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London Show preview & guide

Choosing a bluewater cruiser

New Knox-Johnston column



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CONSTRUCTION

UNDER THE SKIN: AMEL

SUPER MARAMU

How many boats do you know which come complete with individually gimballed soup bowls, non-slip coat hangers, a flower vase, a shopping trolley, a bottle of olive oil to keep the head valves lubricated and a case of Evian water to tide you over that maiden sail? Quite. Not many, we suspect.

This extraordinary inventory, which includes everything from a bow thruster to a sophisticated chart plotter, provides a clue to Amel's aim: to sell the complete cruising yacht in the 53ft Super Maramu and the smaller Santorin.

Comfort, safety, speed and ease of handling are the main objectives, achieved by using innovative design. It is a formula which has worked. Recession has barely affected Amel, who find themselves high on the list of probables when customers come looking for a serious bluewater ocean cruising yacht. The boats might not have instant aesthetic appeal, but innovation quickly sways the waverers, once they step aboard.

This is combined with a rigid no options policy – Amel simply won't entertain requests for customisation. 'Please try our system first and if you still don't

Laying up the hull with the split mould already joined on the centreline



Behind a plain exterior lies great innovation aboard this ketch

This French cruising yacht bristles with clever ideas which work. David Glenn and Malcolm White report from La Rochelle, where she is built

like it, change it', is the line they take. Almost always, owners convert to the Amel way of thinking.

The inspiration behind the La Rochelle-based boatbuilder is 80-year-old Captain Henri Amel, now totally blind and

The forward bulkhead can be sealed to make it completely watertight



living in Hyères, where the company has a sales and service base.

It is his phenomenally fertile mind which has been responsible for spawning the unique design details found only aboard an Amel yacht and which has encouraged others to think inventively.

Today, the company's founder has little to do with the everyday running of the building yard, but the 140 employees still regard Captain Henri as their mentor. Significantly, in 1978, he gave the majority of the company shares to the

workers, allocating them according to length of service rather than seniority.

Company loyalty remains strong, staff turnover remarkably low and quality of craftsmanship extremely high. According to Jacques Carteau, Henri Amel's co-designer and right-hand man for the past 20 years, and Jean-Jacques Lemonnier, marketing director, the yard has reached an optimum size.

"We have been the same for 20 years and we don't intend to grow," said Jacques Carteau.

Just the two classes are currently in build; about 24 of each will be built annually. Familiar classes from the past include the Mango, Sharki and Maramu,

CONTINUED ON PAGE 62

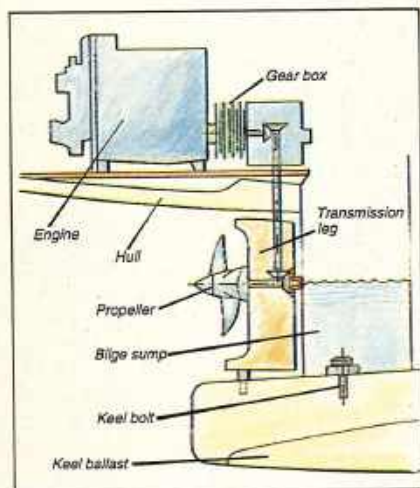
Aboard the Maramu the large galley is exceptionally well equipped





*Amel have their own private moorings
at the enormous Mûlines marina in La
Rochelle, western France*

TRANSMISSION SYSTEM



Amel developed this special transmission system to cut down noise



Custom-built transmission leg being bench-tested before installation



Transmission leg in position with propeller fitted and the wing keel ready for finishing

CONSTRUCTION

but these have been discontinued. Part of the success of the company is put down to limiting production to one or two boats which allows the workforce to develop intimate knowledge of the product.

DECK CONSTRUCTION

Only too well aware of the adage that every day spent at sea requires two in port for maintenance (at least, aboard a wooden boat), Amel insist that there should be no wood at all on deck.

From an aesthetic point of view, this is disappointing, but the company have tried to compensate by creating an imitation laid-teak deck. Wood grain is built into the mould, together with a recess which forms the caulking line between each 'plank'. In addition to the time and money saved in maintenance, a vast amount of weight is saved.

Moulding starts with gelcoating the caulking lines by hand, using a roller and an artist's paintbrush, a laborious process which is followed by the application of a lighter brown gelcoat to form the lookalike teak. The end result is remarkably realistic and the effectiveness of the non-slip surface excellent.

Those conducting a love affair with teak decks would, I suspect, groan with displeasure – until they checked on the price of re-caulking or replacing the real thing.

HULL CONSTRUCTION

The hull is a solid laminate formed in a split mould. Gelcoat with an ivory pigmentation (no choice of colour!) is sprayed onto both halves before a series of Satin 71 bidirectional woven rovings are laid in the mould.

The lengths of roving, about 1.5m wide, are laid longitudinally and transversely in alternate layers and well overlapped to provide strength. Because the keel stub is also designed to hold a 220 gal (1,000lt) water tank, it is necessarily deep, so the two halves of the hull mould don't come together until the laminators have applied several layers of woven roving in this area.

The same goes for the substantial rudder skeg, also an integral part of the hull moulding.

There is no inner liner in this boat and few separate mouldings. Plywood bulkheads, specially veneered for Amel with a magnificently grained African mahogany, are bonded directly to the hull. Hull panel stiffness is achieved by bonding all internal joiner work to the hull and to the bulkheads where possible. In fact, internal woodwork is all bonded together to form a type of cellular construction – very rigid.

There are seven areas within the yacht which can be made genuinely watertight including the engineroom, forepeak and after cabin. Bulkhead doors are fitted with substantial rubber seals and can be closed with heavy latches.

In the forecabin we noted that the anchor locker drain is taken aft, plumbed to the shower tray drain and then taken to one of only three underwater skins fittings. A cock, fitted to the pipe run abaft the watertight bulkhead, can be turned off in the event of a leak, ensuring complete watertight integrity in the forward compartment.

HULL TO DECK

To prevent the empty hull shell from twisting out of true, the deck is put into place before the hull is released from



Left, well designed head with deep sink and cave lockers. Above, electric bow thruster retracted in a forepeak locker

HULL TO DECK

its mould. Both deck edge and hull sheer-line are complex shapes, forming the hull to deck joint and a rubbing strake (see diagram, right).

The deck is lowered onto the shelf and once in position is 'bandaged' to the hull from within, using unidirectional roving. This method entails no through bolting and therefore reduces the chances of leaking.

All moulding is completed in an atmospherically controlled workshop. Once the deck is on and the keel fitted, the yacht is transported to the final assembly shop where joiner work is completed and equipment fitted.

FIT-OUT

Each boat is lowered into a pit so that the workforce can step aboard at ground level. Kits of wooden parts, which have been cut, built and varnished, are made up while the hull is being moulded and should be ready for installation as soon as the empty shell arrives. The same goes for wiring, plumbing and metal fabrication most of which is done on site at Amel.

But perhaps the most interesting element of fit-out is the extent to which equipment is tested before it is installed. Every washing machine, dishwasher, freezer unit, hair drier, heater and windlass – all standard on a Super Maramu – is dismantled, in some cases modified and then run for extended periods before being deemed ready for use. There is a whole department devoted to monitoring long term testing of equipment.

Amel appreciate that one of the most tedious problems for an owner on a long-distance cruise is for something like the freezer to fail in the middle of

the Pacific where help and parts are thousands of miles away.

This philosophy is carried into the engine room, which is huge for a yacht of this size. One can walk round the main engine, and access to other equipment like the generator, batteries, water maker and filters is excellent.

SPARS AND RIGGING

Amel pride themselves in their spar-making shop which, like other parts of the yard, is immaculately tidy and well organised. It is fully carpeted so that if an item such as a painted spreader happened to fall to the floor, the chances of it chipping are slim.

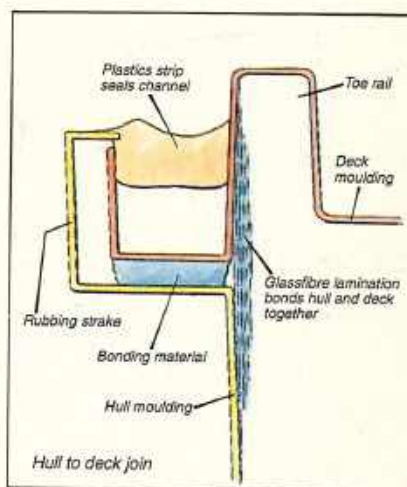
The company used to buy in their masts, but delays threatened their 100 per cent record of never being late on delivery, so they now build masts on site. Extrusions are supplied by mast manufacturers Alusuisse.

Most fittings are then welded to the tubes which are given five coats of polyurethane paint before being dressed. Both main and mizzen are specially designed to accept electric motors which drive the in-mast furling gear and clew outhauls. The genoa furling gear is fitted with a similar motor.

Why, we asked, are there no hydraulics aboard? After all, one central pump could drive all these mechanisms. "Service," was the simple reply. All electric motors are Bosch, either 300W or 1,000W, which are available worldwide and very easy to replace.

An owner cruising long distances could easily carry a couple of spares, whereas expertise in the hydraulics field is likely to be hard to find in remote parts of the world.

CONTINUED OVERLEAF



Amel's hull to deck joint which incorporates a moulded rubbing strake and an internal 'bandage' to complete the bond



A complete Santorin leaves the fitting out bays for the systems testing pool



Left, the engine room is large and well insulated. Above, there is space for 500 bottles in the Super Maramu's bilge!



Jean-Jacques Lemonnier demonstrates how easily the instruments can be accessed

CONSTRUCTION

There has been no attempt to hide the motors away purely for aesthetic reasons. They are well protected by plastic and metal pods, but are, at the same time, easy to get at.

KEEL AND TRANSMISSION

Amel state that a cruising yacht must have a quiet engine. On first acquaintance, the lengths they have gone to in order to reduce noise levels might not be immediately apparent. The Super Maramu's predecessor had a conventional shaft which exited the hull just forward of the rudder. The close proximity of the prop created a lot of noise in the aft cabin, so to reduce this a new transmission system was designed.

Instead of driving a traditional shaft, the horizontally mounted 80hp Perkins transmits forward through a series of shafts and bevel boxes to the prop which is mounted on a custom-designed leg, positioned on the trailing edge of the keel (see drawing, page 62).

The after end of the cast iron wing keel is used as a platform to which the leg is bolted. The principle is similar to that of a saildrive unit, but in this case the equipment is more substantial.

While this arrangement certainly protects the prop and reduces noise levels, there are drawbacks. For instance, the thrust from the propeller is a long way from the rudder, making handling under power potentially difficult.

Amel have anticipated that one and installed a bow thruster as standard. Normally, a boat of this size would have a tube built into the forefoot of the hull within which the thruster blades would be mounted. Amel deduced that as the prop would be relatively close to the waterline it would be inefficient, so they designed a retractable system which, when deployed, extends well below the bottom of the boat.

They also designed a larger prop than was available with standard thrusters, the result being that the bows of the yacht can be driven with ease against a strong side wind. When the thruster is withdrawn, a shaped blanking piece, fitted below the prop, leaves the hull surface flush.

The piece of glassfibre waste from the cut-out for the bow thruster is not discarded. It becomes a sort of identification tag for the yacht and is stored safely with all the laminate and atmospheric information recorded at the time of build. In the event of any problems with the moulding at a later date, all this information can be accessed.



The running pole is rigged on the side deck and the sheet rove through the end fitting before being swung forward



The Super Maramu in full flight with both running sails poled out. A new system will allow both sails to be furled simultaneously

The iron keel ballast is bolted onto the stub or fin using 18 22mm bolts; the nuts are only accessible via the watertank which is formed by the stub.

There is no attempt to fair the transmission leg with the keel, so the surfaces are uneven and hydrodynamically inefficient. However, as there is little need for that extra per cent or two of performance in a cruising boat like this, Amel have no qualms about it.

INNOVATION

Spinnakers are anathema to hassle-free sailing as far as Amel are concerned. They will not sell a boat with spinnaker gear and will eagerly demonstrate that their alternative for running sails is simple and effective.

Two short poles locate in simple cups on either side of the mast wall, with their outboard ends connected to a metal brace fitted to the shrouds about five feet above deck level (see picture, above).

The longer running poles are then connected to the same fitting and swung aft so that they can be rigged with the outboard end on deck (see picture, left). Apart from hoisting the second

sail – the Ballooner – no-one needs to go forward of the mast.

Each pole is controlled by a foreguy, afterguy, topping lift and downhaul. With sheets running through the pole ends, the genoa and Ballooner are simply trimmed conventionally.

Although the Ballooner can be hoisted in the free groove on the forestay foil, it cannot be furled and unfurled with the genoa because its halyard simply wraps round the forestay and quickly becomes fouled. However, Amel have almost perfected a type of halyard lock which enables the sail to be hoisted and locked into a fitting on the existing bearing at the top of the foil, so that both sails can be furled simultaneously.

Mainsail and mizzen are both set on electrically powered furling gears which appeared to be fast and powerful in operation. Other excellent on-deck features include sheet cars adjusted by a line driver, an enormous lazarette big enough to take a dinghy, outboard and a lot more, and a side deck locker designed to take a liferaft and safety gear. While this at first looked like a neat solution to the raft stowage problem, we soon realised that access might not be easy with the port side deck awash.

A fitting on the mizzen boom allows the outboard to be lifted from the lazarette, swung outboard and lowered into the dinghy entirely without manhandling. The Zodiac can also be lifted aboard by using a halyard on the mizzen. By hauling the boat over the transom, it can be dropped straight into the lazarette and deflated.

Below decks there were some excellent features like the compartmentalised fruit and vegetable coolbox stowages; a foolproof water tank gauge consisting of a rod, buoyant at the lower end, which floats on the surface of the water and indicates the tank status alongside a graticule; solid mahogany leeboards and a truly vast amount of stowage space.

CONCLUSION

Everything about the Amel yard gave one an impression of efficiency, high quality and attention to detail. You could have eaten a meal off the moulding shop floor and there was a sense of dedication among the staff which suggested they wanted to build the best.

But the real attraction of the Amel marque is the company's understanding of the needs of people who go cruising. The Super Maramu, in particular, is bristling with good ideas – ideas which work.