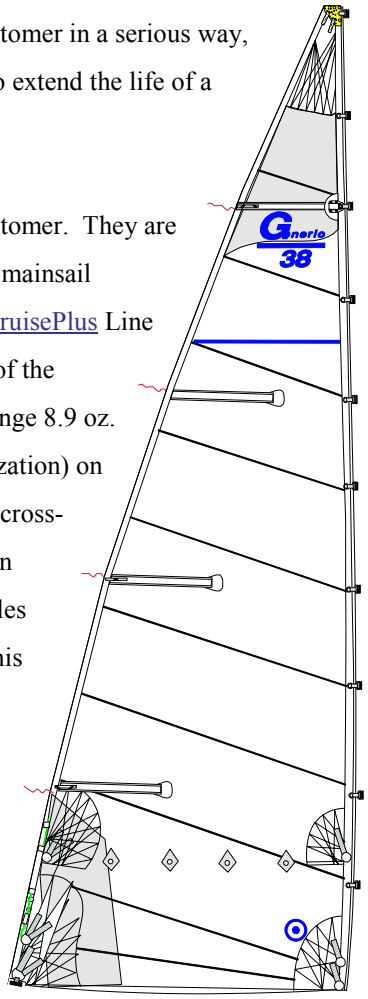
Summary of Mainsails

For use in a Sail Magazine Article
By: Bob Pattison 1 Feb 92

After careful review the sailing habits and needs of our customer, we are going to recommend a Dacron mainsail for their 38 foot racer\cruiser. In their particular situation, which entails little serious racing and more all around use, the Dacron sail will give them a better value and much longer life than a comparable Kevlar Composite mainsail. The Dacron mainsail will give them 2 years of very good and active racing life and more importantly, with today's construction standards will easily last them ten years with normal care and use. This is demonstrated by the fact that we are only now replacing the OEM sails that we built for Cal and O'Day fourteen years ago. If future racing beckons our customer in a serious way, this sail could be relegated to use as a recreational and delivery mainsail allowing them to extend the life of a new Kevlar Composite mainsail at that time.



At Neil Pryde we have two categories of Dacron sails that would be applicable to our customer. They are our Cruise Plus Line and The Cruise Line. The Cruise Line represents for us our "basic" mainsail configuration and a sail that in design, fabric and conception is every bit as good as the CruisePlus Line but with more traditional finishing specifications and fewer bells and whistles. Because of the nature of the latest 3-D CAD/CAM systems and the fact that we will use the same Challenge 8.9 oz. High Tenacity "Blade" fabric (because of its high thread count and very good bias stabilization) on both sails, the "mold" shape or 3-Dimensional shaping will be identical. The sail will be cross-cut in panel orientation and any shape deformation over the years will be smooth and even because of the wide span panels, resulting in a sail that will be free from distortion wrinkles and miss-matched bias "bumps" that sometime accompany a radially cut Dacron sail in this size range. The mainsail will be outfitted with conventional block patches, have slightly longer than conventional battens, one reef, sail numbers and a bag. The construction engineering details in terms of stitching (2-rows of 3-STEP) and in patch density or thickness would be the same for both sails and the basic hardware such as a webbed and riveted headboard, pressed and webbed Harken Stainless Rings and the luff attachments would also be the same, being predicated on the displacement and area of the sail.

The CruisePlus Line, as I mentioned before, has more bells and whistles. It would come with all the above construction details and then some. We have added these extra details to the sail to enhance performance and to increase the life expectancy of the sail. The extra features include the addition of a full length batten at the top of the sail and much longer

length conventional battens in the other locations that will significantly reduce the amount of sharp, hard flogging the leech of the sail does throughout its life, thus increasing the life expectancy of the sail and making a generally easier to handle sail. The other item of importance that will add to the life of this sail is the addition of a two-ply overlay on both the head and clew of the sail. These overlays will taper into the body of the sail and each will be 25% of the leech in length. With the addition of radial reinforcing patches the primary load corners of the sail have been rendered bomb proof. The radial patches offer the strongest (because of threadline orientation) and lightest patch type available and the two-ply overlay extends and disperses the high loads evenly well into the body of the sail. This feature eliminates bias distortion in these areas which at some future date could be responsible for batten creases along the inner tips of the battens and also decreases the likelihood of the sail "blowing" out of shape.

As mentioned before, it is not unusual to see a well-constructed Dacron sail last into its teens. The two things that break down fabric are flogging and U.V. radiation. U.V. damage is not usually an issue; the average sailor sailing perhaps 3 weekends a month for 6 months of the year will expose his sails to around 200 hours of direct sunlight and use per year. This amount of use is not going to adversely affect the integrity of the fabric for many years. Flogging, on the other hand, can be very detrimental to the life of a mainsail. The constant fluttering of fabric will quickly breakdown the resins used in finishing the fabric and with time will start to impact the yarn itself. This of course will lead to small problems such as shape migration and batten creases and in the long run can lead to catastrophic failure. Most of today's many batten options help to diminish the hard flogging mainsails had been accustomed to and will add greatly to the sails longevity. Sail replacement then will be determined by usage... Does the client race frequently? Are they sailing in environs that are hostile with heavy seas and wind? At what latitude and how much sailing do they do? These are questions to look at and then having the sailmaker visually check the sail will help to determine the replacement cycle of today's sails.