

# A BETTER BOAT FOR YOUR MONEY

## PART 2 NEW FOR OLD

In the second part of his description of a major refit of a second-hand Hallberg-Rassy 46, Leon Schulz gets down to the nitty-gritty of the work done and how much it all cost

Purchase price: €180,000

### THE JOB LIST

#### Refurbishing

- Varnishing wood
- Repairing GRP
- Painting stern
- Painting engine room and deck storage
- Overhaul of heaters
- Overhaul of fridge/freezers
- Overhaul of main engine

#### Updating

- New bimini, hardtop extension
- New teak deck
- New oven
- New windows/hatches
- New pumps and pipes
- New sails and rig
- New lifelines

#### Upgrading

- New upgraded batteries, electrics & chargers/inverter
- New, bigger diesel generator
- Two larger alternators
- Navigation and communications
- Two new autopilots with three drive units
- New onboard computer system with wi-fi
- New upgraded safety system (GMDS & SOLAS)
- New upgraded firefighting equipment
- Electric in-mast and genoa furling
- Stainless steel anchor chain and larger anchor
- Flexible coupling for shaft and rope cutter
- New high-end stereo and speakers
- Corian and tiles in galley
- Electric toilets and new holding tanks
- High capacity watermaker
- Washing machine
- Cockpit steam sauna
- New through-hulls
- Complete treatment of hull below waterline
- Complying with MGN280 Cat 1 by MCA (Maritime & Coastguard Agency)

Transport to Sweden: €20,000

Refit: €320,000

Total cost: €520,000

**F**inally, it is time to show my refitted Hallberg-Rassy 46 to the public at the Hanseboot Ancora Boat Show in Germany. It has been nine months of hard work. I feel a sense of joy and pride. I look at my boat and think: is this yacht really 15 years old? She looks as if she was launched in 2013. *Regina Laska* even smells like new. Everything has been taken out, replaced, cleaned, varnished or reworked.

A complete refit project is complex. For each item you have to decide whether to refurbish, update or upgrade. But first you have to find the right place to do the work. This is where the second part of my story starts.

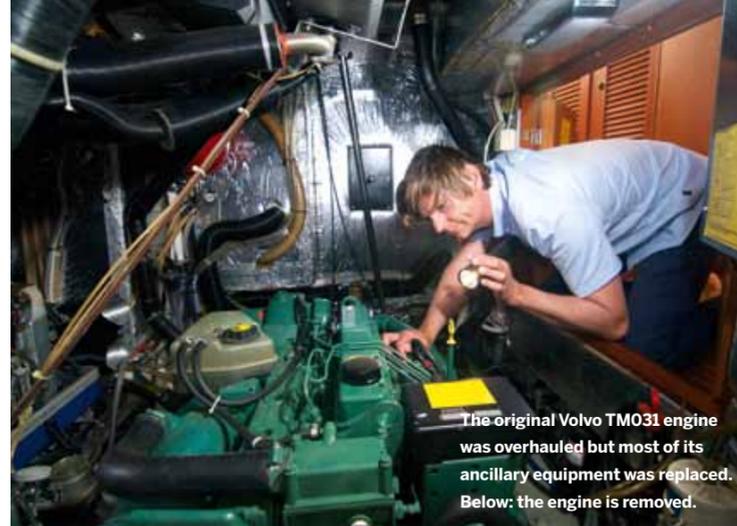
I decided to form a temporary yard to do the refit. It was possible because many high-profile boatyards are either closing down, going bankrupt or downsizing, but the skills still remain. I knew there was a concentration of skilled boatbuilders on the island of Orust in Sweden. That involved a costly truck transport of the second-hand HR46 I had bought in Italy. I did not dare sail the boat in the state she was in, but it turned out the €20,000 transport costs were well worth it.

I appointed Carl Adams manager of the refit. Carl is a very experienced British boatbuilder. He has built boats all his life in many corners of the world, from South Africa to Iceland. When he finally settled in Sweden, he worked for various yards, including Hallberg-Rassy, where he stayed for just under two decades before he starting Adams Boatcare.

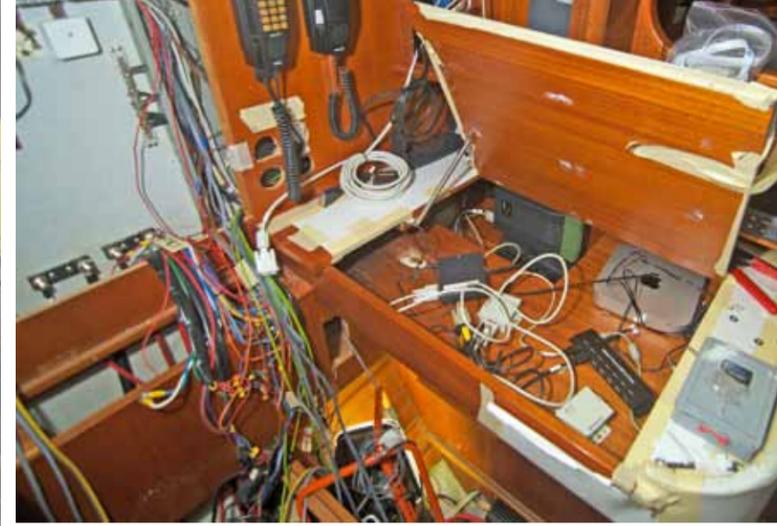


New vacuum-bonded teak decks were laid. With no screws the deck can be sanded more which will extend its life.

Photos: L. Schulz



The original Volvo TM031 engine was overhauled but most of its ancillary equipment was replaced. Below: the engine is removed.



▲ Top: the navigation area was completely re-equipped with new systems. Above: everything was re-varnished. Left: she needed a new anchor windlass.

## Vacuum-glued teak has a further advantage in that it can be sanded more often and so has a longer life

### Decks and rigging

One of the biggest jobs was laying the new teak deck. Ellös Teakservice are specialists in laying vacuum-glued teak, which means that no screws are used. This keeps the deck 100 per cent watertight.

Traditional screwed teak is 12mm thick and after only 4mm of sanding the screws become visible. By exchanging and lowering each screw you can sand down another millimetre but this last effort is time-consuming and hard work.

Vacuum-glued teak is no more than 9mm thick. You not only save weight, but because of the lack of screws and a different design of the teak ribbons, you can sand down as much as 7mm. In other words, vacuum-glued teak has a considerably longer life span than screwed teak. Teak decks don't come cheap (€35,000), but it really does give the boat a facelift.

Other big costs were the new rigging – we replaced all standing and running rigging – and installation of electric in-mast and electric headsail furling (€32,000), new electronics, of which more shortly, (€54,000) and electrics (€19,000).

### Machinery overhauled

The next big job was to refurbish the engine room. When the engineers looked into the old

engine room of *Regina Laska* they said: "Take it all out and to start all over again." This would not only give ample room to work in, but with all the filters, pumps and other serviceable parts placed close to the entrance it makes maintenance and servicing easier. This would become much more efficient (ie less expensive) in the end, they promised, and look much neater than trying to fix up the old engine room.

The main engine was in good working order and, as it had relatively few engine hours we decided to keep the Volvo TMD31, but to replace everything else, including fitting a new diesel generator, a flexible coupling and replacing filters, pumps and pipes.

The Volvo was lifted out, washed, serviced and prepared for the reinstallation. A new SpeedSeal Life impeller kit was fitted, it acquired new rubber feet, a new silencer, new filters, Centaflex anti-vibration coupling, a new shaft seal, an external extra zinc anode and a rope cutter. Welding was needed to prepare it for the new 24V/110A High Output Alternator (HOA) by WhisperPower, allowing for full charging while running.

### Electrical system

The new electrical system is a very well thought-through system by WhisperPower, which allows us to use 230V appliances

continuously. There are 230V plugs in each cabin, allowing the comforts of home. The efficiency of the combined charger and inverter enables conversion from 24V to 230V with virtually no power loss. Computers, stereo, chargers and other household equipment can be used whether batteries, generator or shore power is supplying the necessary power.

A separate 12V system with its own batteries acts as an emergency power supply for critical equipment such as communications, GPS and emergency lighting as well as for a high-capacity bilge pump.

The inverter can deliver 3.5kW continuously, meaning that the watermaker and other 230V equipment can run on both the 7.5kW Westerbeke generator or the 24V/580Ah AGM batteries via the inverter.

### New through-hulls

This wasn't the most glamorous or visible aspect of the refit, but was an essential as far as safety was concerned. As a traditional yachtsman, I wanted a trustworthy, long-lasting alloy metal. I decided to upgrade to bronze instead of brass. It might not be necessary to change any through-hulls on your boat, but I didn't want to take the risk on mine, so I changed them all.

As we could see on *Regina Laska*, brass can lead to problems. In one case we were able to kick off one of the through-hulls with our bare feet

because it had become so weak – the yacht had been lying in the Med for years, possibly with a continuous shore power connection.

Strangely enough, many of the other through-hulls still had a fair amount of material left. But how can you tell which will last and which will not? On any boat with through-hulls older than 15-20 years, I think it is worth checking these and preferably changing them.

### Fixing the hull

After many years in the sun and salty water, a hull needs to be refurbished, but it is equally important to look after the underwater parts.

Another issue that becomes visible after a dozen or so years is that the stern starts to fade compared with the rest of the hull and varies a little in colour. We decided to spray the stern. Last, but not least, the blue stripes along the waterline on *Regina Laska* needed to be repainted.

We started the hull project by polishing the sides. It took 30 hours to do each side – excluding the stern.

When these boats are built, Hallberg-Rassy gives each new boat two coats of epoxy before adding antifouling. This is good, and better than many other brands, but not good enough if you

### THE AUTHOR

**Leon Schulz and his wife Karolina resigned from their jobs as engineers, sold their house and took a sabbatical cruising year to the Caribbean with their children, nine and 11. Afterwards Leon wrote *The Missing Centimetre*, a book about their voyage. He gives presentations at boat shows around Europe and, as well as consulting on refits, he is an RYA Ocean Yachtmaster instructor and was the RYA chief instructor at Malta Sailing Academy. He does advanced sail training courses onboard his HR46 *Regina Laska*. [www.reginasailing.com](http://www.reginasailing.com)**



## TOTAL REFIT



◀ Left: the condition of the stern was particularly poor which entailed removing and refitting everything including backstay chainplates. Above: it took 60 hours to re-polish the topsides. Right: re-varnishing and new lighting completely changed the ambience of the HR46's saloon.



## Opinions on the epoxy vary but manufacturers urge that at least six layers are needed for watertightness

ask paint manufacturers. The opinions on epoxy vary, but paint manufacturers urge that to stop the boat gaining weight when in the water, it needs at least six layers of epoxy to become 100 per cent watertight.

Since I wanted to follow the paint manufacturers' specifications, I checked whether the hull had become dry enough after over two years on the hard, and it was fine.

First, to remove old antifouling you can either sand by hand, sandblast the hull or iceblast it. I was interested in testing the latter. The advantage with iceblasting is first there is no sand. Second, ice is much softer and removes only the antifouling, but leaves the epoxy and the gelcoat untouched. Or at least this was what we thought. We got two surprises.

The first was that the gelcoat of *Regina Laska* appeared not to have had not been sanded or otherwise treated before adding the epoxy when she was originally built. Therefore, the gelcoat was still so smooth that large patches of epoxy came loose during the iceblasting.

With *Regina Laska* back in the shed, surprise number two was discovered. We found air had been trapped behind a very thin layer of gelcoat. You could clearly see the patches.

The iceblasting penetrated the thin layer of gelcoat, uncovering the air bubbles and left thousands of tiny holes in the hull. These holes needed to be drilled out and then filled.

### The interior

The interior of *Regina Laska* received special attention. New curtains, new upholstery, new sprung mattresses and a new carpet were fitted, but there were also some joiner work challenges. The forward head had to be modified in order to make space for a washing machine. Plexiglas doors were installed in the showers.

Shelves in the navigation area had to be lowered in order to accommodate the Furuno equipment. All windows and hatches were replaced and space was created for the new electrical installation. An extra challenge was to replace the old and scratched worktop in the galley with Corian. It is impressive what can be changed and modified when you are working with wood.

The most noticeable facelift was when the experienced boatbuilders of Orust Lack went over all the varnish, from the hard-top and the teak in the cockpit to all bulkheads, tables and cupboards down below. Holes and blemishes were filled and scratches removed almost completely.

### Smart lighting

Special attention was given to the lighting. Lighting technology has taken a huge leap forward. Not long ago, a refit of lighting mainly consisted of replacing halogen bulbs with LED and the only gain was to reduce power consumption.

Today it is possible to create a feeling of space and a cosy atmosphere by using LED tapes. For around €5,000 plus installation, I changed the experience of living on board.

At night red lights in the ceiling are enhanced by low location lighting, which spreads light onto the floors, guiding the crew through the boat.

If the cook wants to have full light on the galley worktop while the crew in other parts of the saloon want low lighting, LED-spots are activated over the galley and the saloon table to allow the light to reflect onto the mahogany table.

### Navigation system

So that my charter guests can experience the latest navigation systems, we installed a new Furuno Navnet TZtouch system. It can be controlled by and wirelessly viewed on iPads and iPhones and the touchscreen is easy to use.

The new systems illustrate the huge leap forward in modern navigation techniques. It is really interesting to compare the two types of navigation, classic and state-of-the-art systems I believe you need to master both.

### The sauna

The great thing about a refit is that nothing is impossible. The craziest thing I chose was the steam sauna. A built-in compact 320V, 3kW steam generator in the engine room leads the steam into the tent via an outlet in the cockpit. The boat sauna had its world premier when *Regina Laska* was exhibited at the Hanseboot Ancora Boat Show. Who knows, it could well become a popular add-on for boat owners sailing in cold climates!



## BUDGET COSTS AND VALUE – THE CONUNDRUM

The Hallberg-Rassy 40 we owned previously was well-maintained and well-equipped so we were able to sell her for €300,000. At that time, I felt I could add another €100,000-150,000 to get a bigger boat maintained to a similar standard and with similar equipment, so before I had even purchased *Regina Laska*, I had a budget of €400,000-450,000.

I was therefore looking for second-hand HR46s and found boats in the Med for very much lower prices than in northern Europe. I had never thought of buying a boat that had lain in the sun and water for so long, but thanks to the encouragement and support of my Swedish boatbuilders, I bought a neglected 15-year-old HR46 for €180,000 in Italy.

Bearing my initial budget in mind, I thought I now had loads of money to spend. I started by buying a fine (and expensive) stereo and speakers for the boat – you need to start somewhere, don't you?

I soon discovered that better budget control would be necessary in order to prevent the price skyrocketing!

We ended up with a more realistic budget of €480,000. With an initial price of €200,000 including the trucking to Sweden, this would mean a refit of €280,000 – a considerable amount of money.

I wanted to prioritise my investments. My main goal was to cruise in safety, comfort and style. This is easier said than done. The phrase "while we're at it, why don't we..." was heard a great deal. So, yes, the boat did become more expensive than originally anticipated.

The final price was €520,000, which is a lot considering the initial second-hand cost of the boat. But I got the boat I wanted and when I compare the price of a similarly equipped new boat of the same type at over €900,000, she is good value.

*Regina Laska* clearly cost me more than her current market value. Also, if I had bought a brand new boat, the value would have decreased by £200,000 in the first year.

