

THE FASTEST TRIMARAN AROUND?

"Spirit of England", the high speed 40' offshore racing trimaran, is now probably the fastest offshore sailing boat in Britain. She is owned, raced and prepared by skipper Peter Clutterbuck, whose attention to detail and use of the latest high tech equipment ranks him as one of the new generation of high speed sailors.

Doyle's association with the project started with a number of small sail operations that progressed with success, until now a whole inventory of Spectra laminates and multipanel downwind nylon sails have been completed.

"Spirit" has evolved a whole new ethos in multihull sail design, particularly with her light air sails. Winning the Scottish and English Three Peaks Race last season and listed as scratch boat in the RORC 1997 Series makes her a boat to watch carefully during this season.

"Shockwave", another very fast trimaran on the race circuit, will be competing with a full inventory of Spectra/Vectran high performance sails from the UK loft.



"CETEWAYO" GETS A PERFORMANCE BOOST

A traditional Laurent Giles cruiser built in 1955, "Cetewayo", has been completely rebuilt from a gutted hull by the current owner, Mr David Murrin. This traditional yacht has been used for a combination of private cruising, charter, and a heavy programme of racing.

From the outset, performance sails with shape stability for lasting cruising performance were required.

So far the Doyle sail specification has proven to be spot-on. The yacht has achieved a huge programme of cruising along the French and Spanish coastline. Racing results have been outstanding, with a 1st in the 1996 Classic Racing Yacht Class, Round the Island Double Event and a string of results in other Solent outings.



"Thanks to Doyle staff for all the hard work, enthusiasm and skill that have been put into the new sails for "Cetewayo" this year.

Your persistence and perfection in cutting the complex shape for the No.1 was outstanding in this regard"

David Murrin

HIGH PERFORMING SWAN IN EXPO '98

The Swan 65' ketch "Blue Magic" is achieving outstanding results in EXPO '98, an exciting Round the World Rally, via the 'warm' route. This race is predominantly aimed at performance cruising yachts, with stopovers in exotic resorts in St Lucia, Galapagos Is., Bora Bora, Fiji, Cairns, and Bali. This will probably be the most pleasant route for round the World sailors, but they will still encounter poor weather conditions and have to plan accordingly.

"Blue Magic" selected Doyle SMP woven fabric in her sail inventory, which offer most of the advantages of Grand Prix sails, but with better handling characteristics and lower cost. The main and mizzen were constructed in 9.2 oz SMP Polyester with a radial Dacron (warp orientated) furling genoa powering the front of the boat. A wide range of spinnakers, staysails and an APC Cruising Chute will offer devastating performance for this Swan offwind.

"ONYX" COVERED WITH DOYLE

This Ron Holland 95' Superyacht has a demanding schedule of sailing during the season and enjoys the benefit of high tech Spectra laminates to boost performance.



SAIL DESIGN & TECHNOLOGY

SPRING 1997

DOYLE EU WIN "VELSHEDA" SAIL ORDER



Doyle Sailmakers EU fought off heavy competition to win the sails package for the newly rebuilt 'J' Class yacht "Velsheda".

The mainsail is probably the largest sail that we have manufactured based on our very successful **ELLIPTICAL LOADING** aerodynamic design programme. This concept produces sail shape stability in large sails not thought possible with conventional triangular planforms.

The "Velsheda" rebuild programme is based on performance, with the introduction of carbon spars and unique sail handling systems. "Velsheda" will be undergoing sail trials in the Solent during August 1997, prior to her departure for Newport, Rhode Island, for an historic meeting with "Endeavour" and "Shamrock".

There are three main reasons for the selection of Vectran Laminate for the fore/aft sails.

WEIGHT: These are some of the largest in the World and only laminates can offer up to half the weight of regular polyester sails.

STRENGTH: Vectran is as strong as some of the highest modular fibres used in today's Grand Prix sails. Based on polyester polymer chemistry, it laminates easily with a strong bond.

DURABILITY: Vectran has a double bonus here. It's long term creep is practically zero, particularly important with a leech of 163 foot! It also has zero flex fatigue, important if you need to fold sails for stowage.

The 'J' Class "Endeavour" has also recently been fitted with a new Mainsail from Doyle Sailmakers.

"There is no question in my mind that we won because of speed.

I'm convinced that Doyle sail technology is clearly superior to the moulded sail technology"

Ludde Ingvall

TECHNICAL EXCELLENCE IN DESIGN & CONSTRUCTION

TECHNOLOGY UNLEASHED ON "NICORETTE"

Doyle Sails were selected by "Nicorette" for her challenging 1996 race programme. The new sails were developed with one mission in mind - to win! The 1996 Round Gotland Race was convincingly won by "Nicorette", comfortably beating two other Grand Mistral 80 foot yachts to the finish. By the end of the first 45 mile beat, she was 2 miles ahead of the next nearest 80 footer which was using a moulded mainsail.

After an impressive win in conditions ranging from 0 to 35 knots true wind speed, skipper Ludde Ingvall told the Press **"There is no question in my mind that we won because of speed. I'm convinced that Doyle sail technology is clearly superior to the moulded sail technology!"**

Success for "Nicorette" continued throughout the season, winning in all sorts of weather conditions. Cowes Week was an overwhelming success, at one time being the only Class A yacht to finish a race in 47 knots true, at times going at 28 knots over the ground. Racing continued throughout Europe; performance improving with the addition of every new lightweight sail development.

The current mainsail is nothing short of amazing. Developed from Doyle's unique Elliptical Loading Programme, "Nicorette" has sailed every race using just the one high modulus kevlar racing mainsail, which has never been re-cut because frankly, no shortcomings have developed. It is lighter than a moulded sail alternative and has made the boat perform in everything from 0 to 47 knots - that's better sailing through chemistry.



ELLIPTICAL LOADING - THE TECHNOLOGY

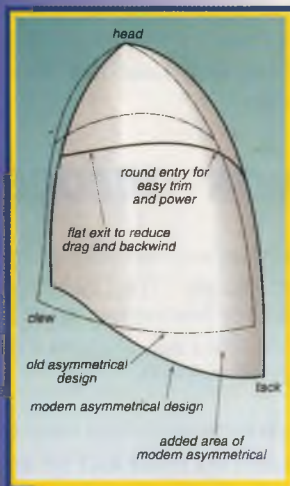
Sails are sensitive to small changes in shape. Just a few inches can make the difference between winning and an average performance. The unique new Doyle headsail programme moulds in a vertical shape distribution that ensures **ELLIPTICAL AERODYNAMIC LOADING** - a revolutionary new concept that minimises drag and maximises lift. In short, it produces sails that are fast, and easier to trim.



This new design technology is a result of joint research by Doyle and Delft University in Holland (where the winged keel was developed). Sophisticated mathematics modelling, computer testing and on-the-water evaluation identified that vertical distribution of shape is actually MORE important than cross sectional shape.

Why have these sophisticated shapes eluded sail designers for so long? Mostly because sailmakers are starting with the worst possible geometric shape from which to produce an aerofoil - a triangle. That's why aeroplanes don't have triangular wings and why boats don't have triangular keels or rudders.

In real race conditions the new Elliptical headsail designs are proven winners - see the "Nicorette" report.



ADDED HORSE POWER FROM ASYMMETRICS

15 KNOTS IN A 24' SPORT BOAT; AROUND THE WORLD IN UNDER 75 DAYS IN A 92' CATAMARAN; 12 KNOTS BOATSPEED IN 7 KNOTS OF BREEZE IN A DISPLACEMENT BOAT ...

All these figures confirm beyond doubt the enormous advantage from an asymmetric spinnaker to boost performance, even when cruising. The biggest advantage to the cruising helmsman is the ease of control that is achieved over a conventional spinnaker, requiring a spinnaker pole, guys, etc.

Development of increasingly powerful racing asymmetric sails on yachts such as America's Cup contenders, have influenced both design and construction of the cruising counterpart. Now Doyle designs are more aerodynamically shaped, are more stable in use, longer luffed and far out-perform the old type cruising chutes.

Despite some limitations when flown without a pole at very deep angles downwind, the APC (Asymmetric Power Chute) has become an even more popular choice for cruising and shorthanded sailors to boost performance and pleasure offwind.



DIGITAL CAMERA THE KEY TO ANALYSIS

Marked camber lines are an integral part of the Doyle sail design for headsails and mainsails. Not only are they of benefit to sail trimmers when sailing, they enable us to identify changes to the shape and setting of client's sails.

Using a digital camera, we take photo's from strategic points around the rig. These digital images are then loaded onto computer screens back at the loft. We then analyse any differences between the sail design and the actual flying shape. This helps us to offer advice on sail setting, rig tuning and control of sail shape. This also assists us with our important programme of R&D.

