

# MAIN POWER

An aerial photograph of a sailboat with large, dark sails sailing on a deep blue ocean. The boat is moving from the bottom left towards the center, leaving a white wake. The water's surface is textured with small waves. In the background, a white circular graphic element is partially visible behind the text.

SARISSA WAS NO SLOUCH. BUT REFITTING THE 42.3M TRIPP DESIGN WITH ONE OF THE WORLD'S BIGGEST SQUARE-TOP CARBON MAINS TOOK HER TO ANOTHER LEVEL, SAYS HER CAPTAIN GREGORY MONKS





Testing the head system in the sail loft enabled us to be confident that everything would work seamlessly with the actual headcar and mainsail track

Above: powered up on a beam reach, *Sarissa* now blasts along at 16 knots. Right: extensive testing of the hoist system was carried out in North Sails' loft in Auckland



Left: seen in silhouette, *Sarissa's* square-top lives up to the name

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grading horsepower always gets the boys excited. So, when the decision came to upgrade *Sarissa's* pinhead mainsail to an aggressive square-top, the project was approached with considerable enthusiasm.

*Sarissa*, a 42.6m/140ft Tripp-designed carbon sloop, was originally designed around this thumping square-top mainsail.

The Southern Spars rig package, along with her powerful 3:1 running backstays, was created to run with either the pinhead or a square-top mainsail.

The numbers looked impressive: the square head of the sail would be 4.5m long. This is a purposeful 25 per cent of the foot length, the same ratio that was used by the TP52 fleet in the 2015 race season. The mainsail area would jump up from 495m<sup>2</sup> to 591m<sup>2</sup>, an increase of almost 20 per cent. That's quite a leap. This would be one of the largest square-tops ever built in the world.

*Sarissa* has been sailing the world's oceans since 2011, impressing everyone with her fast sailing performance. She has

never been lacking in power, but the idea of maximising her sailing potential and giving her the horsepower she was designed for was a natural move forward, especially when considering her future racing plans.

Tripp Design and North Sails put together the new sail package, including an upgraded jib and staysail. North's flagship 3Di 780 full carbon sailcloth was chosen. With the sail specifications finalised, it was time to focus on the finer details, including the operation. An extensive service period in Auckland, New Zealand, in early 2016, offered the ideal opportunity to have her new equipment fitted.

North Sails worked closely alongside Rig Pro of Southern Spars to design a system that was not only robust and effective, but also efficient to use. From Rig Pro's perspective, adding the performance benefits of a square-top main to the cruising convenience of a furling boom presented a bit of a challenge.

The main problem was what to do with the large sail area supported by the gaff batten when you wanted to stow the sail. A slick system for hooking and unhooking the headboard car was devised, thereby enabling the square head of the sail to be stowed in the boom when not in use.

## HELP FROM THE CREW

"One of the more interesting challenges was that *Sarissa* required a system that was able to be operated utilising just two crewmembers," explains Matt Smeaton, one of North Sails' superyacht detail specialists. "This meant the control system needed to be easy to manage from deck level, avoiding the need for a crewmember to go aloft in a bosun's chair as had been the case with previous designs for other systems.

"We were given a brief that the crew wanted the mainsail to be easy to hoist and lower, and quick to set up," he adds.

"With both North Sails and Southern Spars being located in Auckland, it enabled us to work closely together in developing the system."

Rig Pro explains that the top of the mainsail could be locked and unlocked from the headboard car by hand simply by pulling a line. The line hoists the specially designed head ring of the mainsail on to a hook on the headboard car, so the sail can be hoisted.

When it comes to furling the sail, the line is pulled again, lifting the head ring off the hook and pulling a trigger so the

head of the sail comes free. Now it can be lowered and easily flaked on top of the rest of the sail that is furled on the mandrel.

To reduce the amount of sail left exposed further, the pre-feeder, which loads the sail on to the mast-track, was extended so the gaff batten would sit almost inside the boom shell. The result is a sail that's almost completely hidden when furled. There is now less sail exposed than was the case when *Sarissa* was fitted with a pinhead main.

At its new sail loft in Auckland, North Sails designed and built a test rig, making it possible for the sail system to be tested extensively before installation. As part of the process, the team invited the crew of *Sarissa* to the loft to work alongside them. This ensured that the sail would operate smoothly from its first use on the yacht because the crew would be familiar with the system from the first hoist.

"It was great to work with Greg from *Sarissa*," Smeaton says. "He understood the benefits of being involved with the testing prior to installation and provided key information to ensure we tailored the system to meet their specific needs.

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actual headcar and mainsail track on board when the sail was delivered and fitted to the yacht.”

A few days before the mast went back into the yacht, North Sails and the crew of *Sarissa* rolled the new mainsail into the boom at Rig Pro in Auckland. This was designed to reduce the time required on the dock. The approach worked and, combined with the testing in the loft, it saved time when it came to the sea trial.

## HOW DOES SHE SAIL?

The results are impressive. The square-top is menacingly big. As soon as the head of the sail is engaged in the headboard car, the sail is eye-catching. Hoisting is easy. There’s a little more effort involved in the initial stage of the hoist, but once the head is engaged the rest of the hoist is no different from that required for the standard pinhead.

It’s important during the hoist to keep the boat pointing accurately into the wind in order to maintain the head of the sail between the running backstays and prevent contact. Managing the running backstays is also crucial, anticipating in advance the starting tack and finding the right balance of where to place the running backstays during the hoist. All basic stuff, but time can be saved if the runners are used efficiently and the boat driven accurately during the hoist.

As *Sarissa* is steered off the breeze, the windward backstay is run into position before the main loads up and the boat accelerates quickly away. In 22 knots of true wind she quickly picks up speed as the new 3Di headsail is unfurled and trimmed and the boat continues to accelerate. Bearing away on to a beam reach, we quickly settle into our groove, blasting along at a comfortable 16 knots.

The extra power generated from the additional sail area and the sail shape drive the boat forward impressively. The 3Di sails look good – flat and powerful. In the strong gusts, the direct-link steering loads up nicely, communicating the extra power directly through the wheel.

Not surprisingly, we find the main needs to be eased more than we’re used to in gusts. A little vang up helps to spill the extra breeze by opening up the head. The boat still feels very well balanced and remarkably more powerful. It’s quick, stable and finely tuned.

We were right to feel excited.



**Top: plain sailing in Tetiaroa, French Polynesia. Above: the crew and experts from North Sails tune up the mainsail battens**