

The PJ/Swan 44

The Swan 44, originally imported as the Palmer Johnson (PJ) 44, was designed by Sparkman and Stephens as a production offshore IOR racer, a slightly smaller sister of the Swan 48 which won the 1972 Newport-Bermuda Race. Between 1972 and late 1975, 76 44s were built, and many were imported into the U.S.

While custom IOR boats frequently made off with the big trophies even in the early days of racing under the rule, a well-designed production racer such as the Swan 44 was still competitive, particularly for long-distance racing. Few of these boats are seriously campaigned today on a regular basis, but the Swan 44 is still a competitive boat under the International Measurement System (IMS).

Although the term "classic" is grossly overused, this boat is the real McCoy. The handsome S&S profile still looks good two decades after it was drawn, and it will look just as good in another 20 years. A deep, heavy hull gives full headroom under a nearly flush deck, and the low, teak-decked bubble deckhouse disappears unobtrusively into the foredeck with no fuss.

Construction

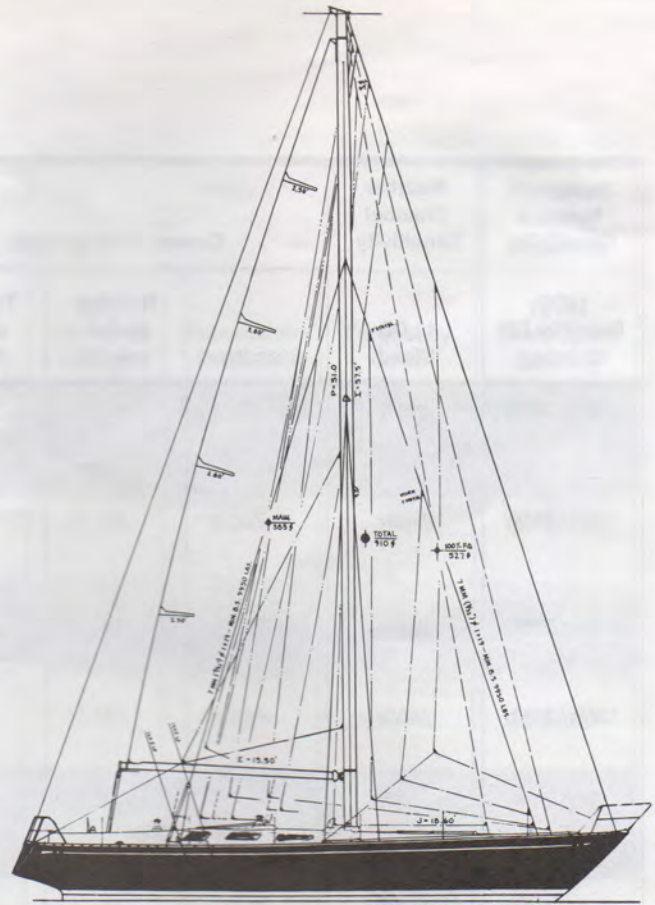
The Swan 44's construction is rugged, but unsophisticated by today's standards. The hull itself is a solid uncured laminate of roving and chopped strand mat, with far more mat than is typical in newer boats.

Mat provides reasonable impact resistance but little stiffness. Hull stiffness is added by three full-length longitudinal stringers. In addition, the furniture is securely bonded to the hull.

Most dark-colored Swan 44 hulls we have examined show significant surface irregularities in the way of stringers, transverse ceiling supports, bulkheads, and bonded furniture. This is strictly a cosmetic concern, but it is a very real one if you wish to paint a light-colored boat a dark color. According to one boatyard owner we talked to, who has considerable experience in repainting older Swans, the typical 44 needs about \$1,500 in additional labor and materials for refairing when a dark hull color is chosen over a light color.

Decks are a fiberglass/balsa sandwich, and a teak overlay is standard. Teak decks on a Swan of this vintage are a decidedly mixed blessing. Pride of ownership—and this goes with the territory if you're going to own a Swan—demands that the teak decks be kept looking good. For most owners, this means cleaning the decks at least annually with powerful chemicals.

If you're buying a Swan 44, an extremely careful survey of the decks is as essential as the hull survey. Replacement of the teak deck covering is an expensive proposition, and could add \$30,000 to the price of the boat.



LOA	44' 1"
LWL	33' 11"
Beam	12' 7"
Draft	7' 5"
Displacement	28,000 lbs
Ballast	12,600 lbs

Swan teak decks are not particularly more trouble-prone than teak decks on other boats. The same caveat applies to any teak-decked boat more than 10 years old. Ironically, the efforts of owners to keep their Swans looking new can cause big problems if enthusiasm is not tempered with a large dose of common sense.

Hull blistering of mid-1970s Swans is about average in frequency. We would be wary of any boat that had spent much of its life in tropical waters, since there is a fairly direct relationship between hull blistering and immersion time.

The hull and deck are bolted together through an anodized aluminum toerail. Inside the boat, the entire hull/deck joint is glassed over—including the fastenings to deck hardware. While this may prevent leakage into the interior, it is a headache when it's time to replace or re-bed deck hardware, and it's time to think about rebedding deck hardware on any boat this age.

Interior

Since the Swan 44 was designed as a racing boat, the interior is not what you would find in a 44-foot cruiser/racer today. The forepeak is given over to sail storage, with two fold-

down pipe berths over built-in sail bins. It would be fairly easy to convert this area to a real sleeping cabin. The sail bins are teak-faced ply that could be modified to conventional berths, and there are port and starboard lockers for clothing.

A large sliding hatch over the forepeak provides fair weather ventilation, and serves as a sail hatch. This hatch will leak if solid water comes aboard, so if the forepeak were converted to a stateroom, it would be worth considering replacing the sliding hatch with a modern, watertight aluminum-framed deck hatch. There is no provision for foul-weather ventilation in the forepeak.

The main cabin is positioned immediately aft of the forepeak, rather than being divided from it by the more conventional head and hanging lockers. This pushes the main living area further forward, into a narrower part of the boat. The result is a main cabin that is smaller than you would normally find in a 44-footer.

Pilot berths outboard of the two settee berths make good sea berths, but further restrict the main cabin. At sea, the two extension transom berths, which are parallel to the centerline of the boat, will also be used for sleeping if you cruise or race with a big crew.

Twin 45-gallon stainless steel water tanks are mounted under the settees port and starboard, keeping the weight of consumables in the right location at the expense of under-seat storage.

A large dropleaf table seats four for dining in comfort, six in a pinch. If it's six for dinner, the two persons seated at the aft end of both settees are somewhat cut off from conversation by the mast, which is stepped through the middle of the table to the keel. Headroom is 6' 2" to 6' 3".

The combination of a varnished teak interior and a flush deck make the main cabin somewhat dark, although a fair amount of light is provided by an overhead Goyot hatch and a small deadlight. There are four cowl vents in Dorades over the area for good ventilation.

The galley, navigation area, and head occupy the beamiest section of the boat. The nav station features a large chart table, a comfortable seat, adequate shelf space for books and electronics, and a big bulkhead for mounting instrument repeaters. There's little you could do to improve on it, although for today's offshore cruising and racing you'd tear out the bookshelves to make way for the plethora of electronic goodies most boats carry.

Opposite the nav station is the galley. While it is smaller than you'd find on a boat of this type today, it was huge for 1972, and is more than adequate, with a big, well-insulated icebox, three-burner propane stove, and a fair amount of storage space. Two seven-inch-deep centerline sinks drain directly overboard.

This section of the boat is light and airy, with good light from the two long fixed ports in the low deckhouse, plus the large sliding companionway hatch.

To starboard, immediately aft of the nav station, is the head compartment, with six-foot headroom. It is accessible either from the main living area or from the aft cabin. The lower section of the head compartment is a fiberglass molding, making it easy to clean, while the upper section is the same teak joinerwork that is found in the rest of the boat.

A Baby Blake watercloset was standard issue. This quaint, expensive piece of British marine plumbing is sworn either by or at, depending on your experience with the beast. We can say that replacement parts cost more than a new modern marine toilet.

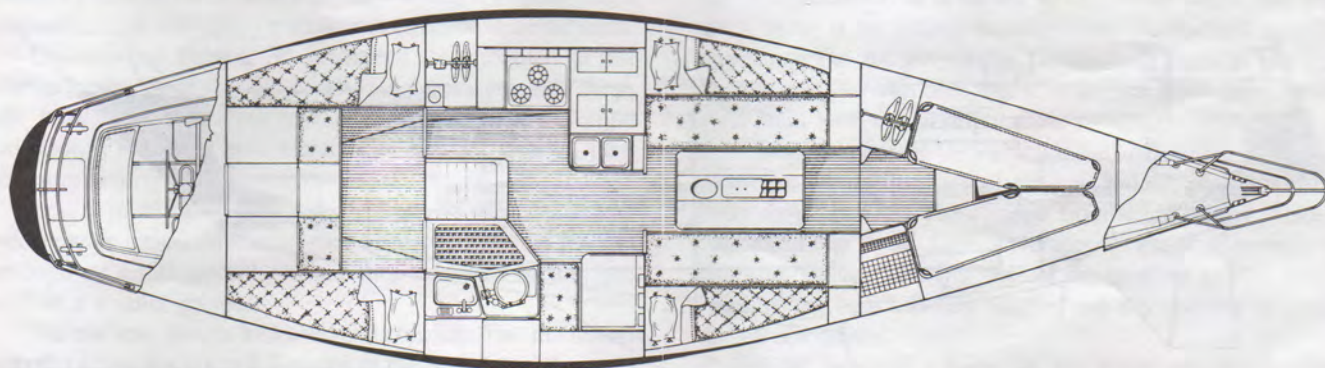
For offshore sailing, this head location is perfect. You can come below cold and wet, strip off your foul weather gear, and rinse down without tracking salt water into the living areas of the boat.

The aft cabin was designed more as a sleeping compartment for senior watchkeepers while racing offshore than for long-term living aboard. Twin quarterberths, each 6' 11" long, make good sea berths. For family cruising, many people would prefer a double berth in the aft cabin, but converting this one is a bit of a problem.

The natural location for a double would be the starboard side, but the door to the head makes this impractical without major modifications. Building a larger berth would require sacrificing one hanging locker, a seat, and access from the aft cabin to the head. For long-term cruising for a couple, we'd do it, although a high level of craftsmanship would be required to keep this from looking like an afterthought.

Batteries are located in a fiberglass box on centerline under an unusual locker below the cockpit. A small door at the aft end of this locker, which can best be described as a dog kennel, and is usually used as a catchall, gives superb access to the steering gear.

There is enough room under the cockpit to mount a belowdecks autopilot, battery charger, and voltage inverter, all



The Swan 44 has plenty of good sea berths, but adding a double for family cruising will be difficult.

of which would be desirable for serious cruising. Since there are no opening hatches in the cockpit giving access to this space, it should remain dry.

Two small hatches overhead, plus a large opening port into the cockpit, provide good light and air to the aft cabin.

In general, interior craftsmanship is excellent, in the Swan tradition. Although the interior tends to be fairly dark and woody, Nautor teak is fairly light in color, which helps avoid the cave-like spaces you often find in a flush-deck boat.

Under Power

All Swan 44s were originally equipped with Perkins 4-108 engines, rated at about 37 horsepower in the normal operating range. The engine is coupled to a Borg-Warner hydraulic reverse-reduction gear, rather than the lightweight mechanical gearbox used today.

This engine is just adequate power for a boat that displaces over 29,000 pounds loaded for sailing. You can expect to cruise at about six knots with good fuel economy—just under one gallon per hour.

Access to the engine for service is reasonable, requiring pivoting up the companionway ladder (it latches to the overhead) and removing the engine box. In the aft cabin, the lower part of the bulkhead removes for servicing the transmission and the back of the engine. You get at the stuffing box by lifting the cabin sole in the aft cabin.

The engine is a tight fit in its well-insulated box. Installing a slightly larger engine when the time comes for replacement might entail rebuilding the box—a minor project.

With the companionway ladder secured to the overhead (it's a head knocker) and the engine box removed, you have sit-down access to the entire engine; there's no excuse for poor maintenance.

A 40-gallon stainless steel fuel tank, giving about a 250-mile range under power, is located below the cabin sole just forward of the companionway. This is below the vertical center of gravity, smack dab in the middle of the boat. The location could hardly be better to minimize the effect of fuel consumption on the boat's trim.

Under Sail

Sailing performance is excellent. The boat is reasonably fast both upwind and downwind. The PHRF rating of about 84 is some 30 seconds per mile faster than cruiser/racers such as the F&C 44, Alden 44, or Little Harbor 44, although it is

At A Glance...

Strengths

- Fast
- Superb construction
- Classic looks
- Traditionally high resale value

Weaknesses

- Awkward deck layout for shorthanded sailing
- Dated interior layout
- Teak decks may be near end of lifespan

Conclusion: S&S design, Nautor construction are in a class of their own. Low price compared to new boat of same quality. Superb sea boat you can take anywhere, but it's a handful for two people to sail.

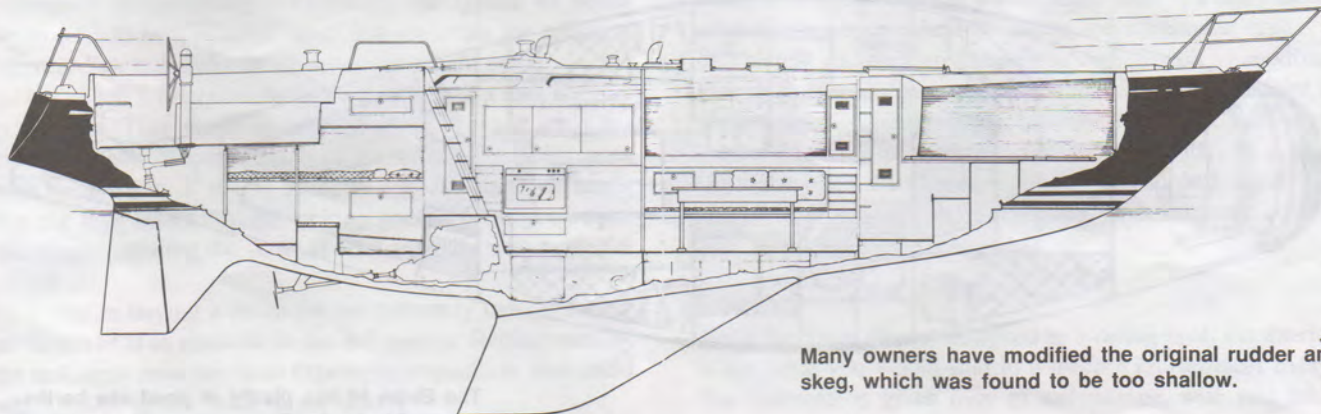
slower than a flat-out modern IMS racer/cruiser. The boat is quite competitive under IMS in anything but very light air, where its heavy displacement is a disadvantage.

Over the years, Swan 44s have won more than their share of races. In the 1990 Swan Atlantic Regatta, the unmodified Swan 44 *Temptress* won her class, beating several newer Frers-designed Swan 46s on both elapsed and corrected time, despite being the oldest boat in the fleet.

With a righting moment of about 1,950 foot pounds, this is a very stiff boat, despite a heavy tree trunk of a mast. The original design called for a keel weighing 10,700 pounds, but boats after hull #64 have additional ballast. Typically, Swan 44s have a range of positive stability of 130°. We recommend a range of 120° or higher for ocean racing or cruising.

Both short rig (mast height about 55 feet above deck) and tall rig (mast height about 57.5 feet) were built. For racing or in areas of lighter winds, the taller rig is more desirable, but this is hardly a make or break choice when buying a used boat.

The boat has a big foretriangle, with a 100-percent area of about 540 square feet for the tall rig. This results in a 150-percent genoa of 800 square feet—a large piece of cloth for a small crew to handle. For shorthanded cruising, we'd recommend a genoa of about 135 percent, set on a roller furler. In winds of 10 knots or more, this smaller sail will give



Many owners have modified the original rudder and skeg, which was found to be too shallow.

comparable performance, and will obviously be much easier to deal with. For racing, the 150-percent genoa is essential for good light-air performance.

The mainsail on the tall rig is about 380 square feet—a comfortable size for a couple to handle, particularly if the boom is modernized.

By today's standards, the rig is old-fashioned. A conservative modern cruiser this size would have a double spreader rig with a mast section of about 6" x 9.5", weighing some six pounds per foot. A contemporary 44-foot IMS racer would have a triple-spreader rig weighing considerably less.

The Swan 44, on the other hand, has a single spreader rig, with a section that is 7" x 10". The big mast section is the result of having a single set of very short spreaders, which allow a tight headsail sheeting angle.

You would have to work very hard to make this mast fall down. Running backstays are standard on the tall rig, but are usually used only when sailing with a storm staysail in very heavy weather.

There is a removable inner forestay, tensioned by a recessed Highfield lever. For offshore cruising, we'd rig it and leave it. Many racers remove the inner forestay entirely. When released, the forestay stows against the mast, wrapping around a fairlead at the base of the mast, held in place by a small tackle on deck. While it's out of the way, you can still trip over the wire when working at the mast.

The deck layout was close to state of the art for racing in its day, but it is not well suited to shorthanded cruising.

There are twin mast-mounted headsail halyard winches, and deck-mounted spinnaker halyard winches. This is a satisfactory arrangement, although on a modern cruiser you'll probably want self-tailers with low-stretch non-wire halyards.

Cross-linked Barient 35 primaries are mounted at the forward corners of the low deckhouse. For racing, this keeps the headsail grinders out of the cockpit with their weight amidships, but it is a poor location for primary winches on a cruising boat.

You're more likely to use the cockpit-mounted Barient 32 secondaries for genoa sheets when cruising. They are just big enough for a 130-percent genoa, a little too small for a bigger sail or a smaller grinder.

The cockpit, too, is awkward for cruising. The mainsheet traveler spans the cockpit forward of the wheel, and the main is trimmed to a forward-facing winch. This arrangement works as long as there are two people in the cockpit, but it's

not so hot for shorthanded sailing.

The cockpit itself is deep and fairly comfortable. There are no cockpit lockers, but the liferaft and propane bottles store under the lift-up helmsman's seat. A lazarette on the after-deck accesses under-cockpit stowage for lines and fenders.

A good cockpit dodger is a must for comfortable cruising, but the Swan 44's midships companionway complicates the issue. The companionway is a sliding hatch with no drop-boards in the deck forward of the aft cabin. A molded break-water allows installation of a big dodger, but it is awkward to crawl under the dodger to get below, and the dodger itself is so far forward that it offers protection only for the very front

of the cockpit. The helmsman is left at the mercy of the elements.

The major alterations on deck required for cruising would be the replacement of the sail-trimming winches with modern self-tailers, preferably going to bigger secondaries if you can fit them. We'd also replace the mainsheet traveler and update the boom (early boats may still have roller-reefing booms).

Steering control is less than perfect. As originally designed, the boat has a small, shallow rudder mounted aft of a big skeg. The rudder was quickly found

to be too small, and it went through a series of conservative changes. First, the rudder chord was lengthened by four inches. Next, the rudder was deepened by six inches while retaining the original skeg, resulting in a quirky rudder profile and slightly improved handling. In November 1973, the rudder and skeg were redesigned, adding some eight inches of depth to the original rudder.

The new and old skeg/rudder combinations are very similar in appearance. It is easiest to determine which one you are looking at by getting drawings from Nautor and actually measuring the rudder. Of the factory-built rudders, the last design is by far the best, but it is unclear how many boats were built with this configuration.

A large percentage of Swan 44s—usually those that have extensive racing histories—have had rudder, skeg, or after-body modifications. These range from slight rudder modifications similar to the factory changes, to major alterations to the stern shape, "padding out" of the quarters to effectively increase the boat's sailing length, and any number of skeg/rudder alterations.

For the buyer of a Swan 44, the major concern is more how well the changes were made, rather than just their effect on performance. As a rule, changes have little positive effect



The S&S lines of the 44 are a modern classic, especially the flush deck and low-profile deckhouse.

on the value of the boat, and if poorly done, can have significant negative impact.

If you're interested in IMS racing, an unmodified early hull would be a good choice, giving you a blank canvas for underwater alteration.

For the more-than-casual racer, naval architect Jim Taylor recommends complete removal of the skeg and rudder, replacing these appendages with a deeper modern elliptical spade rudder having an area equal to about the total of the original skeg and rudder combined. The Swan 44 *Diane* was modified in the manner, and performance was dramatically improved on all points of sail, according to Taylor.

Because the IMS is fairly weak in handicapping the efficiency of appendages, the improved performance came at very little rating expense.

Even fairly extensive modifications such as these are not too difficult due to the massive construction of the boat. You simply don't have to worry too much about imposing loads the hull is unable to handle.

With the original rudder, maneuvering in close quarters—such as rounding marks when racing—requires careful planning ahead. In addition, you must carry an undesirable amount of rudder angle in heavier air, particularly when reaching. For cruising, these are fairly minor inconveniences. For racing against modern competition, they are significant drawbacks.

Conclusions

There are few production boats of this vintage that can be considered turnkey operations for offshore sailing. The Swan 44 is one of them. Nautor construction is as good as it gets for a production boat, and the S&S design is truly timeless.

Swan 44s vary dramatically in condition and price. Boats that have been raced hard may be cosmetically beat, and worn teak decks can be more than a cosmetic concern. Condition rather than age is far more important in determining the value of any Swan 44, although later boats would be more desirable due to slight improvements in the design. We have looked at some boats that are unmodified in layout and equipment, and others that have undergone spectacular up-grading.

There's no denying the appeal of Swans in general, and the 44 in particular. Although as a cruiser/racer it is neither fish nor fowl, the boat is a better compromise than most. With an unmodified deck layout and sail handling equipment, the boat is more than a handful for a couple to sail, and while the basic interior layout is good, there are too many berths in the wrong places for extended shorthanded cruising.

Although this boat may not be anyone's ideal cruiser, it is a boat that you can take offshore with complete peace of mind. You don't have to worry whether the hull is strong enough, the furniture will stay attached, the rudder will stay on, or the rig will stay up. The offshore pedigree is there, and the quality is, too.

In today's depressed market for both new and used sailboats, no boat can be considered a good investment in any real sense. But when you look at the cost of a new boat of this caliber, the Swan 44 starts to look like a real blue chip.

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Prevailer vs. Dynasty

How do gel-cell batteries stack up against one another, and against lead-acid batteries?

by Ron Dwelle

Finally there is competition for the "Prevailer" batteries. Prevailer is an American brand name for the gel batteries produced by Sonnenschein, the German company that invented and originally patented the technology. They have been on the market in this country for four years now. East Penn Mfg. recently bought the rights to manufacture and market them.

A new brand of gel-cell marine batteries is being marketed under the "Dynasty" label. They are made by the Specialty Battery Group of Johnson Controls.

The company produces a variety of batteries—they purchased the Globe-Union battery company in 1978 and now claim to be the largest maker of automotive replacement batteries, and the largest independent supplier to the country's original equipment automotive market. Most familiar to sailors will be the marine and automotive Die-Hard batteries, which Johnson Controls makes for Sears.

In addition to conventional wet-celled lead batteries, Johnson Controls developed and now makes absorbent glass mat (AGM) batteries. These are sealed batteries that are closer in design to wet-celled batteries—usually sold as "no-maintenance" or "maintenance-free" batteries for cars. Rather than a gel, absorbent mats hold a liquid electrolyte, with enough extra liquid to last the usual life of the batteries.

The company also has done quite a bit of leading edge work, such as the magnesium-silver chloride batteries used for sonar equipment in buoys to help track submarines.

(You also may have heard of Johnson Controls in the news lately. They are involved in a Supreme Court case, involving whether or not the company has the right to keep women employees of childbearing age away from hazardous lead substances during the manufacture of batteries.)

The Dynasty Gel Batteries

The Dynasty gel batteries are quite apart from the company's automotive batteries. In fact, the gel batteries have been developed from Johnson Controls' work in non-automotive applications.

About 25 years ago, the company purchased a license for the gel technology from Sonnenschein, and began producing gel-cell batteries, mostly 25 amp-hours and smaller.

These batteries are used in situations where the battery must remain idle or unattended for long periods of time. Typical use is in emergency lighting or where batteries cannot be easily serviced, such as in remote telecommunication or microwave installations. The sealed batteries are also common in environments where the gasses produced by a wet-cell battery during charging would be a problem, such