



## Buying Cruising Sails – What you need to know

Anybody that has bought new sails in the past, or is in the process of buying new sails will probably have got quotes from several different sailmakers, and will no doubt have been somewhat astonished at the range of prices that they received back for what appears to be the same product. The objective of this article is to try to explain the differences between a sail that appears to be expensive, and a sail that is less expensive.

The sailmakers primary aim when designing cruising sails should be to produce robust sails that are efficient, easy to trim, and durable. However, not every sailmaker is equipped to achieve these rather fundamental criteria to the same level, with the differences being due to their experience, tools available, and the materials that they use.

Let's start with the basic raw material, the cloth itself. For the purpose of this article I will consider only Dacron, but many of the same principles apply to other fabrics as well, i.e. laminates. Each of the major cloth manufacturers makes good, fair, and poor fabric, and each of these will be graded (i.e. there will always be 'seconds'). The prices can vary by as much as 30%. Unfortunately, some sailmakers designate the fair and poor quality materials (and even the seconds) for cruising applications. The assumption is that the cruising sailor is a price driven buyer who won't know (or bother to learn) about the differences. Obviously, a sailmaker that uses a better quality fabric is going to produce a more expensive sail.

*But what defines a good fabric?*

Basically, a good fabric can be defined by its ability to resist stretch. Better quality fabrics stretch less under load, which has a direct impact on how the sail will perform as an aerofoil, how long it will retain its shape, and how easy it will be to handle. Clearly materials do matter. When using lower specification materials, the stretch characteristics are compromised, and the sail will tend to get too full (even when new), with rapid deterioration in shape over time. This is particularly critical in cross cut sails because the panel layout cannot keep the loads on the threadline.

*But what actually makes it good?*

There are four factors that combine to determine the overall quality of the fabric: fibre type, fibre density, finishing, and manufacturing. A better fabric will have high quality low stretch fibres in a tighter weave. Better fabrics will also tend to use higher numbers of smaller fibres, with the tighter weaves being less dependant on 'finishing' to resist stretch. Finishing refers to the process by which the raw woven cloth is dipped into tanks of resin and then dried which causes the material to shrink, thus pulling the weave tighter together. Although finishing has a significant role to play in the overall stretch characteristics of a particular cloth, it is worth noting that finishing can be used to cover up low counts of low quality fibres. However, in the long run lack of good

basic components will show up as the resination breaks down. A more expensive sail is likely to come from a sailmaker that demands quality and rejects materials that are not the very best.

*OK, so fabric does make a difference, but all sailmakers design their sails on computers, so they should all be the same shape shouldn't they?*

No! The computer is just a tool which the designer must be able to manipulate in order to produce the best shapes. Obviously the fabric choice is very important, but the advantages of having the best fabric are lost if the designer does not have the skill and experience to use the tools at his disposal. The advent of Computer Aided Design (CAD) technology has meant that the difference between a bad sail and a good sail is not as obvious as it once was, which is why it is even more important to err on the side of quality and reputation. Believing that all sails are the same because all the sailmakers use computers to design them is akin to saying that all tailors use tailors dummies, so all suits are the same. As we all know, this is most definitely not the case!

The designer does not just concern himself with cloth selection and shape. The designer is also responsible for the size, shape, and orientation of the patches, the design of the batten pockets and every other detail that you find on a sail. Typically, a more expensive sail will have had more time and effort afforded to it at the design stage, and will be more carefully engineered and manufactured to ensure the perfect fit first time, and to ensure that the sail flies as intended.



*New Dacron Mainsail from 'budget' sailmaker*



*New Dacron Mainsail for same boat from OneSails*

*So fabric choice, the skill of the designer and build quality are all contributing to the cost of the sail, but what will the differences actually be on the water?*

The modern cruising sailor is increasingly aware of the benefits of having well engineered and constructed sails. Sails that hold their shape across a wider wind range allow for:

- Higher pointing: a well designed sail will point higher than a not so well designed sail. It will also be easier to trim

- Less heeling: a boat that is heeling unnecessarily can be quite intimidating and uncomfortable for anybody, let alone the inexperienced or the family on a weekend passage. This will also affect the balance of the boat: less heeling means less weather helm.
- Easier handling: a sail that holds its shape as the wind increases, or doesn't go baggy when it is furled will ultimately be easier to handle. It is also likely to flog less which will contribute to the overall longevity of the sail.
- The overall result is that the boat will get from A to B not only quicker but more easily.

Many cruising sailors may well feel that going faster is not important to them. This aside however, lets be really conservative and say that well cut sails will give you an extra 0.2 knots of boat speed for doing nothing else other than having them up and flying. An extra 0.2 knots equates to 400 yards an hour. On an 8 hour passage this is 3200 yards, or over 1.5 miles. How often would 1.5 miles translate into a missed tidal gate or missing a mooring for example? Being more realistic about the boat speed gain will result in the increased distance sailed or the time saved adding up considerably. It may also mean the difference between stemming a foul tide and having to kedge.

We have established then that the price differences between sailmakers can be attributed to quality of the fabric used, the skill and experience of the designer, and the quality of manufacture. If you were buying a new boat you wouldn't just buy the cheapest one you could find, you would consider the reputation of the designer, build quality, the way it is engineered, raw materials, performance data, manufacturers reliability, after sales service, prestige, functionality etc. When buying new sails you should have a similar set of considerations, and don't be afraid to ask the sailmaker a few pertinent questions.....

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