A Proper Little Ship

The Rugged *Astra*

BY DAG PIKE

We are all used to passagemakers where the focus is on the interior rather than the performance. Even from the outside these boats have to look the part, and the focus on performance in adverse conditions tends to take second place. With *Astra*, it is the reverse. For this passagemaker the focus is entirely on its seagoing abilities and reliability. In fact, I would put this 80-footer in the category of the ultimate passagemaker–a vessel capable of taking on the world's toughest oceans and coming out on top.

It is not surprising, really, when you look at *Astra*'s heritage. She was built back in 1994 for the Swedish Lifeboat Society as an all-weather lifeboat complete with an icebreaking hull. She has to be one of the toughest boats of her size ever built, and what's more, she looks the part. Sitting alongside in the marina when I first saw her, *Astra* looked the perfect match for rough seas with her traditional sheer lines and purposeful superstructure. No frills here, just a proper functional boat built for one of the toughest jobs in the world.

Having served the Swedish Lifeboat Society, Astra *is capable of taking on tough challenges.*

Design Characteristics

Let's look first at her hull design because for many that is the key to rough-weather performance. *Astra* sits in the water rather than on it, and with a nine-foot draft she certainly takes up her share of the ocean. She is built of steel with plating close to ½-inch thick and close framing to match. There is not a flat piece of steel in the plating, and the designer appears to have thrown away the straightedge when working on her hull. It has been shaped in beautiful curves to match the requirements of rough-sea performance rather than to simplify construction. Immediately under the waterline at the bow the keel slopes away in icebreaker style so that she can ride up over ice and use her weight to break it up. I would guess that she could cope with ice up to two feet thick and possibly even thicker ice. Bilge keels were added on at the turn of the bilge to help reduce the rolling of this round-bilge hull.

The current owner bought *Astra* when she became redundant as a lifeboat, with the aim of converting her into a cruising yacht that could go anywhere in the world. The conversion has hardly changed the outside appearance of the boat; the main difference is the addition of a Portuguese bridge around the sides and front of the pilothouse. This was designed to blend in with the original and it does nearly seamlessly–you can hardly believe that this feature was part of a refit. On the inside, changes were only made to improve the equipment and facilities for enhanced cruising comfort.

With virtually no changes to the outside, *Astra* retains her ability to self-right in the event of a capsize. And with its original aluminum superstructure intact and a large Palfinger hydraulic crane on the afterdeck, a powerful 15-ton towing winch, and a salvage pump all left onboard, she is well equipped to aid another vessel in distress if called upon.

Software

As a lifeboat *Astra* was painted in bright colors to be easily identified at sea. But for her role as a cruising yacht *Astra* has been painted a low-profile gray. This way she looks less like a yacht and more like a working ship, which will be beneficial in some of the remote areas she is capable of reaching that may be more sensitive in terms of security. As an extra precaution, and to deter possible criminals, there are blue flashing lights on the mast.

The current owner was tempted to strip out the accommodations and start again with something more luxurious, but in the end he decided to retain the basic two-bunk cabins down below as these bunks, with their leeboards, would be more suitable for long-distance cruising. There are five of these cabins built in around a lower saloon that has been reduced in size so that a bathroom could be added. This head complements the one on the main deck, which is at the forward end of the main saloon. The owner/captain has his own single-berth cabin located abaft the main saloon, and this is all pretty basic "lifeboat-on-duty" accommodation. That said, there is considerable scope to expand the basic, functional layout.

Top: Astra*'s mechanicals are the definition of workmanlike. Everything is arranged in logical runs and orderly fashion.* **Right:** *The outfitting is simple and no-frills, easy to maintain without feeling cold or sterile.*

Like a proper workboat, Astra*'s safety equipment, helm visibility, and redundancies are top-notch for running a ship in all kinds of weather, day in and day out.*

Hardware

Nearly half of the hull is taken up with the machinery space. Here, the main engine is a massive 1,350 hp Mitsubishi diesel that is a pure mechanical unit with no electronics and no electric start. Compressed-air starting is used to keep things simple and reliable, and the engine turns at just 1060 rpm to produce the reliable "thump, thump" noise that is so much more reassuring when you are at sea than the high-speed buzz of modern engines.

The engine drives a Berg controllable-pitch propeller so it runs at a constant speed when the boat is being maneuvered. There is a reduction gearbox of 3:1 so the six-foot diameter propeller is turning at around 300 rpm. All maneuvering is done with the propeller pitch control, both ahead and astern. Just in case the main engine should fail, there is an auxiliary drive connected to the propeller shaft that is powered by a hydraulic motor with power coming from the Volvo Penta–powered auxiliary generator. Also driven from the propeller shaft is a shaft generator that provides the main power supply when underway.

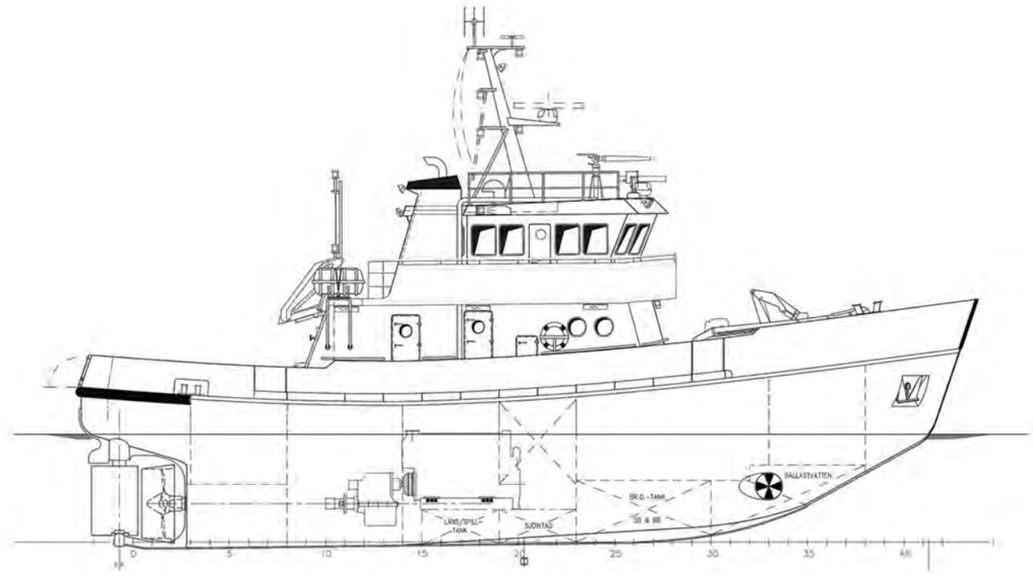
This is a real belt-and-braces installation that is designed for reliability above all else. The engine room looks a bit like mechanical spaghetti with all the pipework from the complex hydraulic systems, and most of it is stainless steel.

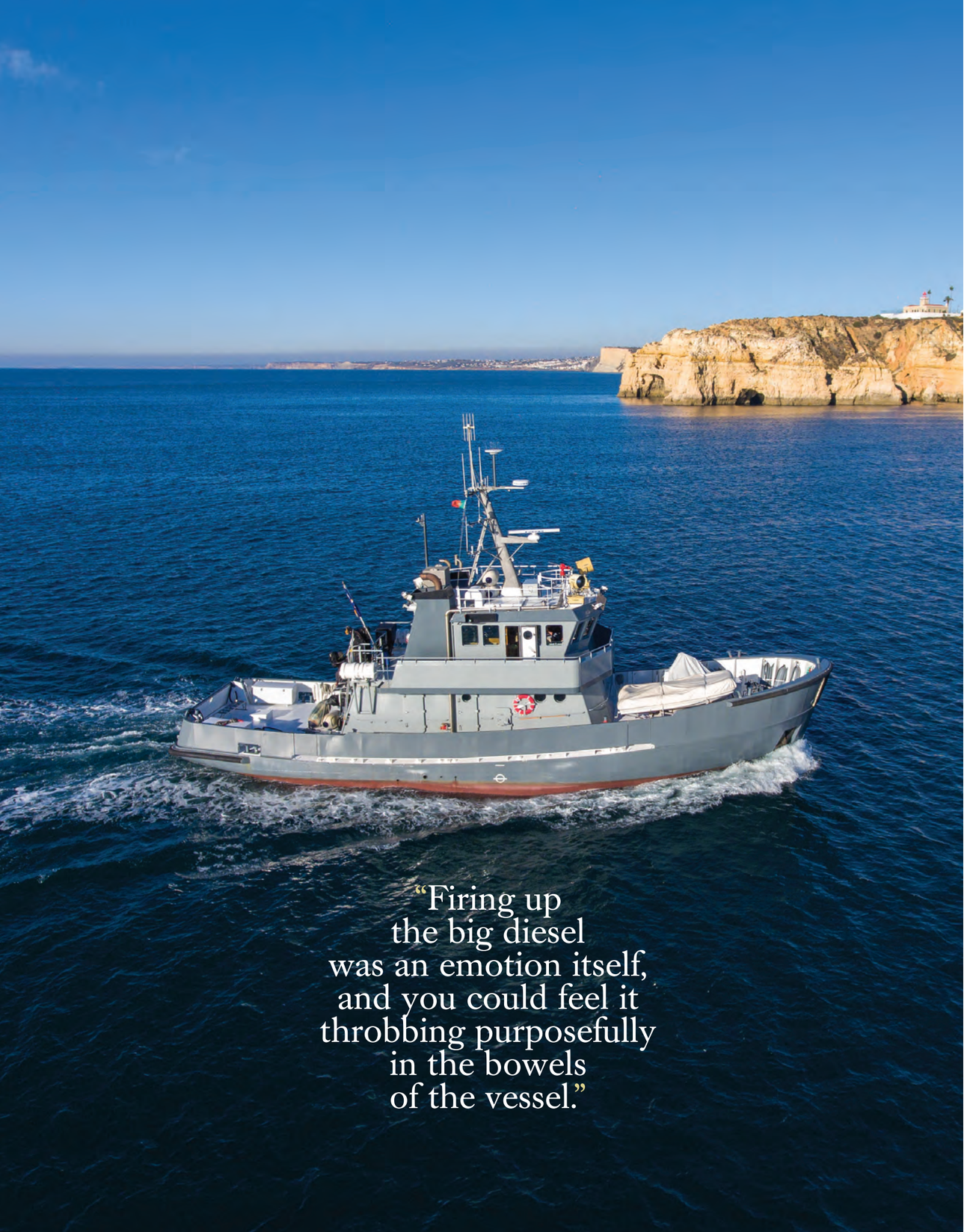
When cruising to remote areas you cannot always guarantee the quality of fuel taken on board so *Astra* has an Alfa Laval centrifugal fuel separator that doesn't rely on paper filters to remove dirt and water. It is one more safety feature on board *Astra*. And if things don't work according to plan, there is even a fully equipped workshop with a lathe and drill for expediting repairs.

Despite just a single propulsion engine *Astra* handles like a dream. Behind the propeller is a Schilling high-lift rudder that can swing over to nearly 70° (instead of the normal 35° maximum angle) with a rear flap added to prevent stalling. This rudder means that she can virtually turn in her own length, and combined with the powerful bow thruster, you have all the control that you need to make this vessel perform as required.

Steerage

The pilothouse reflects the owner's passion for ocean navigation. It is a mixture of the old and new, with a large angled chart table for the paper chart and a large electronic chart display above. The radar display takes prime position in front of the helm, and *Astra* has three radars to ensure continuity. Then there is another chart display over to port, so, in effect, each of the three helm seats can have its own display tailored to individual requirements. There are controls at each helm position with the two side positions mainly dedicated for use when coming alongside. Finally, there is a fourth control position aft in the pilothouse with a view over the afterdeck, which was installed mainly for use when connecting a tow.





"Firing up the big diesel was an emotion itself, and you could feel it throbbing purposefully in the bowels of the vessel."

Sensibly all of the engine monitoring displays are in an overhead panel above the front windows so that they are readily available but do not distract from navigation. Another overhead panel slightly behind the helm contains communications equipment as well as fire and bilge monitoring. *Astra* is equipped with the usual VHF communications, and for long-range passages there is an Iridium phone. As a reflection of her lifeboat past, there is even a VHF direction finder. I don't think I have seen so many electronics in one pilothouse before, but it is all logically arranged and makes sense when you get to know it.

At Sea

I looked forward to the sea trial the most. Firing up the big diesel was an emotion itself, and you could feel it throbbing purposefully in the bowels of the vessel. With the controllable-pitch prop, the engine runs at a constant speed, and there is something about a slow-speed diesel that exactly matches the feel of *Astra*. The channel out to sea from Lagos, Portugal, is quite narrow and there is a lifting bridge to navigate where the width narrows to 35 feet–quite a tight fit on boat with a beam of 22 feet! This was where we could appreciate *Astra*'s precise handling at slow speed.

From there we headed out to sea past the ancient buildings of the port into a benign blue sea. These days you rarely get the chance to head out to sea in a vessel that is designed to cope with everything the sea can throw at it. In southern Portugal we were close to the fringes of the Atlantic, but the weather was not cooperating (or rather it was cooperating too well!) and there was hardly a ripple on the water once we cleared the pier heads at Lagos. Even farther out away from the land it seemed calm, but maybe that was the effect of *Astra*, the confidence it gives you that it can handle anything. Gearing up to the cruising speed of 8.5 knots she just felt very comfortable, easy through the sea with a minimal wake. At this speed she can cruise for weeks burning just 12.5 GPH, and the fuel tanks give the vessel a range exceeding 5,000 miles, enough to cross the Pacific. Winding the engine up to full power produced a speed of 13 knots, so you have a good reserve if you want to hurry to catch a tide.

One of the features installed in the refit was a magical set of MagnusMaster stabilizers. These comprise four arms that swing out when required and use the Magnus effect to keep the boat upright. The arms, slim rotating cylinders that produce lift under the control of an electronic system, are very effective. On the sea trial there was little movement from the waves, so to see the effect of the stabilizers we reversed them to make the boat heel. *Astra* immediately rolled to 15° just under the power of these stabilizers, so I would be very comfortable using them in rough seas. You can never stop all movement–and you would not want to–but to reduce heavy rolling to a comfortable motion would be well within the capabilities of this system.

We were also able to try out the steering, and this was very impressive with the boat turning a full circle in little more that its own length. For normal straight-line passagemaking, you can set the rudder to have the normal 35° steering angle. With this in place, the autopilot steered a very precise course. You are only likely to want the full steering effect in tight maneuvers in harbor or perhaps if you were on a rescue mission.

When we were out on the sea trial, there was a strong temptation to just keep going. We even discussed if there was enough fuel on board to make the Azores, about 100 miles to the west. It would have been food we were short of, so common sense prevailed in the end. But this is a vessel where you feel

Left: Astra *chugs along confidently, and with her deep keel she can achieve up to 13 knots and a slower-speed range exceeding 5,000 miles.* **Above:** *A few details that make* Astra *feel like a real ship.*

happiest out on the ocean. Other additions since her lifeboat days include air-conditioning throughout because the vessel was not designed for tropical waters. A watermaker and extra batteries have been added to increase self-sufficiency, and as they say in the Navy, "She is in all respects ready for sea."

Astra is a wonderful "little ship" built to perform rescue missions in adverse conditions, but the way she has been converted with the simplest nods to cruising show just how feasible it is to take a working vessel and make it into a serious passagemaker. Shipsforsale Sweden, the brokerage that did the marketing of *Astra*, has sold several of these serious commercial vessels for conversion. They are fully aware of the potential of these redundant working vessels. The compact size of lifeboats makes them an ideal choice for the person who wants to explore some of the more remote parts of the world. *Astra* is a go-anywhere yacht that will attract admiring glances wherever she goes, and for me it was a step back in time to board this proper little ship. ■