

SPECIFICATION
FOR THE
SWAN 76
GRP AUXILIARY KETCH

DIMENSIONS:

LENGTH OVERALL	23.26 m	76.31'
LENGTH OF WATERLINE	18.70 m	61.33'
BEAM	5.80 m	19.03'
DRAFT	3.6 m	12.0'
DISPLACEMENT (LIGHT SHIP)	44.8 t	98.700 lbs
DISPLACEMENT (HALF LOAD)	49.8 t	109.700 lbs
BALLAST	10.9 t	24.000 lbs

For optional centerboard, or deckhouse version.
particulars, see last page.

Designer: SPARKMAN & STEPHENS INC.

Builder:

N A U T O R

Oy Wilh. Schauman Ab

PIETARSAARI, FINLAND

TELEPHONE: 67-67001, TELEX: 75-47 nauto sf

Note! These specifications are believed to be correct at the time of printing. For the sake of continuous improvement, the Builder reserves the right to make alterations without notice as considered desirable. No such alterations, however, will be considered retroactive for yachts already delivered or under construction. Draft and displacement stated above vary with load condition.

December 1981

GENERAL CONDITIONS

These specifications are intended to supplement the arrangement drawings. While details may be changed as the result of experience in construction or use of the yachts, the standards of quality and completion will be maintained to furnish a yacht ready for service.

The Owner or his authorized agent will have access to the yacht and everything pertaining to the yacht at all reasonable times. The Builder reserves the right to approve or reject any changes in the details of the yacht and guarantees skilled workmanship, in keeping with the best yacht practice, and in conformity with specifications.

INSURANCE - The Builder will maintain insurance on a yacht contracted for by an Owner, including all items furnished or delivered by Owner, provided that the Owner has delivered such items according to the Builder's Rules. The insurance is appropriate to the value of the Owner's investment until the yacht is delivered to the Owner.

DELIVERY - The yacht is delivered afloat in Pietarsaari harbour, properly rigged and tested.

DAMAGED WORK - The Builder will protect and be responsible for all work until date of delivery and make good any or all damage from whatever cause, to any part of the yacht or its equipment or furnishings.

ACCESS TO COMPARTMENTS - Arrangements for access to and for cleaning out and painting all compartments and all parts of the yacht are provided wherever practical. Floorings are fitted with suitable hatches. Access to the engine, steering gear and other equipment that may require service of any kind will be provided. Care is taken on locating pipes and other parts to avoid blocking of access. If necessary, removable sections are utilized.

TESTS - With the yacht in the water, the engine is run for one hour, checking all controls. Also, the proper function of the fuel system, sea water, fresh water, and electrical installations is checked. The water-tightness of deck and hatches is tested. The mast is stepped and the proper fit of all standing rigging checked.

TRIM - The Builder reserves the right to add internal ballast for trimming purposes.

CERTIFICATION - Every yacht is delivered with Lloyd's Register Hull Construction Certificate.

WARRANTY - If any defective workmanship and/or materials are discovered within six months after delivery, except for the Owner-furnished items or installation of same, or unless due to negligence or other improper act of the Owner or any other user of the vessel, the Builder shall accept responsibility thereof.

The Owner must notify Builder or Builder's authorized representative of any discrepancies during the six month warranty period. Under such circumstances, the Builder shall either procure the repair or authorize such a repair to be made in a way agreed upon in writing between the parties. The Builder shall not be responsible for any proprietary articles which bear the customary guarantee of the manufacturers.

HULL

Scantlings, materials and workmanship throughout are consistent with the construction of a light hull, but without any sacrifice of strength or stiffness.

Construction

The hull is built of glassfibre reinforced polyester by the hand laying-up method. Structural bulkheads are of marine grade water-proof plywood, laminated to hull and deck. Stiffeners are GRP lay-ups over foam cores. Engine beds are of GRP with steel inserts. Special care is taken to assure rigid foundation and proper adhesion to hull.

Finish

All gelcoat colour pigments used are of approved type. Standard topside colour is white, boot top, cove stripe and coaming stripe blue.

Uncoloured gelcoat below waterline.

Flotation reference marks are located at bow and stern.

Bottom primed with antifouling.

Keel

Ballast keel is a lead casting with antimony. Cast-in keel bolts are of stainless steel. Concrete spacer between lead keel and hull.

Rig anchorage

The masts are stepped through the deck onto aluminium mast steps.

Transverse bolt through heel of main mast.

Heavy GRP brackets are laminated to the hull for the stainless steel chain plates.

Tie rod aft of main mast from collar to step.

Two tie rods from main sheet track to bottom structure.

Rudder

Of foam filled GRP with stainless steel stock, supported by three polymer bushed bearings.

Steering gear

Cable steering gear, sheaves provided with guards to prevent jamming.

Aluminium steering quadrant bolted to rudder stock.

44" destroyer type wheel with elkhide cover. Pedestal with roller bearings and friction brake. Emergency tiller stowed in lazarette. with spanner for rudder stock access plate attached.

DECK

Swan deck or deck house version available.

Construction and finish

Deck is made in GRP sandwich construction.

Single laminate with aluminium back-up plates under deck fittings.

Deck surface has painted non-slip finish, standard colour light grey.

Woodwork on deck

Teak hatch frames, hand rails, sheet and halyard cleats.

Laid teak battens on cockpit sole and seats.

Lips each side of sheet tracks.

GRP mouldings on deck

Hood for companionway hatch, Dorade ventilation boxes, lazarette, liferaft and forepeak hatches.

Swan deck version cockpit floor is a separate moulding bolted to deck to facilitate removal of engine.

Aluminium fabrications on deck

Halyard winch horses, hood for sail stowage hatch.

Deck fittings for running rigging

Winch notation:

A = Aluminium, P = push button three speed

Two genoa sheet winches. Lewmar 98 three speed grinder or equal, linked with two pedestals and three clutches

Two spinnaker sheet winches. Lewmar 65 AP or equal

Two running backstay winches, Lewmar 55 AP or equal

Main sheet winch, Lewmar 55 AP or equal

Two Lewmar 30 A or equal for tag line adjustment

Main sheet track with double slider and tag lines

Mizzen sheet fixed on centerline

Two foreguy/preventer/staysail sheet winches, Lewmar 55 AP or equal

Two genoa halyard winches, Lewmar 65 AP or equal

Two spinnaker halyard winches, Lewmar 65 AP or equal

One spinnaker topping lift winch, Lewmar 48 AP or equal

One staysail halyard/topping lift winch, Lewmar 55 AP or equal

Two reefing winches, Lewmar 55 AP or equal

Deck blocks for halyards and slab reefing at main mast

Stainless genoa and staysail sheet tracks

Double screw-in fittings for spinnaker aft guy blocks each side amidships

Screw-in fittings for foreguys and trysail sheets

Two movable fittings with spreader blocks on toe rail each side

Screw-in fitting for running backstays

Other fittings

Two winch handle holders on mizzen mast, six near main mast, four in cockpit. Anodized aluminium toe rail with two pairs of hawse holes amidships. 16" aluminium mooring cleats, 2 on fore deck, 2 amidships, 2 aft. Fairleads at bow and stern.

Pulpit, pushpit and lifeline stanchions 750 mm high, of stainless steel with bases bolted through deck. Spacing conforming to ORC requirements. Isolated and plastic covered lifelines.

Gates in lifelines each side amidships and in pushpit.
Socket for flag pole on pushpit.

Stowage for 3 eight-man liferafts in deck lockers.

Aluminium mast collars.

Stainless steel stemhead fitting with headsail tack hooks and anchor rollers.

Stainless guard/foothold forward of steering pedestal

Hatches and windows

On fore deck one-part hinged GRP hatch to forepeak.

Sliding sail hatch of aluminium, with Lexan panels, lockable from inside. Openable tinted deck hatches and portholes Goiot or equal.

Square deck hatches of two-way type. Main companionway lockable sliding hatch of tinted acryl.

On aft deck two hinged GRP hatches to lazarette.

INTERIOR

General

All joiner work is done in accordance with the best yacht practice, using first-grade materials. Teak with hand rubbed satin finish is used for all visible woodwork.

Floorboards with laid teak veneer, providing access to the bilge.

Topsides where visible lined with teak battens.

Overhead lined with removable panelling.

Tables, bureaus, seats, dressers etc. have rounded corners.

Doors, partitions, and panelling throughout are plywood.

Door sills have stainless steel chafing pieces. Self-engaging latches with bumpers to hold doors in open position. Hanging lockers are equipped with rods and hooks and have bottom drawers where possible,

and their doors are provided with louvres.

Drawers are of the drop sash type.

Wooden companionway ladders with non slip steps.

Fore peak

Gas bottle and general stowage.

Watertight collision bulkhead aft. Drains above waterline.

Crew's quarters

One single and one double cabin. Lower berth in double cabin of folding pipe cot type with fixed seat under.

Sail stowage

Sail bins with canvas front each side, ladder under hatch doubles as bathing ladder. Pipe cot for smaller sails port side.

Washing machine with spin-drier.

Galley

Insulated and sheathed space for stove.

Stainless steel sinks. Two garbage containers.

Top- and front-loaded 380 litre refrigerator, top-loaded 180 litre freezer, both with baskets.

Counter tops Formica or equivalent.
Crockery locker against hull side, cupboard on bulkheads. Drawers for utensils.
Stowage under floorboards.

Navigation area

Provided with shelves, lockers, drawers and space for instruments and radios located on SB side in main cabin.

Main cabin

U-sofa with folding leaf table to port, bar with ice cube maker to starboard. aft of navigation area.

Guest cabins

Hanging lockers and drawers provided. Optionally, the SB forward guest cabin can be arranged as an office. Upper berths of Pullman type in guest cabins.

Heads

Equipped with mirror, towel, soap and paper holder, trash bin, and lockers. Separate shower compartment with white GRP lining for aft cabin and port side guest cabin.

PROPULSION MACHINERY

Main engine

One Mercedes Benz/Wizemann eight cylinder 4-stroke marine diesel, model OM402. continuous rating 147 KW at 37 RPS (200 HP at 2200 RPM), on flexible mountings with Twin Disc hydraulic reverse gear, reduction 2.5:1. Engine space internally sound insulated. Drip tray with discharge pump under engine.

Starting system

The engine and diesel generator have their own starting battery set, 140 Ah, 24V respective 140 Ah, 12V.

Engine controls in cockpit

Engine control on/off

Start and stop buttons

Paralleling button for start and radio batteries.

Single lever control of throttle and gear shift.

Propeller pitch control

Coolant temperature gauge

Oil pressure gauge for engine and reduction gear

Oil temperature gauge for engine and reduction gear.

Tachometer

Warning light and audible alarm for low oil pressure/high coolant or exhaust temperature.

Control light for starting and service battery charging.

Fuel tank gauge.

At main switchboard:

Audible alarm and warning light for low oil pressure/high temperature/
starting battery charging. Engine hour meter.

In engine room: Exhaust temperature gauges
Fuel tank gauge repeater

Propeller shaft

Made of corrosion resistant steel with rigid shaft coupling.
Stuffing box flexibly supported by hose connection to stern tube.
Shaft supported by rubber bearing at bracket and stern tube.
Shaft easily withdrawable. Three-bladed variable pitch propeller with
feathering position. Hydraulic pitch control with mechanical emergency
adjustment.

Engine cooling system

Thermostat-controlled fresh water cooling with heat exchanger.
Sea water intake with strainer. Discharge through exhaust system.

Fuel system

Fuel capacity 2100 litres (550 US gallons) in four tanks with separate
filler line for each tank.

The tanks are connected to the fuel system via one-way valves
preventing cross-flow.

Fuel valve chest with water separator and return line for each tank.
Tanks are vented to cabin trunk.

Exhaust system

Wet system exhausts. For main engine stainless silencers, for diesel
generator rubber silencer, discharge with shut-off cocks both sides
amidships. Silencers provided with drain tap and temperature alarm.

Fire extinguishing

Freon total flooding system for engine and generator space with remote
controls in cockpit.

PLUMBING AND VENTILATION

General

Sea cocks of bronze for all through-hull connections below waterline,
finished flush with outside and located in accessible positions.
Inboard side of sea cocks fitted with nipple long enough to take two
hose clamps. Sea water hoses of reinforced PVC tubing. fresh water
hoses of nylon or copper tubing. All fuel and water tanks are of welded
stainless steel, and provided with baffles, inspection covers, sounding
plug, and vent pipes. Shower sump tanks are of GRP, integral with the
molded floor liner for aft heads. Forward heads have common stainless
shower sump tank.

Fresh water system

Pressurized and heated water.

Water capacity 3800 litres (1000 US gallons) in seven tanks with one
filler line from deck terminating at valve chest with water tank level
gauges.

Tank vent pipes end at galley sink. Dual pump system (pressure and foot pumps). Generator cooling water exchanger and 2 kW resistor element for 65 litre hot water tank. Deck shower amidships SB side. Thermostatic mixing taps for galley sinks, wash basins and showers. Shower rooms have recessed taps. Cold water tap in engine room and connection to washing machine and ice cube maker.

Sea water system

Electrical fire/deck wash pump with connections in fore peak, amidships, and aft, 25 m hose provided.

Sea water spout with foot pump in galley and heads.

Drainage system

Galley sinks drained through sea cock. Wash basins and showers drain to respective sump tank, capacity about 70 l each. Sump tanks may be emptied alternatively by manual or by electrical pump with vacuum stop. Outlet above waterline. Four bilge pumps - 1 electrical 34 l/min, 1 main engine driven 70 l/min, 2 manual 110 l/min, outlets above waterline. The electrical pump has automatic switch.

Toilets

Blake Victory discharging either overboard or to stainless holding tanks with indication at 3/4 and 1/1 level. Holding tanks emptied by electrical pumps. Suction line from deck also provided.

Stove

Four-burner gas stove with oven, gimballed and provided with fiddles. Flame failure device on burners. Gas shut-off cock adjacent to stove. Remote controlled shut-off near gas bottles.

Refrigeration

Dual refrigeration units with hold-over plates, one working on 220 V AC, the other belted from main engine. Ice cube maker working on 220 V AC.

Ventilation

Natural ventilation in cabins with Dorade type inlets.

Exhaust ventilators in heads and in galley.

Hood over galley stove.

Engine room air inlet with water trap in coaming, outlet with blower. The blower starts when engine space temperature exceeds 45°C. Diesel generator space has own thermostat - controlled blower. Separate intake and outlet for diesel generator cooling air. Battery boxes ventilated with blower to outside of boat.

ELECTRICAL

General

Two-wire system 24V DC for lighting, pumps, autopilot, windlass, foghorn blowers, and engine starting. Three-wire 220V AC for refrigeration, water heater, washing machine, and battery charging. For lightning protection headstay, backstay and main shroud chain plates are grounded to ballast keel bolts with heavy cable.

DC service power

One battery set à 750 Ah, 24V, for general service, one separate battery set 375 Ah. 24V for radios and navigational equipment. Change-over switch for service and radio batteries. Batteries located in GRP box. One 24V outlet in each compartment. two in engine room one watertight in cockpit.

AC service power

One 16 kW G & M or equal 220V AC diesel generator with sound shield and autostart, located under main cabin sole. One earthed outlet in each cabin, two in galley and main cabin.

Shore power 220V 50 A with polarity alarm, main switch, and land connection cables. Separate inlet for 110V 50 A, converting to 220V 25 A inside boat.

Lighting arrangements

Interior:

One berth light over each berth, necessary dome lights overhead, fluorescent lights over galley counters and mirrors.

Fore peak and lazarette, 1 watertight bulkhead light.

Engine room, 2 fluorescent bulkhead lights.

Night lights in sail space, galley, main cabin and passage aft.

Outside:

Deck floodlights on main and mizzen masts.

Masthead light.

Navigation lights:

Red and green side lights on pulpit.

White stern light on pushpit.

White bow light on forward side of main mast.

Double red over green lights on main mast.

Main switchboard 24V DC

Located in the navigator's space, and protected by a Perspex door. Switches of trip-free circuit type. One V-meter. with three-way switch for checking service, radio, and starting batteries voltage. Three A-meters, for service, starting, and for radio battery charging control.

Switches for outside and navigation lights.

Bilge water warning light with audible alarm.

Main switchboard 220V AC

Located in the navigator's space and protected by a Perspex door. Switches of trip-free circuit type. One V-meter, one frequency meter, one A-meter.

Diesel generator controls, including oil pressure, coolant temperature, hour and charging A-meters.

Charging system

On the main engine there is a 125 Amp 24 V alternator for charging the service battery. This battery can also be charged from the 220V AC circuit over a 100 Amp battery charger with automatic regulation.

The radio battery set is charged from the 220V AC circuit over a 40 Amp charger with automatic regulation.

The starting battery is charged by a 35A alternator on the main engine.

Diesel generator starting battery is charged by a 35A 12 V alternator on the generator engine.

Cockpit controls:

Puch button for mast flood lights.

Foghorn control.

Instrument lighting switch.

INSTRUMENTS

Compasses

Suunto 6" or equal, one on steering pedestal, one on coachroof.

Clocks

One Quartz clock at chart table.

Miscellaneous

Autopilot driving the steering wheel shaft through sprocket and chain, with control panel in cockpit.

Electrical foghorn with timer.

Clinometer.

RIG

Scantlings to Nautor's standards. Spars of extruded aluminium alloy, anodized.

I = 26,59 m (87,25')

J = 8,44 m (27,7')

P = 24,08 m (79,0')

E = 6,58 m (21,6')

PY = 16,15 m (53,0')

EY = 4,45 m (14,6')

Masts

Of elliptical section, jointed with stainless steel tangs. Tapered and welded mastheads. Main masthead with two spinnaker cranes and four halyard sheaves. Spare halyard messenger provided.

Neoprene mast boots with dacron cover.

Internal wiring, shielded in a PVC tube, secured to mast.

Tapered spreaders of aluminium alloy.

On main mast:

Spinnaker pole track with roller bearing slider on forward face, lift/downhaul tackle with winch Lewmar 44 or equal.

Pins for jockey pole, one each side.

Mainsail halyard winch Lewmar 55 AP or equal.

Separate trysail track.

On mizzen mast:

Mizzen halyard winch Lewmar 42 A or equal.

Mizzen sheet winch Lewmar 48 AP or equal.

Mizzen staysail sheet winch Lewmar 42 A or equal.

Mizzen staysail halyard/reefing winch Lewmar 42 A or equal.

Booms

Of oval section with outhaul winches Lewmar 30 A on main, Lewmar 16 A or equal on mizzen. Main and mizzen boom arranged for slab reefing, four reefing lines on main, two on mizzen boom. Only mizzen boom has lock-off cams for reefing pennants. Main boom topping lift winch Lewmar 16 A or equal. Topping lift led forward internally from boom end.

Poles

Two spinnaker and one jockey pole of round section with appropriate fittings. Spinnaker poles provided with recessed handles.

Standing rigging

Of solid Navtec rod or equivalent. Forestay and runners of stainless steel 1 x 19 wire with swaged terminals.

Rigging screws with toggle at lower end.

Headstay and forestay have toggles at upper and lower end. Shroud rollers on main mast forward lowers and main shrouds.

Hydraulics

For main mast backstay adjustment, Navtec hydraulic cylinders with fail-safe turnbuckles are provided on both parts. For forestay adjustment there is one under-deck cylinder with back-up turnbuckle. Three-function central control panel in cockpit (one spare-function).

Running rigging

Wires 7 x 19 stainless steel, ropes Trevira. Main and mizzen halyard with screw shackle, headsail and spinnaker halyards, topping lifts spinnaker sheets and guys with snap shackle. Internal halyards and topping lifts.

<u>Description</u>	<u>Quantity</u>	<u>Material</u>	<u>Diameter</u>
Main sheet with blocks	1	braid	16 mm (5/8")
Heavy genoa sheets	2	braid	24 mm (1")
Medium genoa sheets	2	braid	20 mm (3/4")
Light genoa sheets	2	braid	16 mm (5/8")
Heavy spinnaker sheets	2	braid	16 mm (5/8")
Light spinnaker sheets	2	braid	12 mm (1/2")
Aft guys	2	braid	24 mm (1")
Foreguys	2	braid	16 mm (5/8")
Mizzen staysail sheet	2	braid	14 mm (9/16")
Staysail sheets	2	braid	16 mm (5/8")
Mizzen sheet with blocks	1	braid	14 mm (9/16")
Main boom topping lift	1	wire	7 mm (9/32")
Tail end with blocks for above	1	braid	12 mm (1/2")
Main boom outhaul	1	wire/braid	6/12 mm (1/4"/1/2")
Mizzen boom topping lift	1	wire	4 mm (5/32")
Tail end with blocks for above	1	braid	10 mm (3/8")
Mizzen boom outhaul	1	wire/braid	5/10 mm (3/16"/3/8")
Mainsail cunningham	1	braid	16 mm (5/8")
Mizzen cunningham	1	braid	12 mm (1/2")
Spinnaker halyards	2	braid	20 mm (3/4")
Spinn.pole lifts	2	braid	14 mm (9/16")
Spinn.gooseneck lift/downhaul	1	braid	12 mm (1/2")
Staysail halyard	1	LSR	16 mm (5/8")
Genoa halyard	2	LSR	20 mm (3/4")
Mainsail halyard	1	LSR	18 mm (11/16")
Mizzen halyard	1	LSR	14 mm (9/16")
Tail end for above	1	braid	12 mm (1/2")
Mizzen staysail halyard	2	braid	14 mm (9/16")
Reefing pennants mainsail	2	braid	16 mm (5/8")
Reefing pennants mizzen	2	braid	12 mm (1/2")

Lace line for reefing	4	braid	5 mm (3/16")
Tail end for running backstays	2	braid	16 mm (5/8")
Vang line	1	braid	16 mm (5/8")
Mizzen boom vang tackle	1	braid	10 mm (3/8")

LSR = low stretch rope

STANDARD EQUIPMENT

Owner's Manual with directions for use and maintenance, drawings and diagrams for main systems, and handbooks for machinery and components.

Anchoring and mooring

Capstan type electric windlass with chain pipe and box. Foot switch near stemhead.

One CQR 63 kg, one Fisherman 41 kg, one Danforth 90 H (41 kg) anchor.

80 m 7/16" High Tensile chain.

2 x 100 m 25 mm plaited nylon anchor line.

Four chain links 7/16".

Four shackles.

Four mooring lines 15 m each, diameter 20 mm

Two mooring lines 25 m each, diameter 20 mm.

Eight airfenders with lines.

One boat hook stowed below.

Anchor light with cable and plug.

Four removable cleat guards.

Sailing gear

Two large snatch blocks.

Four screw-in deck blocks for fore & aft guys and trysail sheet.

Two screw-in blocks and two eyes for running backstays.

Winch handles: four 10" lock-in, six 10" double grip.

Two pairs of heavy roller fairleads with separate stoppers for genoa, one pair with integral stoppers for staysail.

Two bosun's chairs.

Flag pole.

Sprayhood for main entrance.

Dodgers for all hinged deck hatches.

Three tackles with cam cleats for holding forestay and runners in stowed position.

Miscellaneous

One half model of hull.

1 litre gelcoat, hull colour.

1/4 litre gelcoat, boot top colour.

Catalyst for above.

Safety belts for navigator and cook.

Sounding rods for fuel and water tanks.

For all berths except pipe cots canvas leeboards and 10 cm (4") thick.

Dunlopillo mattresses or equal.

Textile covers with Velcro zippers, colour to owner's choice.

Curtains to owner's choice.

Plumbing spare parts.

Engine and generator spare parts. Engine tool kit.

Electrical spare parts.

One wooden cleat of each size.

One shaft zinc anode.

Three 6 kg aluminium gas bottles.

CENTERBOARD VERSION WITH DECK HOUSE

DRAFT BOARD UP	2.4 m	7.8'
DRAFT, BOARD DOWN	4.6 m	15.0'
DISPLACEMENT (LIGHT SHIP)	47.6 t	105.000 lbs
DISPLACEMENT (HALF LOAD)	52.6 t	116.000 lbs
BALLAST	13.5 t	29.800 lbs

Keel

Ballast keel is a lead casting with antimony. Cast-in keel bolts are of stainless steel.

Centerboard

Of GRP with integral stainless framing, manoeuvred by a two-part rope pennant led to a deck winch.

Deck

Reel type centerboard pennant winch.

Tankage for deck house version

Fuel 2300 litres (600 US gallons)

Water 4000 litres (1050 US gallons)