OWNERS MANUAL

NEILPRYDE SAILS

Introduction

This user manual is designed to help you to get the most from your Neil Pryde sails. Whether you are a cruising or racing sailor, investment in sails is an important aspect of your sailing program. We want you to have all the information you need to get top performance.

Neil Pryde operates from a centralized loft. We rely on an extensive worldwide network of sail consultants to service our customers needs. Our consultants will help you get the most from your relationship with Neil Pryde.

If, after reading this booklet, you have further questions, please don't hesitate to contact either your local Neil Pryde consultant or the International Design and Sails Office at:

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Neil Pryde Terminology

In this discussion we use many technical terms with very specific meanings, While most are standard terms, other sailmakers sometime use alternative terms.

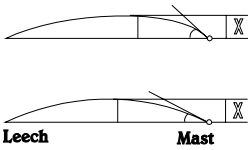
Glossary of Terms

Halyards and cunninghams

Halyards are lines used to pull the sails up and to adjust the position of the draft (sail camber, curvature or “fullness”) fore or aft in the sail. They don’t significantly alter whether the sail is more full or less full. More tension on the halyards brings the draft of the sail forward; less tension drops it back. (figure 1)

Cunninghams are down haul lines for fine tuning luff tension after the halyard is tightened and cleated off. It has the same effect on the draft as the halyard.

Figure 1

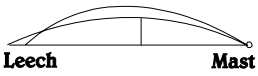


Halyard tension moves draft forward and aft, with little effect on how full the sail is.

Mainsail outhaul

Line used to flatten or make fuller the bottom third of the sail. Tightening the outhaul flattens this part of the sail and makes the aft section (exit or leech) straighter. Loosening the outhaul makes the sail fuller in the bottom so the leech becomes a rounder, fuller exit, providing more power. (figure 2)

Figure 2



Outhaul tension effects how full the draft is, with little effect on it’s position forward or aft.

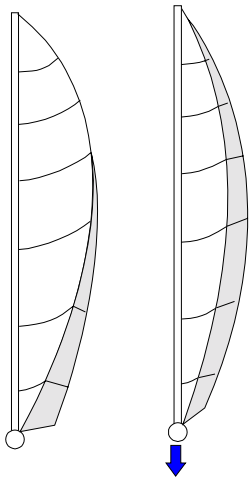
Main sheet

Line giving control over the movement of the boom. Upwind, it is used to control sail twist (tighter mainsheet reduces twist, looser mainsheet increases it). Downwind it is used to control the lateral position of the boom in and out. (figure 3)

Boom vang

A line at 45 degrees from bottom of mast to underside of boom. This adjustment is predominantly used when sailing off the wind to control sail twist. Tightening boom vang reduces twist, loosening increases twist.

Figure 3



As the mainsheet is tightened, the boom is lowered, and the the twist is pulled out.

Genoa fairlead

Block through which genoa sheet passes. This has two functions which are interactive: moving the fairlead aft will tend to increase twist and, at the same time, flatten the bottom third of the sail. Moving the fairlead forward reduces twist and makes the bottom of the sail fuller. (figure 4)

Genoa sheet

Increase sheet tension always reduces twist, but—and this depends on the position of the fairlead — genoa sheet tension also has an effect on the fullness of the sail. If the fairlead is a long way forward the sail will tend to get fuller as the sheet is tightened. If the fairlead is a long way back, the sail will get flatter, especially in the bottom third.

Backstay

The backstay is the single most effective adjustment on any boat (except those with extremely stiff masts). Increasingly backstay tension flattens both the mainsail and jib simultaneously, as follows: It pulls the mast top backward, which flexes the middle of the mast forward, thus flattening the mainsail. This also makes the forestay tighter, which pulls the jib body forward, flattening it as well, especially in the entry. (figure 5a and 5b)

Woven materials

Any material that is made up of individual yarns woven together to form a fabric. It can be finished to different levels of stiffness through the addition of a coating of hardener. (Tetoron, Dacron, polyester, Nylon, and other company trade names)

Kevlar ™

Describes a fabric which has Kevlar yarns for extra strength in critical directions. Kevlar is a man-made fiber of incredible strength and lightness. This material is made only in laminated form, which means the Kevlar yarn is glued to a film of plastic-like material.

(Kevlar/mylar, Technora ™)

Spectra ™

Describes a fabric which has Spectra yarns for extra strength in critical directions. Spectra is a man-made fiber with the hightest modulus of any of the fibers mentioned. Spectra has incredible tear strength and very good U.V. resistance. The material is generally found in laminated products.

Mylar / Polyester Film

Any fabric which gets its strength from a backing of plastic film. This material can be either single sided (film on one side only), or can be a “scrim” style material (plastic film on both sides with a strength-giving weave of threads sandwiched in between).

(Laminate)

Parrel beads

A wire strop covered in plastic balls used to attach free flying sails to the forestay over a roller-furled sail. (Figure 6)

Oz(USA)

At Neil Pryde we use the industry’s standard measurement of weight, the American sailmakers’ yard (36” x 28”). Some sail lofts use English ounces per square yard although this is becoming increasingly uncommon. Standard European units are grams per square meter.

Multi Track Foam Luff

Neil Pryde’s innovative foam luff tape system that promotes shape flattening of headsails when using roller furling gear, yet does not permanently distort with time as do solid foam luff systems.

Broad-seaming

Rounding the edges of sail panels to create 3-Dimensional shape.

(Takeups, shape) (Figure 7)

CDT

“Continuous Development Technique” is the name of the Neil Pryde computer design system that creates a sail shape defined in numerical format. (“mould, “tin plate”)

Warp-oriented

A fabric that has its strongest threads—and therefore its greatest strength—running along the length of the cloth. Used in the production of radial sails.

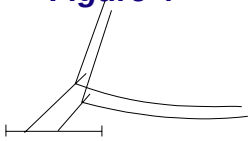
Fill-oriented

A fabric that has its strongest threads—and therefore its greatest strength—running along the width of the cloth. Used in the production of cross-cut sails.

Overlap—(L.P.) Luff perpendicular

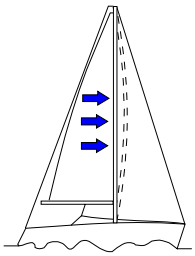
Expressed as a percentage of “J” (the distance from the bow to the mast) this figure indicates the size of a specific genoa. Standard sizes are: #1 - 150% #2 - 135% #3 - 105% #4 - 80%

Figure 4



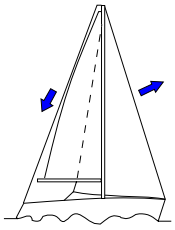
Fairlead back tightens the foot, flattening the bottom third of the sail, and letting the leech raise up (more twist). Fairlead forward creates a fuller sail, but pulls the leech down,reducing twist.

Figure 5a



Tightening the backstay pulls the top of the mast backward, and bends it forward in the middle. This flattens the mainsail in the middle.

Figure 5b



Also as the backstay is tightened, the forestay pulls up and forward on the jib, flattening it as well.

Design: The Basic Principles and their Relationship to Sail Trim

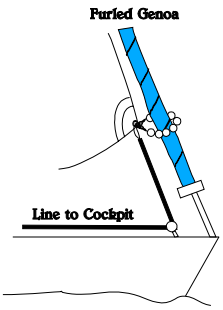
You've probably read articles on trimming according to differing wind strengths. The objective e is always to make his sails work across the maximum wind range possible. For the designer of the sails, the task is to produce sails which will respond to the sailor's adjustments with an overall goal of versatility.

Sails are made up of flat panels of sail cloth. Their three-dimensional shape—the airfoil—is produced by cutting the panels narrower at each end than the middle. (see figure 7) In addition, the curve of the sail's leading edge (the luff curve) is cut to match the curve of either the forestay sag (for jibs) or mastbend (for mainsails). By carefully controlling these two variables it is possible to produce almost any shape in a sail.

Although each sail is a separate entity, when used together they are highly inter-related. They should be thought of this way both on the design computer and when considering sail rim.

At Neil Pryde, we make a full range of cruising and race sails. Each is meticulously developed using the CDT design system program. CDT allows us to describe sail shape in a numerical format so that sails, subject to size and aspect ratio, can be scaled up and down and transferred from one boat type to another with consistent results. The computer imagines the designed mould and literally drapes the panels (in the defined layout) over the mould. Those areas where the fabric overlaps are plotted and cut by a computer driven cutter. By literally cutting off the overlap from the cloth it is possible, after joining the panels, to re-create the defined shape. This cutting is known as "broad seaming", and is applied to both the cross-cut (horizontal panel) and radial-shaped sails.

Figure 6



Parrel beads keep the tack of the Spinnaker close to the center line of the boat for better shape control.

Upwind Sail Trimming

Basic Principles

Most people assume that there is an ideal trim setting for every given sailing situation. This is theoretically true, but involves balancing many factors according to conditions and performance goals. The constant changes in wind and sea, the relative disturbance of the air, and even, the tactical position in a race can affect the sail trimmer's goal at any one time. We'll see later that ideal trimming can go beyond perfect-looking sails.

In order to simplify matters let's begin by generalizing that the majority of upwind trimming situations fall into one of two categories: power or pointing.

"Power" means trimming for acceleration, and generally involves fuller, more twisted, sails. "Pointing" is trimming to flatter, less twisted, sails once you have attained higher speed, and want to head closer to the wind.

The only time when these principles do not apply are in very light, almost drifting, conditions when acceleration is improved not through additional power from the sails but through reduction of drag. This is achieved by flattening the sail: the wind will flow more easily over the flattened surface (less drag) than over a rounded surface.

For the cruising sailor following the principles of full or flat sails, excellent performance can be achieved over a wide variety of conditions.

The following graph, which shows when to trim for wither power or pointing (and basic characteristics of each), can be used at any stage of a day's sailing, You might even find it useful to keep on deck.

UPWIND SAILING GUIDE

Wind Condition	Extremely light (drifting) 0-4	NORMAL CONDITIONS			Extremely Heavy 22-30
		Light 4-8	Moderate to Heavy 8-22		
Trim Goal	Keep moving by reducing drag	Accelerate	Head Closer to Wind		Foward motion through rough sea
Trim Style	Pointing	Power		Pointing	Power
Sail Shape		Smooth Water	Rough Water		
Overall	Flat	Medium	Full	Med. Flat	Medium
Entry	Flat	Flat	Full	Medium	Med. Full
Exit	Med. Full	Med. Flat	Med. Full	Medium	Flat
Twist	Maxium	Medium	Med. High	Min.	Med. Low

Graph 1

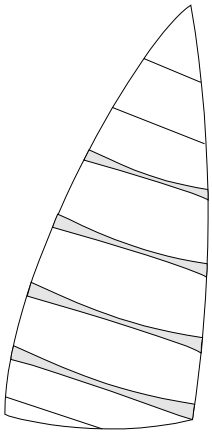
(Graph #1)

Special situations for each trim style:

Power	**Pointing**
·acceleration	·when at max speed upwind
·disturbed airflow	·clean air
·out of tacks	·during gusts
·rough water	·flat water
·after hitting waves	

This graph shows how the power/pointing relationship changes as the wind increases. The left hand side of the graph represents lightest wind. Moving across the pages show how trim should change as wind speed increases. Note how the trim in light air should be very different for smooth or rough water. Also note how, once you have heavy air (over 20 knots), the pure pointing mode must be modified slightly to power as the increasing windspeed will generate choppy seas.

Figure 7



Cross-cut panel layout. Panels are cut so that shaded area is removed (broadseaming), which gives depth to the sail.

Racing considerations

The racing sailor has to consider three other primary trim factors. They are : twist, angle of entry and vertical distribution of depth. They may sound complex, but they are in fact quite simple.

The Grand Prix racer will tell you that there is a fourth critical factor: exit angle. In this booklet we will avoid discussing exit angle because it's difficult to do anything about the shape of the back third of the sail using only the controls on the boat. That's really a question of entirely re-cutting the sail. The little that can be done to alter exit angle will be mentioned in the third point: vertical distirbution of depth.

Twist is the amount the top third of the sail twists to leeward relative to the bottom. You want more twist in light air and less in heavy; more twist in a choppy sea and less in a smooth sea.

Angle of entry is term which describes the roundness of the front of the sail. A rounder entry—often referred to as a fuller entry—will create greater acceleration, speed and a more forgiving sailing “groove” at the expense of some pointing ability. (figure 8)

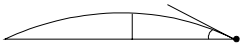
Vertical distribution of depth is carefully considered and manipulated at the design stage. On board, you really only have control over the bottom third of the sail. This is good if you want to point closer to the wind or if you are overpowered. The same effect is achieved in the mainsail by pulling on the outhaul or the flattening reef.

In order to simplify this matter we have created a reference table (below in graph 2). These additional factors must be considered together with either power or point condition, never separately.

Now, let’s examine each of these extra factors.

Figure 8

Round entry (camber forward)



Straight (fine) entry. Entry gets finer as camber moves aft.

SUMMARY OF SPECIFIC TRIM

POWER		POINTING	
REQUIREMENT	**TRIM RESPONSE**	**REQUIREMEN**	**TRIM RESPONSE**
Fuller Sails	1. Ease backstay	**Flatten Sails**	1. Tighten backstay
	2. Ease main outhaul		2. Outhaul on harder
	3. Ease genoa sheet		3. Sheets on harder
	4. Move jib fairlead fwd		4.Move jib fairlead aft
Increased Twist	1. Ease mainsheet	**Decreased Twist**	1.Tighten mainsheet
	2. Traveller up		2. Lower traveller down
			3.Tighten boom vang
Round Entry	1. Tighten halyard or cunningham	**Flatten Entry**	1. Ease halyard
	2. Ease backstay		2.Tighten backstay
Rounder Exit	1. Traveller up (main to centerline)	**Straighter Exit**	1. Traveller down
	2. Ease outhaul		2.Flattener on

Graph 2

Helm Balance

In a final consideration of sail trim, let us review the objective. Be it cruising or racing, the final aim of trimming is optimum performance.

But optimum performance is not necessarily the result of having what looks like perfectly trimmed sails. Rather, the sails are trimmed to complement a number of other factors which altogether produce optimum performance.

How do you gauge the level of your performance when under way? Downwind it is relatively easy because the shortest distance between two points is a straight line. Optimum performance is therefore the attainment of a maximum speed which can be measured by instruments.

When your destination is directly upwind, however, you are attempting to improve your VMG (Velocity Made Good). Although sophisticated electronic systems will give you some guides towards your VMG, the very best guide to over all performance is helm balance—the ability of your boat to maintain a smooth course on its own, without excessive load needed on the wheel to keep the boat from turning. This is optimum because it involves the lease amount of drag from the rudder.

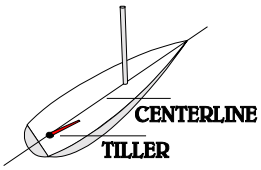
Sail trim must at all times take into consideration helm balance. In general the trim style we've referred to as "power" equates to increased weather helm (boat turning to windward); "pointing" produces less weather helm, and in light wind, can even produce lee helm (boat turning to leeward).

For really good performance on the race course, the trimmers—both main and genoa—must be constantly talking to the helmsman so that each is aware of the helm balance at any time. The helmsman should be aiming for a few degrees of weather helm, but not too much load (turning pressure) on the wheel. (figure 9) The trimmer, especially the mainsail trimmer, should be making sure that this load does not become excessive if there is a sudden gust or change in wind direction. The result could be a seriously over-balanced boat.

Don't forget, if everything looks perfect to you as a trimmer but the helmsman says the helm is unbalanced or you're going slow relative to your competitors, then your sail trim is definitely wrong.

The whole trimming sequence should start with an evaluation of the wind condition; more on to the function required (either pointing or power); then to achievement of sail trim through careful control; and then be completed with an analysis of the resulting balance and efficiency.

Figure 9



The angle of the rudder shuld be 3-4 degrees to windward of the centerline for best performance when sailing upwind.

Basic Rig Tuning (Mast Adjustment)

Say the words “rig tuning” and most sailors assume you’re entering one of the most complicated areas of performance control. This is not the case. For any sailor—except those at the very top levels—rig tuning should be a fairly simple exercise. For the cruising sailor the goal is complete rig stability even in the wildest conditions.

In rig tuning, the racing sailor is seeking a mast that doesn’t bend sideways but bends fore and aft in a controlled manner. Later in the text we will go into one or two adjustments that the racing sailor might make for different conditions, but let’s start with the basics.

First, check that the mast is not leaning to one side. To do this, tighten all the shrouds by hand until they are just firm. Then hoist a tape measure (or use the main halyard itself) to measure down from the mast head (top) to the chain plates (where shrouds attach to deck). Compare one side to the other. If equal, this will tell you the top is in the middle of the boat. If not, adjust the relevant shroud to pull the top over.

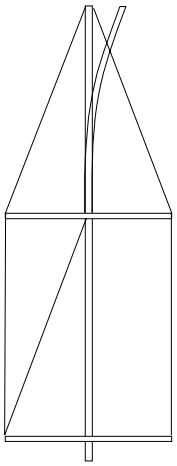
The mast must, of course, be in the middle of the boat at the deck level. On most cruising boats the base position is permanently fixed, but double check just in case. Next, tighten both cap (upper) shrouds a few more turns, then move onto the lower shrouds. We will assume at this point that you have only one set of spreaders. Tighten the lower shrouds until they are just past firm.

At this point you are ready to go sailing. Sheet on the sails upwind in moderate air. Sight up the front face of the mast and look at what is happening to the top. If it appears to be standing up straight, then the cap (upper) shrouds are right. If it is leaning to leeward, the cap shrouds need to be tightened up. Tighten the leeward shroud first, then tack over to “unload” the rigging, and repeat the procedure on the other shroud. (figure 10a)

When the top looks right, move to the back face of the mast again and sight up. If the middle is sagging to leeward, the lower shroud needs to be wound up. If the middle section is being pulled to windward of the top, then the lower shroud needs to be eased off. (figure10b)

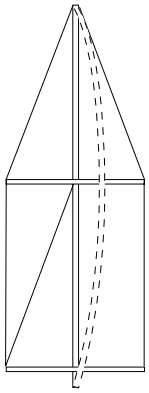
In some configurations, two sets of spreaders are put on by the designer or builder to control the mast more accurately. The rig tuning procedures then get more complicated, but in principle the cap shrouds maintain tip control and the lower shrouds control overall side bend. All other shrouds are used to maintain a straight mast in local areas.

Figure 10a



Use upper shrouds to adjust top of mast.

Figure 10b



Use lower shrouds to adjust middle of mast.

Some Race Adjustments

A racing sailor may find that his competitors are getting an edge by adjusting their rigging for different wind conditions. This particularly applies to fractional rigs which use only one set of swept back spreaders. In such a case, the standard procedure is to tighten the upper shrouds and loosen the lower shrouds for light or moderate wind, and reverse the procedure for heavy winds. A simpler approach is to get a shroud tension for the uppers which you are happy with, and then adjust only the lowers. Ease off some turns in light winds, add on a few in heavy winds.

Potential Problems

The main problem to watch for is excessive side bend or reverse bend fore and aft. We have already discussed side bend and how to deal with it. Once the rigging is set, it is necessary only to watch it carefully in heavy winds. Reverse bend is sometimes found in cruising boats where two sets of lower shrouds are used. When tuning is important to ensure that the forward shroud is a little tighter than the aft lower shroud. This will ensure that any bend in the mast means the middle is going forwards to bow. It is a perfectly safe procedure. Note that any bend where the middle of the mast moves towards the stern is dangerous.

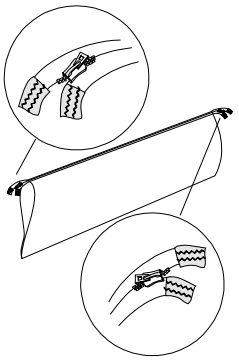
Sail Handling and Neil Pryde Custom Fittings

The following are some of the special Neil Pryde fittings which every boat owner should be familiar with.

Genoa Sausage Bags

Neil Pryde Race and Premier Series sails are supplied with genoa sausage bags as standard. These bags make repacking easier and quicker. The bags have 2 full-length zips on top of the bag which run forward and aft from the clew to the tack. Before you attempt to put the sail in the bag make sure both sliders are at one end of the bag. Then pack the sail inside and slide one zip from one end to the other. Do not take it off the end of the bag. You can then throw the bag around quite freely and it will not come undone. When you wish to hoist, place the bag on the foredeck and run the zipper off at the front. The whole zip will then break open freely and the sail will be in position on the foredeck ready for use. (figure 11)

Figure 11



To close bag, start with zipper car on one track at either end of bag. Connect tracks into zipper and run it to the other end of the bag, leaving it about 70mm from the end of the bag.

To open the bag, run the car the final 70mm to the end of the bag, letting the tracks come undone, opening the bag.

Dousing Sock

The dousing sock can be used with either a asymmetric spinnaker or a regular spinnaker. To hoist the sail, attach the halyard to the head ring on the sail and attach the tack downhaul line to the tack ring. It should then be passed through a turning block on the deck near the bow, and then to a cleat or winch somewhere near the cockpit. The tack will initially fly approximately five feet above the deck, so allow this amount of slack in the line.

Before hoisting, bear away onto a square run, then pull up the spinnaker in its dousing sock behind the mainsail. In this position it is not being subjected to much wind, and is easy to keep under control during hoisting. Don't forget to attach the sheet before you do so. You will now be sailing on a dead run with the spinnaker nicely under control inside the dousing sock. You then hoist the sock to the mast head using the continuous line system provided. This exposes the sail to the wind so it fills gently with wind.

To drop the spinnaker, bear away onto a run again so the sail is blanketed from the wind, behind the mainsail. Then pull the sock's continuous line system in the opposite direction to pull the sock down form the mast head and over the sail, completely enclosing it. The whole sausage is then lowered by dropping the halyard. Leave the spinnaker in the sock when not in use so it is ready for the next time you want to hoist it.

Parrel Beads

Neil Pryde provides this system for the cruising sailor who wishes to use a cruising asymmetric spinnaker with their genoa in it's furled state.

The Nylon balls are threaded onto a wire strop and the entire system is then wrapped around the furled genoa to form a controlling collar.

The snap shackle at the tack of the spanker is fastened through the eyes at the end of the strop. The whole procedure allows the spinaker to be attached around the forestay for maximum control while still allowing the tack height to be adjusted. (figure 12 on following page)

Tips of the Trade

Over a few years, certain amendments to the basic procedures prove their worth time and again. Below, for you convenience, we've listed a few of our favorites.

Get the jib fairlead right

The tell tales are a good guide for ensuring you have the jib fairlead in the correct position. Sailing upwind in a moderate breeze, sheet the jib on until the leech is 2" from the spreader ends. Gently luff into the eye of the wind and check where on the luff the telltales are breaking first. If the telltales up high stall out firs, then move the lead forward a little; if the telltales at the bottom of the genoa stall first, move the lead back a little. Once you have established this medium position, move the fairlead back a couple of holes in heavy winds and forward a couple in light winds, as previously discussed. (figure 13)

Avoiding broaching

Make sure the spinnaker sheet is always eased as much as possible. When a gust strikes, dumping the spinnaker sheet two feet in a repeated jerking motion will tend to free up the rudder and give the helmsman a few critical seconds of control. At this stage, completely ease the vang allowing the boom to rise and the leech to twist off. This will completely de-power the mainsail and make the boat much easier to sail.

Reefing the mainsail

Jiffy reefing remains the most popular system of shortening sails in strong winds. It is a very reliable system if used properly. Just follow this procedure:

Begin by tightening the topping lift (if you have one; if not, be very careful because the next procedure, if executed incorrectly, can result in the boom falling into the cockpit). Next, drop the main halyard while a crewmember stands by the mast to attach the tack of the sail to the reef point. It is vital that the luff is secured and the halyard pretensioned before you make any attempt to tighten the clew line. Once you have tightened the main halyard and secured it, you can move on to the clew line, pulling it in tight. When this is done, re-tighten the mainsheet so the sail fills. When you have settled down, have a crewmember tie in the reef across the points, especially if you are passage-making or expecting stronger winds.

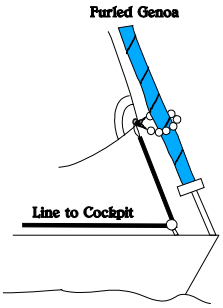
On a racing boat you can leave the loose fold of cloth free if you think you will be taking the reef out shortly. If you do use individual points, don't tighten them up too much. Remember they are only there to tidy things up, not to take any load. AND IMPORTANTLY, remember to untie them when you take the reef out.

Using the telltales

The mainsail has telltales down the leech. They are a good indicator of the amount of twist you have. If you have the correct amount of twist in most conditions, then the top two telltales will fly cleanly backwards approximately half the time. If they are flowing more than half the time then you probably have too much twist. If they are always stalled out, and hidden behind the leeward side of the sail then you haven't got enough twist.

The telltales on the front of the genoa are indicators of your heading relative to sail trim. If you are sailing upwind in moderate winds and the genoa is approximately three inches off the spreader, you can sail by the telltales. If the windward telltale starts to flutter then you are sailing too close to the wind; if the leeward side starts to flutter you are sailing too far off the wind. With correct sheet trim—i.e., approximately three inches off the spreader ends—both sets of telltales will stream aft when your heading is correct.

Figure 12



Parrel beads connect the tack of a free-flying sail to a forestay with a furled genoa on it. Plastic balls roll harmlessly over furled genoa, avoiding chafe and friction.

Sail Care

A sail's worst enemies are chafe and sunlight. You should take every precaution to allay these factors. Sunlight is particularly damaging to Kevlar and mylar sails. Sails should always be covered or stowed below, preferably dry, when not in use.

Chafe should be avoided by taping all pins, be they on the mast or the shrouds. Stanchions and pulpits should also be carefully checked to ensure there are no points of wear. Mylar genoas should be fitted with spreader patches where the leeches hit the spreader ends. In many cases they require similar patches at each stanchion the sail will come in contact with as well. This is absolutely vital, and even on woven cruising sails a sail patch or extensive padding on the spreader end will lead to significantly increase life in you sails.

The sail's other enemies are salt and flogging. Flogging is particularly detrimental to racing sails and can lead to delamination of laminated materials or the destruction of the finish on very hard racing cloth. Do whatever is possible to reduce flogging, although obviously in the minutes leading up to the start of a race some flogging is unavoidable.

Salt accumulation must be dealt with as often as possible. On a dinghy or small daysailor, it should be possible to wash the sails in clean, fresh water at least monthly, while a large cruising sail should be overhauled and washed at the end of each season. Although it can be expensive, it really will add dramatically to your sail's lifespan.

Washing sails

It is important to wash sails very carefully. Warm water and detergent will get off the majority of dirt marks (apart from rust and blood) and a good final rinse down with cold, fresh water is vital. Never use any strong chemicals or bleach.

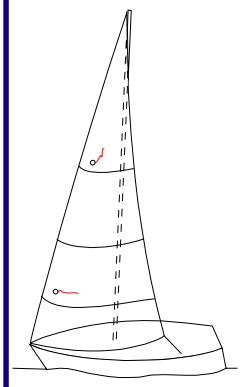
Storing sails

Very firm finished racing fabric should be rolled wherever possible, as folding will lead to creases which will not come out. Laminated sails of Kevlar or mylar can be left stowed in their sausage bags. Cruising sails should always be folded, or at least stowed on the boom (in which case they must always be covered).

While sails can be left wet, it is preferable to dry them whenever possible. This applies particularly to spinnakers. Do not, however, try to dry sails by either letting them hang from the mast, which will cause irreparable damage from flogging, or leave them exposed to bright sunlight, which will ten to make the cloth very brittle. Spinnakers are particularly sensitive to sunshine.

All sails can be subject to mildew if the right conditions exsist. These include, moisture, lack of light and a food source. A dry sail is your best bet against the possibility of mold and mildew.

Figure 13



If top telltale stalls first, fairlead is too far back. If bottom telltale stalls first, fairlead is too far forward.

Warranty

Your new Neil Pryde sail come complete with a two year guarantee. In your owner's kit is a Customer Service Questionnaire and warranty card. You should fill this out and return this back to our International Design and Sales office. We will then register your purchase. We have a very thorough system for tracking design manufacturing details against your registration number. Our warranty covers workmanship and materials under normal use. We reserve the right to withdraw warranty if we feel the sail has been abused.

Satisfaction Guaranteed

At Neil Pryde Sails we aim to give our customers complete satisfaction, If, after you have used the sail, there is any reason you are at all unhappy, please do not hesitate to contact either you local Neil Pryde sail consultant. or the International Design and Sales office. We guarantee your complaint will be investigated quickly and the appropriate action taken.

Let's Hear from You

The response from our customers is vital if we are to continue to develop the finest sails available. You impression of our company and our products will help us to give you even better products and better service.

Change of Address

Should you change your address, please advise us so that we can continue to inform you of the latest happenings at Neil Pryde.

We wish you good sailing...

Bon voyage!

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