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SCORPIO’s SPECIFICATIONS and EQUIPMENT

1. General

Scorpio is a sailing yacht that is destined to go far; with a supreme combination of relaxed trouble free comfortable sailing. With her ketch rig, her centre-cockpit and her four-cylinder diesel engine, she's a big boat - within the limits that our normal crew of two can still handle together with safety. The amidships steering position halves the size of the boat from a conning point of view: everything is put under the helmsman's surveillance and quick command. The rig is practical and simple with no sail too difficult for one man to handle and yet there's ample area to drive that sweet Sparkman & Stephens hull fast and far. Thanks to the Harken batten traveller system the full batten main sail can normally be raised by a man's arm power alone and is easy to reef in any weather. The Harken headsail furling system makes changing of the headsail's size and shape easy. A Dutchman mainsail handling system guarantees simple dousing. No unnecessary clutter obtrudes on the new teak decks; she's really a craft for sheer enjoyment of the sea, the breeze and the sun.

The accommodation is designed around the concept of a well-appointed living space for two people who from time to time will welcome two, maybe more guests aboard. The master's stateroom aft has one king size and one queen size bed, and the guest area forward has two full size single berths. Both areas are totally self contained with toilet and shower room with pressurized hot and cold water. Abundant light and ventilation and even some views of the outside world are provided by thirteen opening portholes, as well as eight tinted deck hatches. In addition there are three dorade ventilators and two air-inlets with water trap. The hand-rubbed satin-teak furniture for which builder Nautor has become justly renowned obtains throughout, even covering the visible parts of the masts and the rudder shaft extension. All of the teak surfaces were sanded and re-varnished in 2011-12.

The stowage space is usually a problem in a boat that is essentially an alternative home. The aim when planning this ship was, however, not to cram it with every bunk possible and she therefore scores heavily on stowage. Apart from a profusion of lockers, drawers and wardrobes above, below and alongside bunks and settees, there is a vast sail-bin under the port cockpit bench. During the recent renovation we built two large storage boxes on deck, one of each side of the cockpit. The two fuel tanks hold 1.132 litres, the three fresh water tanks 1.080 litres, the water heater 40 litres and the sewage head holding tank 100 litres.

The working zones below deck are huge and carefully designed for optimum functionality. Forward facing, the navigator sits to starboard at a full-sized table, seldom seen in yachts any more, with bookshelves, instrument panels and switchboards readily at hand. Opposite the navigator the cook with a sweep of an arm commands twin stainless steel sinks, refrigerator, freezer, a three burner gimballed Force 10 stove (new in 2008) with oven and all the food and pots-and-pans-and-cutlery she or he will ever need.

2. The Measures

Certification: The yacht was delivered with Lloyd's Register Hull Construction Certificate and Machinery Installation Certificate, which also covers the electrical installation. Based on this documentation Scorpio is entitled to Lloyd's Register Building Certificate, which represents the highest class possible.

Dimensions: LOA 13 m, LWL 9.6 m, Beam 4.2 m, Draft 1.8 m, Displacement 14.8 tons, Ballast 4.1 tons, Sail Area (tacking) 92 m2.

Designer: Sparkman & Stephens

Builder: Nautor, Finland, 1979, hull number 17.

3. The Hull

General. Scantlings, materials and workmanship throughout are consistent with the construction of a light hull, but without any sacrifice of strength or stiffness. Compared to modern designs Scorpio is, however, a heavy ship. She was built at a time when the accountants' desire to cut costs had not yet reached the shop floor of the yacht building industry.

Construction. The hull is built of glass fibre 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. Web floors of GRP are laminated to the hull. The engine bed is of GRP with steel inserts. Special care has been taken to assure rigid foundation and proper adhesion to the hull.

Finish. The hull topside was stripped and re-painted in late 2010 as was the below waterline anti-fouled area. The below waterline area was coated with five coats of West System Epoxy as well as 4 coats of International Interprotect on top of the previous Gelshield treatment, prior to anti-fouling. The topsides were repainted with Alexseal Oyster White and the blue stripes with Aristo Blue.

Keel. The ballast keel is lead casting with antimony and the cast-in keel bolts are of stainless steel.

Rig anchorage. The masts are stepped through the deck onto galvanized mild steel mast steps. The main mast step is provided with an integral lifting lug. There is a transverse bolt through the heel of the main mast. Heavy GRP brackets are laminated to the hull for the stainless steel chain plates.

The Rudder, protected by a skeg, is of foam filled GRP with stainless steel shaft, supported by three polymer-bushed bearings. The shaft extends up through the poop deck and has a fitting for an emergency tiller.

Steering. Elk hide covered destroyer type wheel with friction brake and sprocket, connected via chain and cables to the aluminium steering quadrant, bolted to the rudder shaft. The

sheaves for the cable are provided with guards to prevent jamming. On a yacht like this keeping course when in reverse gear can be tricky, but on Scorpio it is very easy because of the bow thruster, see below.

Wind wane. The Sailomat 3040 wind vane on the transom is independent from the rest of the steering system and can be used also for emergency steering.

4. The Deck

Construction and woodwork. The deck is a GRP sandwich construction to Lloyd's requirements: Single laminate with aluminium backup under all deck fittings. The totally renewed teak deck was laid in Thailand in 2011-12 of battens of Burmese teak covering the whole deck area and cockpit. The thickness of the deck is a minimum of 15mm instead of original 12mm. Hatch frames, hand rails and cockpit foot rests as well as sheet and halyard cleats are made from teak, and all new in 2011-12.

GRP moldings on deck. Hood for companionway hatch, dorade ventilation boxes, hatches to lazzarette stowage on poopdeck, sail locker hatch in cockpit, two part huge forepeak / anchor well. The cockpit floor is removable for providing extra access to main engine.

Deck fittings for running rigging. Two Lewmar 55ST Genoa sheet winches, one Harken 40STC main sheet winch and one Lewmar 34ST head sail furler winch are on the cockpit coaming. On deck is the main sheet track with traveller car, triple block and tackle assembly and tag lines plus a pair of Genoa sheet tracks and another inner pair of jib sheet tracks, each track with traveller cars and tag lines. Deck eyes are provided for the trade-wind sails and for slab reefing. On each side of the poop deck is a Genoa/spinnaker sheet track with double foot block.

Other deck fittings and equipment. Anodized aluminium toe rail with one pair of hawse holes amidships. Fairleads at bow and stern and six sturdy 16" aluminium mooring cleats. Pulpit, push pit and lifeline stanchions of stainless steel, with bases bolted to deck. Height and spacing conform to ORC requirements. All life-lines were replaced with new in November 2010. There are gates at lifelines amidships and in push pit. Aluminium mast collars and, at the bow, a stainless steel fitting with double chain rollers and fittings for locking two heavy CQR-anchors. Stainless steel fitting for heavy Danforth anchor outside lifeline on poop deck, starboard side. Foldable access ladder and gangway-combination of stainless steel integrated in pushpit. Two stainless steel horse shoe buoy holders on poop deck. Anodized aluminium rope coil for 100 m 16mm anchor rode on mizzen mast. Lofrans Falcon T1000 electric windlass with covered foot switch. Chain pipe with cover in stainless steel. Solar panel arrangement on both starboard and port quarters - ajustable 180 degres vertically and 360 horizontal. Stainless steel frames for spray hood and bimini top in cockpit. On the foredeck we also have an outlet for pressurized sea water for washing of the deck and the anchor chain.

There is a stainless steel hoisting crane on the transom for lifting and dousing the outboard which, when not in use, is stored on a holding pad at the push pit rail. The transom is also the location of a stainless steel bracket and launching cradle for the Viking 6 Ocean life raft (new 2012).

Two large teak covered storage boxes, located on each side of the cockpit, were built in 2012. There are two removable/collapsible tables in the cockpit and one removable table for the poop deck (2012).

Hatches and windows. A huge lockable forepeak / anchor well, a sail locker and two huge poop deck lazzarette stowage lockers. Openable tinted Goiot-hatches, two extra large two ways-openable in forward cabin and master cabin, two large in saloon plus smaller ones in the forward head, the guest quarter's vanity space, galley and the chart table. Extra daylight to the interior is provided by two rectangular deck prisms of glass with polished stainless steel frames in the galley and chart area and a round "melon" prism in the saloon ceiling (all 3 new in 2012). The companionway has a lockable (also from the inside) sliding hatch of tinted acrylic and there are three alternative closing arrangements for the entrance: a wooden one-piece board, an acrylic two piece drop board and a mosquito-net (stainless-steel-reinforced) frame. Finally there are twelve openable port holes in the hull sides and one from the chart table area to the cockpit.

5. The Interior

General. All joiner work is in accordance with the best boat building practice, using first grade materials. Teak with hand rubbed satin finish has been used for all visible wood work. Openable floorboards with laid teak veneer provide access to the large bilge with a lot of extra storage space. All visible topsides are laid with teak ribs. Overhead panels are lined with vinyl covers. Tables, bureaus, seats, dressers etc. have rounded corners. The doors have stainless steel chafing pieces and hooks hold the doors in open position. Hanging lockers are equipped with rods and hooks and have bottom drawers where possible, and their doors have louvers. Drawers are of the drop sash type. The masts and the rudder extension are covered by teak. All wooden interior finishes were sanded and re-varnished in 2010-12. The upholstery was also renewed throughout in 2010-11.

The guest quarters have a removable access ladder from fo'c'sle to foredeck. Two shelves against topsides over berths on both sides. Below the berths are the chain locker and the bow thruster. Outside the head between the saloon and the fo'c'sle is a vanity area with four large lockers, one for hangers. These are used for the storage of foul weather gear, linen, cleaning- and painting accessories etc.

The saloon has integrated book shelves, TV-, DVD- and stereo/CD-sets, and integrated stowage for bottles and glasses. Glass trays fit also into the foldable table, with fiddle rails and condiment rack. Generous sized grab rails in the ceiling. There are storage space behind the settee back rests and inside the table and also two large and two smaller lockers, used for storage of staples.

Navstation. Moving towards the stern on the starboard side we next pass the chart table area with the main DC and AC switch panels on the wall towards the engine room and the rest of the instrumentation at the bulkhead facing the navigator and against the topside at his right side. Here are the sailing instruments, communication and entertainment equipment etc. (specifications below). There are lockers and drawer for chart stowage and additional storage space under the navigator's seat and in the two large lockers in the passage to the master's stateroom. Under the floorboards in the passage one can usually find beer cans.

The master's cabin has a king size berth on port side and a queen size berth on starboard, a large hanging locker and four additional lockers plus a lot of storage space inside (under) the berths. There is a two row book shelf on the aft bulkhead, and wide shelves above the berths.

The heads and galley have pressurized as well as foot-operated, hot and cold water with telephone type showers, foot-operated sea water faucets, mirrors and lockers. Both toilet

bowls including polished stainless steel mounting brackets were replaced with new in 2011-12.

The galley has a gimballed three burner stainless steel Force 10 (new 2008) propane stove with oven, built in an insulated and sheeted space. There is an openable hatch above the stove area. Fiddles are provided to keep the kettles in place and a stainless steel grab rail protects the cook. On the opposite side is a deep twin bowl stainless steel sink with a drying cupboard above. The 120 litres fridge and 100 litres freezer with cupboards above completes the functional galley area. Both cool areas are opened from the top and the fridge has a second door on the front side. The countertops were rebuilt with Corian in 2011-12.

The forepeak is provided with a fitting for the second 20 kg Danforth anchor and space for three large (9 kg) propane bottles.

6. The Propulsion

The main engine is a Perkins 4.236M four-cylinder four-stroke marine diesel, rated 77,5 hp at 2.500 RPM, installed in 1987, on flexible mountings with Borg Warner Velvet Drive hydraulic reverse gear, reduction 2,1:1. The engine received a complete professional over-haul in New Zealand in the spring of 2007. In connection with repainting of some of the engine room, the transmission was taken apart and inspected 11/ 2013.

The propeller shaft is made of corrosion resistant Aquamet 22 steel with rigid shaft coupling, both renewed in 2001. The stuffing box is flexibly supported by hose connection to the stern tube. The outboard end of the shaft is supported through a cutlass bearing by a strut. The shaft is offset 7º from the longitudinal centre line to allow easy withdrawal past the rudder skeg. The fixed three-blade, left handed propeller's diameter is 22 inches, with a pitch of 13.96. When we are sailing the shaft is locked by a hydraulic break to prevent turning. The propeller and shaft were last taken out for inspection and service in 2013.

The fuel capacity of 1.132 litres is shared between two separately filled stainless steel tanks with shut off cocks at the tanks and at the connecting valve chest. The entire fuel system is made of metal with short flexible joints where necessary. The fuel line has a Racor 500 series fuel filter/water separator with vacuum gauge and water alarm sensor. There is also an electric fuel pump between the Racor and the primary fuel filter, which makes it easier to bleed the fuel lines whenever necessary. The tanks are connected to the fuel system via one-way valves to prevent cross-flow. There are double water separators on the feed line and both tanks have fuel return lines. The tanks are vented to the cockpit coaming.

The bow thruster is a 7 hp Sidepower, installed in 1997.

7. Plumbing and ventilation

General. The sea cocks for all through-hull connections, except exhaust line, are Blake's of bronze, finished flush with the outside hull (one was replaced with a ball valve skin fitting 11/2010). The inboard side of the sea cocks are fitted with barbs long enough to take two hose clamps. Wooden bungs are attached to all sea cocks. The sea water hoses are made of reinforced PVC tubing and the freshwater hoses of nylon or copper tubing. All fuel and water tanks are of welded stainless steel an provided with baffles, hand hole, sounding plug and vent pipes. The shower sumps are of GRP, integrated with the moulded floor liner.

The fresh water system has heated and pressurized water. In addition to the pressurised automatic system there is a foot operated backup system to the outlets in the heads and the

galley. There are also foot operated sea water faucets in all these areas. The tank capacity is 1.080 litres in three tanks with one filler through a valve chest under the galley floorboards. Hot water is provided by a 40-litre water heater connected to the main engine's heat exchanger. It can be powered also by AC power when shore power is in use, drawing 1.700 W. In addition to the showers in the heads there is a shower in the cockpit. At the bow is also an outlet for connecting a hose to pressurized sea water for deck washing and cleaning of the anchor and chain. This hose is often used for taking sea water showers on deck on hot days on longer passages.

Drainage. The galley sinks are drained trough a sea cock with outlet below the waterline. The wash basins and showers drain to respective sump tank, each with about 80 litres capacity. The sump tanks have dual discharge pumps, manual and electric with vacuum switches, with outlets above the water line. The bilge is emptied by three pumps: one manual in the cockpit and another one below plus one electric with automation. All bilge pump outlets are above the water line. The cockpit has two drains with outlets below the waterline. The freezer and fridge have a drainage tank below the galley floor boards. We are trying to keep the bilge area as dry as possible. Therefore rainwater from the main mast is directed by a hose to a separate drainage jug in the bilge.

Heads. The heads are presently manually operated. The aft head was earlier electrically operated and the wiring has been left in place to make it easy to install an electric toilet with a macerator again, if desired. The capacity of the head holding tank (new 2011), connected to the forward head, is around 100 litres. The head can be emptied either directly over board or into the holding tank, which in turn can be discharged either over board or through a suction line and a connection on deck to pump-out facilities ashore, where available. All hoses were replaced in December 2011. There is a written Waste Management Plan established aboard.

Propane for cooking is provided by two 9 kg bottles located in the drained forepeak locker (there is space for three bottles). Gas flow is controlled by a solenoid controlled magnetic switch situated in the locker and activated by a rocker switch in the galley where there also is an additional mechanical switch. A gas detector is placed in the bilge. We also have a barbecue grill on the stern push pit, powered by propane.

Cooling and heating. The fridge and freezer are cooled by a 0.5 hp compressor, working on the service battery bank either when the main engine is running or when shore power is connected. A 6500 kcal diesel driven Webasto cabin heater with air channels to the saloon, cabins and heads keeps it warm below decks whenever we deviate to higher latitudes. However, the ducts connected to the heater now need to be replaced.

Ventilation is provided by three dorade vents, two in the saloon and one in the fo'c'sle. There are air inlets with water traps to the aft cabin and to the navigation area. An exhaust ventilator with blower is installed above the stove and both heads have two-speed ventilators that work both ways; either blows out or sucks in. There are several additional fans in the saloon and in the cabins, at least one above every berth and sofa. The engine room air inlets with water traps and an outlet with thermostat and/or manually operated blower are in the cockpit coming. The battery box is ventilated outside of the hull by a duct through the main mast.

8. Electrical

General. The yacht has two independent 12 V DC two-wire systems: the service circuit for lighting, instruments, pumps etc. and the engine circuit for the main engine and the bow thruster. There is also a shore power-based independent 230 V AC circuit. There are dual shore power AC inlets, one for 110-120 V 60 Hz and another for 200-245 V 50 Hz. The former transforms to 220 V aboard. Shore power is routed to 230 V outlets in all cabins, battery charger and water heater. We also have a fixed (modified sine wave) 800-1000W inverter (with GFP) for transforming the batteries' 12V to 230 V. In addition we have several different size (modified sine) inverters (from 70W to 300W) for transforming 12V to 120V. This gives us the possibility to use some standard 120V and 230V household appliances aboard without shore power connection. We also have one fixed installed true sine wave 300W inverter for use with sensitive electronics and this is the one that always will be used if the SSB radio or autopilot is in use at the same time, because it causes less interference. Care has been taken to ensure that all electrical cables are heavy enough to prevent excessive voltage loss. For lightning protection the headstay, backstay and main shroud chain plates are grounded to the ballast keel bolts with heavy cable.

Power production and storage. There are two wet cell battery banks aboard, one for service and another for the main engine and the bow thruster. The service battery bank (11/2010) has a capacity of 675 Ah and the starter battery (11/2014) has about 840 cold cranking amps (CCA). These are two separate systems. They are charged in several ways. The main engine charges the service batteries by a 120 Amp and the start battery by a 35 Amp alternator. With shore power connected the service batteries can be charged by an 80 Amp Mastervolt Chargemaster battery charger (11/2010). Then there is an Ampair 100 wind generator (factory over-hauled 11/2011). Last but not least there are two solar panels rated at 2x100 W (new 2/2012) connected to the service bank. All charging devices have voltage regulators but there is also an 'Auto-Mac' device with which the regulator for the engine charge of the service batteries can be by-passed if higher voltages are desired. This may be the case when there is a heavy load on the batteries (usually the fridge compressor) at the same time as they need to be charged or when equalizing them. It is also useful if there would be any problems with the regulator because the service alternator's voltage output may be manually controlled. Several voltage- and Amp-meters etc. are in place to help us to monitor the operations of the electrical systems.

Lighting. Most of the interior lighting was upgraded to LED units in November 2011. One LED berth light over each berth and necessary dome lights overhead, mirror LED-ramps in the heads, LED-ramps and LED spots above the galley counter and LED indirect lighting in the saloon and the master’s cabin. Hanging ceiling lamp, 4 LED ceiling lights and reading LED spotlights in the saloon. Red LED night lights at the floor level in the saloon and in the navigation area and also overhead at chart table help to protect night vision during night passages. Water tight bulkhead lights are installed in the forepeak and the lazzarette and bulkheads lights in sail stove. There are two halogen lights in the engine room. Four spreader lights in main mast and mizzen illuminates the deck area. Finally, there is a courtesy boarding light on the transom illuminating the area of the boarding ladder.

Navlights. In addition to the mandatory navigation lights, i.e. red and green side lights on pulpit, white stern light on pushpit and white "steaming light" on the forward side of the main mast, there is a "red over green" combination set (seldom seen on small pleasure yachts, see Col. Regs. Rule 12c) on the main mast above the spreaders and also a “tricolor” at the main masthead. Using this tricolor aboard Scorpio (which is longer than 12 meters) is really

not in accordance with the international regulations, but we think it is at times useful both for better visibility in high seas and/or to reduce battery consumption (because there is only one bulb instead of three when using the side-stern-light combination). We also carry a handheld 12 V-operated 1.000.000 candlepower spotlight, which gives around 13 times more light than the headlights of a car. Once we avoided to be run over by a freighter by pointing this spotlight right towards the bridge! We also have a powerful rechargeable handheld LED-spotlight. There are anchoring lights at both main and mizzen mastheads.

9. The Instruments

The sailing instrumentation was based on the Raytheon Autohelm ST60 concept until late 2012. All practical speed, depth, wind, navigation, etc information provided by SeaTalk and NMEA protocols aboard is on display or at hand on 10 instruments (incl. the autopilot displays) in both the cockpit and at the chart table. Log and depth information is produced by dual transducers, on both sides of the hull, connected through gravity switches to the control units and displays. In September 2012 we replaced two of the ST60's with new i70 units using the SeaTalk New Generation and NMEA 2000 protocols. At the same time we installed a multifunction (MFD) Raymarine e7 display/plotter (see story about this installation here). The e7 MFD is installed at the navstation below decks, but it has a built in wifi, so with an iPad we can view and control the MFD from the cockpit.

The instrument panels in the cockpit were redesigned, fabricated and installed in November 2011. All engine instruments, switches and buttons were replaced.

There are two independent autopilot systems, one (#1) is built around a Raytheon Type 300 Course Computer connected to a powerful Type 2 Rotary Drive Unit, with an ST 6000 Plus Control Unit, which link seamlessly with the other SeaTalk and SeaTalkNG instruments and by the NMEA-protocols with the other equipment. In addition to this system we, in 2008, installed a second, independent, even more powerful hydraulic linear unit directly installed to the steering quadrant. This system (#2) consists of a Raymarine S3G course computer with built in gyro controlling a Lecomble & Schmitt hydraulic drive via a Raymarine ST 6002 control head. We also have one ST600R remote control unit, which can be connected to either one of the autopilots.

In an effort to minimize the risk for the consequences of a possible shortcut in either autopilot, to the other pilot, the systems have no common wiring, except ground of course (for more information about the installation of the autopilots, look here).

Radar, GPS and AIS. There is a Raytheon R40 X radar. We have eight GPS-data sources: the internal GPS of the e7D multifunction display feeds data to the SeaTalk network and via NMEA to other equipment and instruments (incl. the VHF), two USB-PC/Mac units provide data to PC and Mac laptops, two Garmin 128 (with separate external interchangeable antennas) feed data via NMEA connections where ever it is required (consider them as backups for the e7D and the USB-PC/Mac's). One GPS with external antenna is dedicated to the AIT1000 AIS transceiver and then we have a handheld Magellan Explorer mobile unit. We also have an old Garmin 75 stored away as a reserve. (Actually, in addition we have a ninth GPS in the smart phone mentioned below, which could be used in an emergency)

The communications department starts with the fixed (DSC) ICOM M502 VHF at the navstation with a complete remote unit, Icom MH127, in the cockpit, and two VHF handhelds, the Standard Horizon HX290 and Uniden Atlantis 250 VHF, for short range. Long range traffic MF/HF traffic is managed on the Icom 710M SSB/HAM. This radio is connected

to an Acer Aspire 4736G and /or Acer One 257D computer via a SCS PTC IIe Pactor3 modem for worldwide, anytime, email traffic using Airmail SW and the SailMail server network. In addition to the weather reports obtained by the VHF- and SSB-radios there is an independent Nasa Target Pro Navtex receiver (with its own antenna) for constant automatic retrieval of weather bulletins worldwide. We also have smart-phones for voice and data communication in coastal waters wherever there is an operator with a roaming agreement with Elisa or Tele Finland, our Finnish operators. We usually also purchase local mobile internet (and voice) SIM-cards with prepaid connections if we stay more than a week in any country. The internet SIM cards are used on a ZTF MF60 mobile modem/router, which provides a wireless hotspot for up to up to 6 computers. We also carry a Bullet2 WiFi antenna, connected to a Cisco router, which makes it possible to pick up the signals from local hotspots at relatively long distances, sometimes miles away.

For emergencies we carry an ACR 406 MHz EPIRB.

Electronic navigation: The Captain prefers the old fashioned way of plotting your position on paper charts and as a general rule, this is the way we navigate on longer passages. However, the yacht is equipped with electronic charts covering the whole world. We have three computers which can receive NMEA information from any of the main GPS units, the USB-units, the AIS-unit. The boat's position can be displayed on electronic charts at any time, using the e7D multifunction display and/or one of four different programs, installed on three computers. (In an emergency, or away from the mothership when using the dinghy, the smart phone mentioned above, equipped with navigation charts, could be used for navigation as well.)

Entertainment is provided by the built in Sony AM/FM radio, MP3 CD player with 10 disc exchanger and 5 pairs of stereo speakers in the salon, the cabins and the cockpit as well as the Insignia 24" multisystem (most world standards) LCD TV and a Pioneer DC-383S code free, multi system DVD-player, which plays DVD-records from any region and of any standard (PAL, NTSC etc.). It also plays mp3-music, DivX etc. We also carry a few digital camcorders to record our journey, which we can play back on the TV and edit to movies on the Mac (or PC), usually using Adobe Premiere Pro CS3. The SSB radio will also normally allow reception of any major radio transmissions anywhere, be it BBC, Voice of America, Deutsche Welle, Radio Sweden or Radio Finland. During night watches we sometimes listen to music or voice books on mp3-players. Our camera inventory include a digital Canon 500D SLR (14 megapixels and 18-200mm lens) and a handy compact Sony DSC-HX5 (10 megapixel and 10x optical zoom and full HD video). Our latest gadget is a GoPro Hero3 action video camera, which can be operated on dives down to 30 metres.

The three main computers are two Windows machines and one Mac. The duo processor Acer Aspire 4736G (Windows 7 and XP) is dedicated primarily to general tasks and communications (SSB, internet and web management) and secondarily to navigation while the first priority of the Acer One 257D (Windows 7), requiring less power, is back up for navigation and SSB communication. A Mac Power Book Pro running Os X Lion is equipped with the MacENC navigation program and Navionics charts and has become our main (laptop) navigation equipment (parallel with the Raymarine e7D MFD, also running Navionics). All laptops (ex the Acer One) are also used for writing, maintaining inventories, editing our videos and photos, maintaining our web site, storing music etc. The computer systems include several external hard discs, CD- and DVD-burners and -players. And naturally the computers serve as backups for each other.

10. The Sails

Scorpio's normal costume is made of 105 m2 of sail, comprised of a 135% Genoa on a Harken furling unit, a fully battened mainsail and a mizzen. These three sails were all replaced with new Rolly Tasker sails in 2010-11. In addition we carry a Genoa #2, a working jib and a storm jib to reduce the fore triangle area. Our storm trysail can be raised on a separate track on the main mast. The mainsail has line reefing with a cringle and hook for 3 deep reefs, operated from the base of main mast. We also carry a mizzen stay sail, a windward reacher and an IOR sized 138 m2 spinnaker in a dousing sock. The mainsail runs on Battcars on the mast and Dutchman lines assist in the dousing of it.

11. The Rig

General. The rig is specified by Sparkman & Stephens within ORC dimensions. The masts, spreaders and booms of anodized aluminium are manufactured by Nautor.

The masts have an elliptical cross section with a joint at approximately half length and stainless steel tangs. The mastheads are tapered and welded, the main with four integral halyard sheaves and one external spinnaker crane and the mizzen with one integral halyard sheaf and one external staysail crane. Spare halyard messengers are provided.

The booms are of round section with internal outhaul tackle. Main and mizzen booms are arranged for slab reefing with lock-off cams for reefing pennants. Both have topping lifts of which the mainsail's is combined with the Dutchman sail dousing lines. There are two spinnaker booms in fittings on both sides of fore deck.

Fixed equipment on masts. The main has four halyard, reefing and Cunningham winches (three 2012-new Harkens, two 35 STCs and one 16, plus a reconditioned Lewmar 40ST), a Harken Battcar system for the full batten main, a trysail track, two spinnaker boom bells on track, reef hooks, stainless steel guards for the navigation lights, fixed steps to the spreaders and folding steps (new 2012) between the spreaders and the masthead. The mizzen has three Lewmar 16" winches, brackets for the wind generator and the radar/foghorn and, at the foot, a rope coil with 100 meters of 16 mm rope. There are also folding mast steps up to the wind generator level. Both mastheads are naturally fitted with various antennas and lights and both masts have deck lights on the lower side of the spreaders. There are several large wooden (teak) cleats at the foot of both masts (all replaced in November 2011).

The standing rigging is of 1x19 stainless steel wire with Norseman terminals at the main mast, except for the head stay which has a swaged masthead terminal and a Sta-lock lower terminal integrated in the Harken Unit 2 furler's drum. All stays, shrouds and fittings of the main mast (including terminals) were renewed in 2002 and inspected (terminals opened) in January 2012. The head stay was replaced by a new one in November 2011. All shrouds and stays of the mizzen were replaced in 2011-12, with wires ending in swaged terminals. The turnbuckles are of bronze with toggles at the lower ends. The head stay has toggles at both ends. The split main mast backstay has adjustment screws with handles on both parts. There are shroud rollers of aluminium on the forward and aft lowers and the cap shrouds of the main.

The running rigging has 7x19 stainless steel wire. The yacht has spinnaker and mizzen staysail equipment, Battcar and Dutchman main sail- and Harken head sail handling systems and extra fittings at deck for the trade wind sails.

Survey. A full rig survey was done in 2012 in connection with a complete rig service.

12. Anchoring and mooring

60 and 45 lbs CQR-anchors are ready for immediate use in their own fittings at the stem head, either one of them connects to 65 meters of 12 mm calibrated chain operated by a Lofrans Falcon T 1000 electric windlass, which has a rope drum in addition to the chain gypsy. Next to the bow rollers we have an outlet for the pressure deck wash hose to be able to wash the chain when retrieving it from muddy bottoms. We also have two 45 lbs Danforth anchors, one stowed in the forepeak and the other ready for use in its own fitting at poop deck. There is one 5 meters and one 8 metres length of chain for use with anchor rode. At the foot of the mizzen is a rope coil, which can be operated by a winch handle, provided with 100 metres of 16 mm rope, ready for immediate use. In addition there are one extra 100 meters of braided 16 mm line, two 40 meters 16 mm lines, four 20 meters 16 mm lines with thimbles, two 20 mm thimble mooring lines with stainless steel suspenders and chain and PVC tubing for chafe protection, ten fenders, three stainless steel buoy hooks, and two boat hooks. In addition to the anchor light at the main masthead there is a second anchor light at the mizzen masthead. Finally there are two extra 12V, mobile anchor lights to be used at deck level in crowded harbours - one is LED, the other halogen.

13. Miscellaneous

Hypalon double floor 3,1m RIB dinghy (February 2012) with 15 hp Suzuki 4 stroke outboard (2006)
Kayak
Viking 6-person ocean life raft
Safety equipment exceeding RORC / IOR requirements
Flare gun
Binoculars
Sextant
Barometers (2)
Clocks on bulk heads (2, local time)
Chronograph at chart table (UTC)
Signal flags
Sailrite Ultrafeed LSZ-1 sailmaker's sewing machine
Sunbrella and other fabrics on rolls and various fasteners
Mosquito nets w. Velcro for hatches
Miner’s lamp
Spray hood and bimini top (new 2012)
Integral (removable) side cloths for the bimini, for colder climates (2012)
Combined poop deck awning and rain catchment (2012, canvas)
Various sunshields and spray shields of canvas (2012)
Snorkelling gear for 4 persons
SCUBA gear, complete for two persons,
Spear gun and Hawaiian sling,
Lee cloths for all bunks
Canvas covers (closable by zippers) for deck hatches (2012).
Canvas covers for deck hatches for use during storage
Winch covers (2012)
Courtesy flags
Various wires and locks for locking of dinghies, equipment etc.

Propane grill on push pit,
Safety straps for cook and navigator
Two fresh water hoses, one on coil
Deck wash hoses (for washing the anchor chain, on ocean passages also used as a shower)
Two inlet shore power cables (120 + 230 V)
Extension shore power cables
Several transformers for converting electricity up/down 12V/120V/230V
Several inverters for producing 120V/230V out of 12V
Several connectors and adapters for water hoses, electricity and propane
Spare parts for most systems aboard
Huge collection of tools
Huge collection of screws, bolts, electrical, plumbing etc. accessories
Charts and pilot books
Admiralty publications, lists of radio signals etc.
General as well as specific hand books on weather, engines, sailing, repair etc
Around 100 owner's manuals of the boat's equipment
Guides concerning flora and fauna
Travel guides
A good collection of music CDs (and several thousand mp3 songs)
Several hundred video films on DVD
Logbooks, guest book, address book
Scorpio's Ocean Passage Manual (describing mechanical and electrical systems)
Scorpio's Inventory Manual (storage locator)
List of the serial numbers of electronic equipment (needs updating)
Registry documents, insurance policy, letters of recommendation, survey reports etc.
Laminated copies of important documents incl. passports (notary certified)
Etc