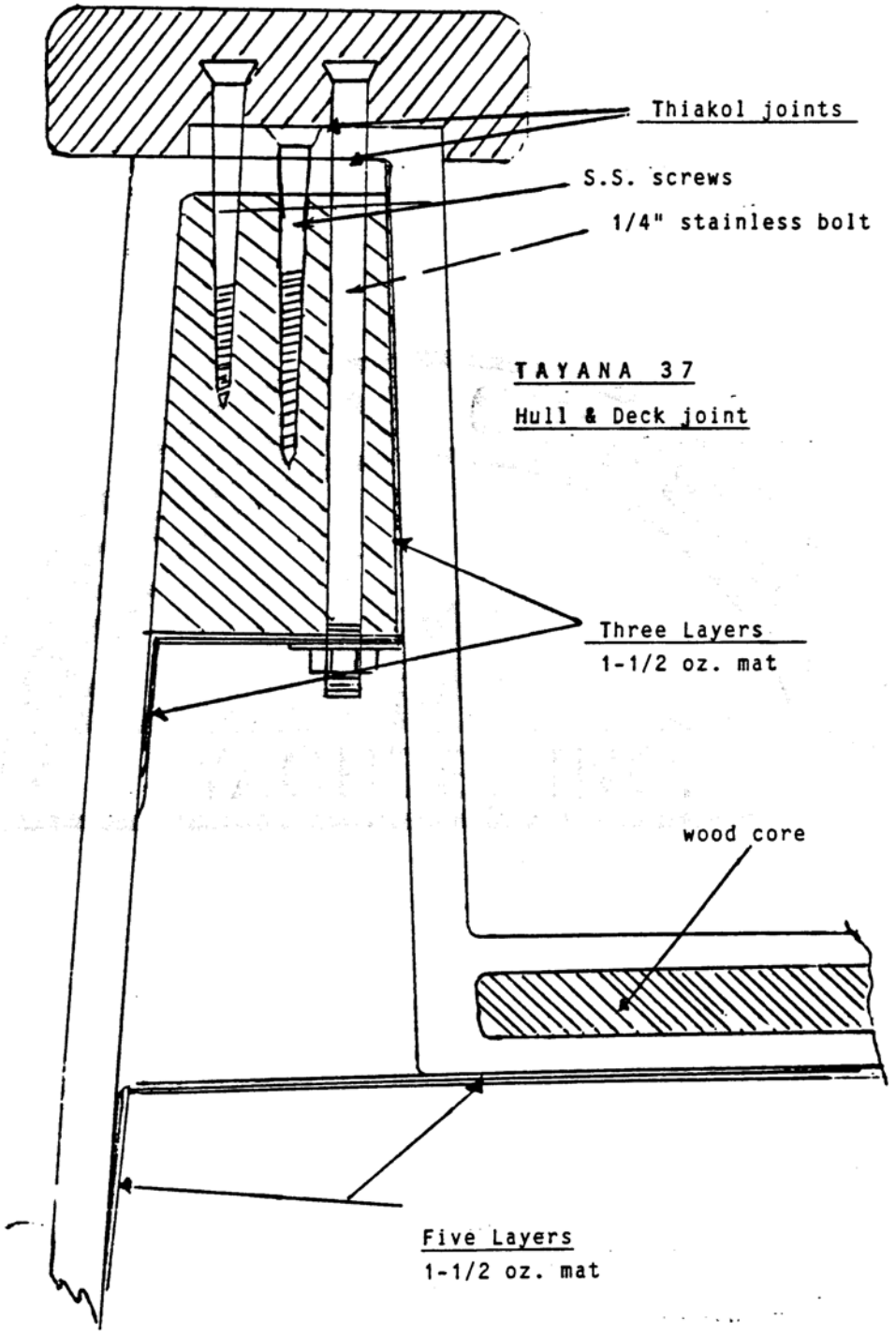
The beautiful spruce spars which come on some TAYANA 37's are made in a special spar shop located in the factory complex. The spruce used is the finest that can be found and truly approaches aircraft quality. It is not unusual to see grains, which are perfectly straight for 20 feet. The spruce planks are carefully scarfed together to make planks of the proper length and glued into the box shape using epoxy. Wires, conduits and reinforcements are constructed into the spars as required. Final shaping and finishing is all done by handy men who have years of experience in building fine wood spars.

If aluminum spars are to be supplied, these are ordered from overseas suppliers- Taiwan has no extrusion capability at this writing. Generally, the suppliers have been ISOMET of France and YACHT SPAR out of New Zealand. ISOMET masts are received already anodized and cannot be painted. YACHT SPARS are painted at the yard and the color can be selected by the buyer. TaYang uses a primer and polyurethane for this. Aluminum spars are also being imported from Japan These are painted by the spar manufacturer.

Standing rigging is assembled at the yard using Japanese stainless steel cable and Taiwanese-made turnbuckles and swage end fittings. A crew at the factory sets up the spars and all of the rigging is fitted to each yacht. This is an important factor in cutting down the number of modifications which might have to be done in the U.S. Similarly, pulpit, lifelines, stanchions, and bowsprit are all installed to insure proper fit.

The final step is packing the yacht for shipment. Spars, rigging, and any projecting assemblies are all disassembled and packed either in the hull, or, in the case of the masts, into special boxes. On the shipping date, the yacht is loaded onto a lowboy and taken to the huge port city of Kaohsiung where it is loaded aboard one of the many container carriers which operate between Taiwan and the United States.

Figure II.-1.


Thiakol joints
S.S. screws
1/4" stainless bolt
TAYANA 37
Hull & Deck joint
Three Layers
1-1/2 oz. mat
wood core
Five Layers
1-1/2 oz. mat

E. IMPORTER'S DOCUMENTS (No information provided in manual)

F. PROCEDURES AND DATA FOR DOCUMENTATION

Documentation must be accomplished with the United States Coast Guard in the United States or with the governing agency in the country where your vessel is to be registered. We suggest you contact the Documentation office nearest you for full details, forms, and instructions.

The following notes and references are made for your information and convenience. They should in no way be misconstrued as complete and detailed instructions:

Procedure

Pleasure Class	Under 20 tons requires a Yacht License. Twenty tons and over requires a certificate of Enrollment and a Yacht License.
Application for - Admeasurement	Requires a Builder's Certificate issued by the builder on the prescribed Coast Guard form. This certificate will be retained by the Coast Guard with certified copies available to the owner.
Admeasurement	The admeasurer uses data in the Builder's Certificate (BC) to compute net tonnage. The following formulas are used for sailboats: Gross Tonnage = 1/2 (LBD/100) Net Tonnage = 0.9 (Gross Tonnage). Where: L = Length B = Breadth D = Depth
Official Number -	After admeasurement files your certificate of tonnage, application is made for an official number. Title and mortgage papers are required.
Additional Forms -	Applications for number. Declaration of Ownership and/or

	Extent of interest. Identification of Owner's or Existing Mortgages. Declaration of No Foreign Interest involved. Declaration of Master of Vessel. Declaration No freight or Commercial Passengers to be Carried on Board. Designated Home Port-Licensing Office. Designated Hailing Port-Berth Marking Certificate
Commercial Class	Contact your U.S. Coast Guard Documentation Office for information- due to the complexity of application.

Volume in Fuel Tank in Bow of older Tayana 37 as a function of height of fuel in tank. As the tank is shaped in the form of a polyhedron, the exact relationship of fuel level to total volume is non-linear and difficult to assess. Based on data provided by Tom Beard in TOG News.