

# Shosholoza II to carry America's Cup hopes

They gained valuable experience during the Louis Vuitton Act 1 regatta in Marseille, France. Now Team Shosholoza, South Africa's first entry in the America's Cup, is looking forward to sailing a more competitive version, writes Henri du Plessis



At the gun: Shosholoza, foreground, gets away upwind of Team New Zealand and cup defenders Alinghi during a fleet race of the Louis Vuitton Act 1 regatta at Marseille.

## Ignoble end for jinxed yacht NZL82

THE LIFE of NZL82, the prosaically named yacht in which New Zealand failed to defend the America's Cup last year, has been a short and bitter one.

When a freak storm flung the yacht from its cradle on the pier at Marseille, France, two weeks ago, its competitive life came to an end.

Its hull agape after being pierced by the sharp edge of a shipping container, NZL82 was flown home to New Zealand to be repaired, then quietly retired.

Previous New Zealand Cup yachts, among them the victorious NZL32 and NZL60, have retired with ceremony, passing into the hands of maritime museums or joining fleets of classic yachts worldwide.

No such glorious future awaits NZL82, which has been plagued by almost perpetual trauma.

Even on the drawing board, NZL82 was controversial. Its builders challenged several aspects of its design and its completion was delayed by a month while builders and designers warred over specifications.

When it emerged fully formed there were immediate rumours, the NZL82 carried a design feature which made it revolutionary: a freak among its class rivals.

That feature was eventually revealed to be a close-fitting second hull known as a hula - an abbreviation of hulled appendage - designed to give it more speed.

While experts quarrelled over whether it met the letter or spirit of the Cup's rules, many believed it would give New Zealand an overwhelming advantage in the 2003 Cup final against Swiss challenger Alinghi.

In December 2002, three months before the Cup final, the yacht was hurriedly rushed back into its shed. Nothing was said and Team New Zealand remained upbeat but it was then the first hint of doubt emerged.

What was not immediately known was that the yacht's twin sister, NZL81, had a major failure during trials. NZL82 had been immediately dry-docked to be substantially strengthened.

The rest is history. Alinghi swamped New Zealand 5-0 in the best-of-nine race finals series, becoming the first team to win the Cup at its first attempt.

NZL82 was not only blanketed in those five races, it twice had disastrous structural failures.

Millions had been spent on its design and construction. Yet at its first outing an R5 plastic bucket, used to bail its rapidly-filling hull, had been all that stood between it and disaster.

Since the Cup left New Zealand in March, 2003, many hours have been spent in determining what went wrong with NZL82.

The results of Team New Zealand's investigations into NZL82's failures have never been released; those findings are still too sensitive.

What seems clear is that to get an edge on its rivals whose budgets far outweighed New Zealand's, the yacht's designers became obsessed with innovation and lost sight of fundamentals. - Sapa-AP

NEW Shosholoza will be ready to do battle at sea as early as June next year.

Construction on South Africa's first completely new America's Cup yacht would start as soon as materials and labour could be made ready, confirmed skipper Geoff Meek and naval architect Jason Ker.

Yet another new yacht would then be built about a year later to improve even further on the experience gained from sailing the first new one.

Team Shosholoza is South Africa's first entry in the America's Cup, the yachting world's premier inshore sailing competition.

The team, representing the Royal Cape Yacht Club as the official challenge club, has challenged for the America's Cup 2007 and last week took part in the first precursor regatta, the Louis Vuitton Act 1 regatta, in France.

"We want to start building the deck as soon as we can get the materials and the labour together and then we'd like to start on the hull by the end of November," Ker said.

The decision to build a new yacht was made after the team showed much promise during the Louis Vuitton Act 1 regatta.

The South Africans managed to beat two newer yachts on two occasions in fleet races during the regatta and won all but one of their starts in a match racing series that followed.

The boat has since been shipped to Valencia, in Spain, for two further Louis Vuitton events in October.

The team's original plan was to bring the current boat back to South Africa after the Valencia events, chop her up and adapt her hull. But Meek and challenge chairman Salvatore Sarno realised that the cost of doing that was not that much less than building a completely new, competitive boat.

Explaining the intricacies of designing an America's Cup yacht, Ker said he hoped to design the first new yacht as a fast, good all-round boat with which the South Africans could compete strongly and learn during future Louis Vuitton events.

"If one focussed too much on certain special features, one could lose sight of the whole. That is why we'd like to concentrate on getting the right balance."

Ker said the boat's design would take into consideration the weather and sea conditions it would face and tactical decisions, such as whether it would be better at upwind or downwind sailing would be made accordingly.

"The second boat we aim to build later, to serve as the final challenge yacht, will be designed to specifications that include what the crew wants."

The yacht will be built over a male mould, using resin pre-impregnated carbon fibre cloth with a honeycomb core.

The mould, or plug, will be made to Ker's specifications

with wooden frames and slats covered by a finely faired and polished plywood skin.

America's Cup yachts have to be designed according to a specific rule that limits the width and length of the hull in specific places, as well as the minimum weight of the yacht.

"We have no America's Cup research of our own, but we do know what the other teams did for 2003," Ker said. "We have to take that further and project it to 2007."

Ker explained that America's Cup yachts had to be designed inside well-defined parameters set by the event's rules committee.

Naval architects have to stick closely to certain length, weight and width restrictions to see their boat

qualify to take part.

The aim is always to optimise waterline length within the rule and to ensure that the sail area reaches the maximum efficient size for the boat. A sailboat with a longer waterline will always go faster than a shorter boat, even if it is heavier.

For that however, it needs the appropriate sail area and these two need to be carefully balanced.

America's Cup yachts are narrow, long boats with a rounded hull and deep, narrow keel. At the tip of the keel, a huge bulb of heavy metal is attached, to counter the forces exerted on the sails by the wind.

The bulb accounts for the largest percentage of the yacht's total weight. They are generally

designed like monster versions of a sailing dinghy, offering no accommodation or any other creature comforts. The boats are designed to race a simple, basic course against and with the wind, with little or no sailing with the wind on the beam (from the side of the yacht).

The yacht therefore does not need a broad beam with a very flat area behind the keel, as one would find on the Open Class 60-footers raced in round the world single-handed marathons. The BOC Challenge race, a regular stopper at Cape Town in the past, is an example of such a yacht race in which Open Class 60s are involved.

America's Cup yachts are also lightly built and not meant to do lengthy passages or ocean crossings. They

excel in a breeze lighter than about 25 knots and it is rare that a race would be ahead in wind stronger than that.

Sail trimming is one of the fine arts aboard America's Cup racers. As a result, the winches used for tightening the "sheets" (ropes with which the sails are pulled in) are of the most expensive, lightest material and most efficiently geared for maximum power and speed.

Manoeuvring into the best positions at the start of a one-on-one match race is a vital part of the total strategy, which means that these yachts have to be able to turn on the proverbial tickey.

The narrow keel plays an important role in this, but so does the long, narrow rudder. Some America's Cup yachts of the recent past even came equipped with a bow rudder to add to the boat's ability to turn.

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