HARKEN *Click here to contact American Rigging Supply, Inc.*

FAQ'S

Jib Reefing & Furling Frequently Asked Questions

SAILS

The Harken Jib Reefing and Furling system is a sail handling device which, for best results, should match your sails. Below are answers to common questions asked about our reefing and furling systems:

Can I use my sails with my new Jib Reefing and Furling System?

Yes, you can modify sails in good condition for a Harken system. Modify sails you use regularly. Make sure to convert at least one genoa and one heavy air sail. If you sail in an area which requires specialty sails such as drifters, convert these too. The Harken system makes changing sails easy.

What modifications must I make to my sails?

Remove the hanks and have a special luff tape added so the sails slide into the foils. You should add sun covers to your most frequently used sails to protect them from ultraviolet damage when furled. You may also need to shorten larger sails slightly, so there is room for the halyard swivel on the headstay above the sail.

What will these conversions cost?

Costs vary, but most sailmakers base prices on luff and leech lengths.

Will my existing sails give me good sail shape while reefed?

A Harken furling system shapes sails when sailing reefed because the tack and head swivels are independent of the foil and drum. This allows the center of the sail to furl before the tack and head. The result is a flatter sail shape which is good for reefed sailing. This shape is not as good as a sail specifically designed for reefing, but much better than a unit without independent tack and head swivels.

What should I look for in a new sail?

Look for a reefing sail designed for a wide range of sailing conditions. There are three features every reefing sail should have: 1. Shaping devices for sailing reefed. 2. Strength to handle reefed sailing loads. 3. Sun protection.

What kind of shaping features should I look for in a reefing sail?

Look for a sail powerful enough to move your boat efficiently in light air and choppy seas, but flat enough to sail reefed in severe conditions. Modern shaping devices allow sailmakers to build sails which work well in winds ranging from five to 40-knots. Today, most sailmakers use foam or rope luff pads. Some use the Aeroluff® system. Ask your sailmaker which shaping device is best for your boat.

What type of strength features should I look for in a reefing sail?

Since reefing sails are used in all wind conditions, your sail should be light enough to set in light air, but strong enough to reef in heavy wind. Sailmakers take various approaches to this challenge, but typically orient the sail cloth to align with the loads. The result is a sail with vertical or radial panels, or some variation such as a miter-cut sail. Many sailmakers use heavier cloth for panels closest to the leech. On vertical and radial sails, the cloth usually increases in weight and strength near the leech. Some sailmakers use multiple layers of cloth near the leech. This means when you reef, you sail on heavy sailcloth, but the overall weight of the genoa is still light enough to draw efficiently in light to moderate air.

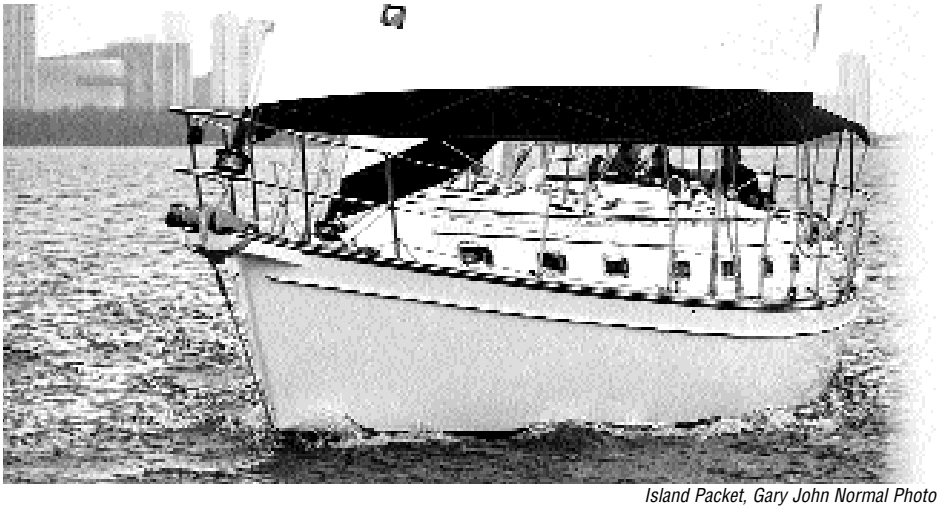
What size genoa should I use as my primary reefing sail?

This depends on your boat and your normal sailing conditions. Most boats find a 150% genoa ideal. But if you sail in a windy area, you may want to use a 125% genoa and in a light air area, a larger genoa may be ideal. Discuss sail size with your sailmaker.

Are furling sails designed differently than regular sails?

Sailmakers cut furling sails differently because of the wide range of wind conditions in which they're used. Since the advent of shaping devices, these differences are usually minor. Most design furling sails with a high clew to give the lower part of the sail a better wrap

Foam Padded Luff Furling Sail



Island Packet, Gary John Normal Photo

around the foils, as well as improve visibility under the sail. We like a sail with a moderately low clew because the sail performs more efficiently. Since the tack of the sail is raised off the deck, you'll have good visibility under the genoa.

What's the best way to protect my sail from the sun?

Normal sailcloth is destroyed by prolonged exposure to ultraviolet rays. Any sail left rolled on the headstay needs protection. Some sailmakers use UV-proof sailcloth. This cloth can be used on the genoa foot and leech panels without adding extra weight. Most sailmakers prefer Acrilan-type covers – the same material used for mainsail covers – sewn on the sail leech and foot. Others use a long sock-like cover over a furled sail. The advantages to this cover are you don't add weight to your genoa, and you can cover any sail you furl. The disadvantages are raising the cover on a spare halyard while fastening twist snaps, or a long zipper. These covers also flog in a breeze.

I've heard you really can't reef a sail, is that true?

You can reef sails using a Harken system. If you reef a regular sail your sail shape will be fair. You will also have to choose which sail to set. None will be perfect for conditions. With a specialized reefing sail, you can sail through a wind range of 5 to 40 knots and maintain good sail shape. Shape can also be adjusted by an increase or decrease in halyard tension and by changing lead block position.

If reefing is so great, why do I need more than one jib?

Experienced seamen never sail without a heavy air jib because even the best reefing sail can be damaged. In a blow, you should change to a heavy air reefable sail before leaving the harbor. A storm jib is vital for offshore passages, because of the possibility of hurricane-type weather. On the other hand, if you live in a light air area, sailing will be a lot more fun with a light air sail.

Can I change sails with my Harken Jib Reefing and Furling system?

Easily. Because you raise sails on your normal jib halyard, changing furling sails is similar to changing a hank-on jib. Simply attach the head and tack of the sail to their shackles, pass the luff tape through the prefeeder and feeder, and raise the sail. The prefeeder and feeder remove wrinkles and minor twists in the sail so you can raise the sails while at the mast or standing in the cockpit. If you plan to make a lot of sail changes, you should order the optional snap shackles for head and tack.

Can I use my cruising spinnaker with a Harken furling system?

Yes. Most cruising spinnakers attach to the headstay with a snap shackle. Ask your sailmaker to replace this shackle with one that works with a furled sail. He will probably use a padded strap, or string of beads to hold the sail near the headstay.

Can I use a racing spinnaker with my Harken system?

A racing spinnaker is not affected by a Harken furling system. In fact, you'll find it easier to handle the chute because you can douse it in the lee of the the genoa and furl the genoa from the cockpit. On some boats, the spinnaker halyard wraps into the genoa as you begin furling. You can prevent this by stowing the spinnaker halyard at the mast base rather than the pulpit. Or you can prevent fouling by flipping the halyard behind the spinnaker. A few boats need a crane installed to place the spinnaker block forward and off to one side of the masthead.

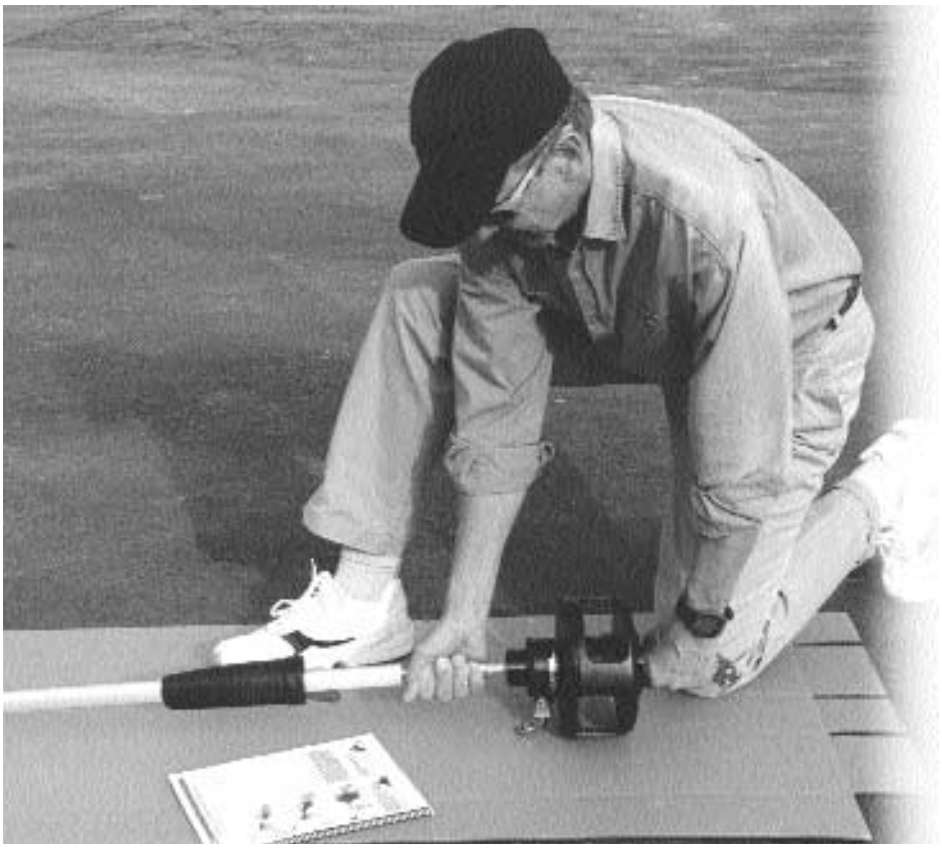
I like to race in serious competition, but I also like the convenience of furling. Can I use my racing sails?

You can use your racing sails on a Harken system. Most racers don't use a #1 genoa because the luff is usually too long and the construction too light. A #2 or smaller genoa should be short enough to use on your furling system, and strong enough to handle reefing.

What brand of sails should I buy?

Choose your sailmaker with the same care as you chose your Harken furling system. Select a sailmaker who offers answers which show understanding of reefing and furling.

Pacific Seacraft 40, Lockwood Photo



The unit design allows easy owner installation, but many people hire a rigger to do the job.

INSTALLATION

Who should install my Harken furling system?

The unit design allows easy owner installation, but many people hire a rigger to do the job.

Can I really install my own furling unit?

If you are handy with simple tools and like working on your boat, you can easily install a furling unit.

I've heard that the instruction manual is pretty long.

The instruction manual describes all types of installations. Your part is probably only a few pages and is in a picture-book format. Simple charts tell you how long to cut wire or foils.

Why do many people use a rigger?

Many people have a rigger install their furling system because they either don't have the time, or don't want to be responsible for the installation. Professional riggers are usually very good. They have experience working in a bosun's chair, and specialized equipment such as swaging machines. If you don't want to install your furling unit, your dealer can recommend a rigger.

How do I install a Harken Jib Reefing system?

First, you remove the headstay from the boat. Depending on the type of headstay you have, and the kind of terminals you want to use, you may need a rigger to alter the headstay. Next, you will build

Swaging machine.

the foils and assemble the furling components on the dock next to the boat. Finally, you will attach the furling unit to the boat, tension the headstay, run the furling line to the cockpit, and check your sails for fit.

Why does the headstay need altering?

Normally a headstay turnbuckle supports the mast with loads running vertically along the length of the turnbuckle. The tack of a furling sail attaches above the drum of the unit so sideloads, instead of vertical loads, are placed on the turnbuckle. The Harken furling turnbuckle is engineered to handle side loads. To convert your headstay, the existing turnbuckle is cut off and a fitting that mates with the turnbuckle on the Harken system is connected. If you don't have a turnbuckle, the lower terminal on the headstay will be replaced with a stud compatible with the unit.

Norseman/Sta-Lok fitting being assembled.

What type of headstay terminal mates with the Harken unit?

Most people use a swage fitting because it is easy and can be preassembled before the installation. To preassemble, a swage fitting must be pressed onto the wire with a swaging machine. If you are installing your unit, take the wire to a rigger and have the fitting attached. If there is no swaging machine in your area, coil the wire and ship it to a rigger.

Do I have to use a swage fitting?

No. You can also use a Norseman® or Sta-Lok® fitting. If you have a rod headstay, you will use a special rod fitting.

Why would I want to use a Norseman or Sta-Lok fitting?

Because you don't need a special machine and can attach these fittings to the wire yourself. Some people feel these fittings are the better choice when sailing in tropical saltwater. They are not as susceptible to stress corrosion as swage fittings and can be removed for inspection.

Rod terminal.

What if I have a rod headstay?

A rod headstay needs to be cut and a special "nosepiece" placed on the rod. This "nosepiece" assembles into the stud which mates with the unit. Because the "nosepiece" is "coldheaded" to the

rod, the job requires a rod heading machine – equipment not every rigger has. You may have to send your rod to a rigger or mastmaker who specializes in this. Because rod is less flexible than wire it must be wound in a very large coil and trucked to the service center.

Working with a rod headstay sounds difficult. Should I replace it with wire?

The only difficult part of a rod installation is altering the rod. Everything else is easy. Rod is perfect as a furling headstay: it has a smooth surface for less friction between the rod and the foils. It stretches less than wire, so it's easier to keep the headstay tight. Rod headstays are also thought to be more resistant to stress corrosion than wire headstays.

What's the next step?

Stretch the headstay out on the dock near the boat, build the foils, and attach the principle components like the drum and halyard swivel.

How do I assemble the foil?

The foil is built of seven-foot extrusions, a length chosen for easy shipping, and assembled with a series of connector pieces placed on the wire before the headstay terminal is installed. Foils are joined with a triple interlock system. The outside shape of the connector pieces matches the inside shape of the foils. This interlocking shape provides the unit's torsional strength. Since these parts slip together, there are gaps which allow play in the joints. To remove play and make a structural assembly, an adhesive is placed on the connectors to stabilize the foils. It's just like gluing an airplane together. To hold the assembly in alignment while curing and to provide a failsafe backup, the joint is secured with screws.

Foils are joined with a triple interlock system.

Some of your competitors use joints that snap together with spring pins, or use screws or pop rivets. Why is your joint assembly so complicated?

This joint is not complicated to put together. Frankly, we would rather spend an extra ten minutes during installation and have the joint last for years than save assembly time by using a cute gimmick for a connector.

How do I match the length of the furling system to the length of my headstay?

You match foil and headstay length by using the correct number of foils and by cutting the top foil to length. First, measure the length of your headstay while it's on the ground. Simple charts in the instruction manual will tell you how many foils to use and the length.

After headstay assembly, what's left?

After building the headstay foil, attach the main components. This includes, slipping the halyard swivel onto the foil, assembling the feeder, and screwing the drum assembly onto the headstay stud. These parts are mostly pre-assembled – you don't even add the shackles – so it only takes a few minutes.

Ideal halyard angle.

Now I'm almost finished?

Not exactly. After you assemble the furling unit, the most important stage of the installation is still ahead: fitting the unit to the boat, routing the furling line to the cockpit, and making sure the sails fit the unit.

How do I fit the unit to the boat?

Raise the unit, attach it to the masthead and stem and tension the headstay using the integral turnbuckle. Lock and close the turnbuckle. Tune the rig for sailing.

How do I lead the furling line to the cockpit?

Route the line from the furling drum to the cockpit so it does not interfere with other lines, does not obstruct the deck, and has fair leads. Many people attach blocks to the lifeline stanchions. This works well if the stanchions are located in the correct place. Place the first block so the line has a fair entrance to the drum, and the last block so you can pull the furling line from the cockpit. Position the blocks in between to keep the furling line off the side deck. Sometimes you can't use stanchion mount blocks, but will have to bolt blocks to the deck. Plan the line route before deciding which attachment method to use.

How do I fit the sails to the boat?

The halyard swivel must be close to the top of the foils. If your sail is short, add a wire pendant to make it longer.

What else do I need to do?

Raise your sails and examine the angle between the headstay and the jib halyard. Ideally, the halyard will pull slightly to the rear. This prevents the halyard from wrapping around the headstay and jamming the furling unit. If the halyard does not pull to the rear, a halyard restrainer (a block mounted on the face of the spar to induce a slight pull to the rear) will prevent halyard wraps.

Why don't you use a restrainer with every installation?

A restrainer requires sails cut a little shorter on the hoist, so we try not to use them. A restrainer also traps your halyard, so it is not easy to use for full hoist racing sails. Fortunately, the bearings in a Harken furling system are very free rolling and halyard restrainers are seldom required.

How long does installation take?

The time it takes to remove the headstay from the boat, measure the length, cut the wire and attach the new terminal depends on the accessibility of a swaging, or rod heading machine. But even if you have a swaging machine at the boat, this stage takes about an hour. It takes two people to remove the headstay. The assembly of the foil and main components take the average owner less than an hour. Installation of the unit, routing the furling line to the cockpit, and checking the sails and halyard lead takes two to three hours. To refit the headstay to the masthead also requires two people. Times vary, but most riggers need six hours for an installation and bill accordingly. Discuss installation charges with your rigger before he installs the unit.

What do I do if I have trouble?

You can check the instruction manual's troubleshooting guide. Your dealer can also provide answers. Finally, Harken will be happy to help you with any problems.

Billy Black Photo

RACING

Can I race with a Harken Jib Reefing and Furling system?

Yes. The foil is aerodynamic and the aft-facing twin-grooves allow fast sail changes. The built-in prefeeder lets you raise the sails without crew guiding them into the foil. You can convert your furling unit to racing mode in just ten minutes.

Is the Harken furling system also the ultimate racing foil?

It is a wonderful system for the sailor who wants to furl and reef while racing. But it isn't the ultimate racing foil. The foil on a furling system must be larger, and heavier than a pure racing foil because it must handle high torque reefing loads. The Harken system also incorporates a specialized furling turnbuckle into the lower assembly. So even when converted to the racing mode, you have a "turnbuckle" assembly on the bow. Conversely, a pure racing foil only needs to support the luff of the sail.

Can I race competitively with a Harken system?

If you race at a club or regional level, you will be competitive with a Harken system. We've even had boats with Harken furling systems win their divisions in major events such as Block Island Race Week. However, If you plan on racing in the Admiral's Cup, buy a pure racing foil!

How do I convert to racing?

Remove the drum and basket so you can tack your sails on the deck. Then remove the halyard swivel from the foil above the feeder so you can make racing sail changes.

Can I race with the drum and swivel on the system?

A lot of people sail club races with the furling drum and swivel in place. They reef when the wind comes up and furl when they set the spinnaker. If you race more seriously, you'll want to tack your sails to the deck for extra sail area and to take advantage of a deck sweeper sail. You'll also want to remove the swivel so the genoa extends the length of the headstay and you can use the second groove for racing sail changes.

Some people remove the swivel and leave the drum in place, tack the sails on the deck and ignore the minor sail distortion caused by the basket.

How do I remove the drum and lineguard?

The drum and lineguard are split, so you simply remove some screws and the drum and basket come off the headstay.

How do I remove the halyard swivel from the foils

To clear the foils for a racing sail change, open the hinged feeder and lower the halyard swivel until it rides above the torque tube.

People usually do not completely remove the swivel from the headstay, but lower it below the feeder so they can use both grooves for racing sail changes. You can remove the swivel from the headstay, but you must pull the headstay clevis pin. This adds about 20 minutes to the process.

Does the Harken system affect the use of the spinnaker?

When racing, the system has no effect on flying the spinnaker. When cruising you may find you can't leave the spinnaker halyard on the pulpit when furling because it sometimes rolls up with the sail. Most people clear the halyard by flipping it behind the spreaders.

Will the spinnaker pole damage the foil?

It's possible, but unlikely. The Harken luff extrusion is tough and can take the normal abuse you would expect while racing. If you damage a foil, you can replace a single section. This takes several hours.

Can I reef and furl my racing genoas?

Your lighter genoas can't handle reefing loads properly, and may be too long to fit on the system. Most people use #2 or smaller genoas for reefing. The halyard swivel must be within a few inches of the top of the foil, so shorter sails may need a pendant made to ensure the swivel is at the correct height. Check length before you sail with the unit.

Can Mylar® and Mylar/Kevlar® sails be used on a Harken system?

In racing mode you can use any sails. Most people avoid furling and reefing a Kevlar sail to protect the sail.

Can I change sails with the furling drum and swivel on the system?

It's easy to change sails in the furling mode. Since the first sail is carried aloft with the halyard swivel, you must drop it before you raise the second sail. This is just like changing a hank-on a jib.

Racing sailors usually change sails more often because they usually own several headsails and appreciate the difference a specialty sail can make. Racing sailors should order the optional snap shackles for the tack and head of the furling unit.

Billy Black Photo

Should I lubricate my foils?

Although it's not usually needed, spray foil grooves with a dry spray lubricant such as McLube® to help sails slip through the foils more easily. Many sailors spray the leading edge of their sails so they slip past each other more smoothly during sail changes.

LIVING WITH ROLLER FURLING

When you think about a jib furling system, chances are you focus on the ability to reef headsails from the cockpit. That's the best reason to have a furler, but there are many other benefits that make a furling system a more valuable piece of hardware.

While none of these alone justify the expense of a furling system, they combine to make sailing safer, faster and more satisfying.

Larger Boats with Smaller Crews

Because furlers allow the genoa to be reefed or stowed from the safety of the cockpit without the effort of dragging sails onto the foredeck, they allow a small crew to sail a large boat. There are plenty of corollaries. If a small crew can sail a large boat, then your regular crew can sail a larger one, or your current one can be sailed by a smaller crew. One logical extension – a moderate size boat can be sailed singlehanded. Even if the BOC (a well-known singlehanded race) isn't your idea of a vacation, consider that when a couple goes cruising they spend a lot of time taking turns singlehanding.

Larger Headsails

Without the ability fo reef easily, some sailors choose a relatively small headsail as their primary genoa. A tender boat might be fitted with a 125% #1 genoa because the difficulty of changing down from a 155% genoa at 12 knots doesn't justify the enhanced light air performance. With a good reefing system, however a larger primary genoa can be chosen to allow the boat to sail efficiently in light air.

Obviously, a genoa must be chosen with the prevailing conditions in mind. It will be heavier and smaller if your home port is San Francisco than if you sail on Western Long Island Sound, but the sail can be designed for the lighter end of the wind range because reefing is easy. The philosophy is similar to mainsail design – make it full-sized for light air because you can always reef.

Larger Genoas for Night Sailing

It's been common practice on boats sailing shorthanded to reduce sail at night. The principle is sound. Sail changes at night are more difficult and often require waking the off-watch crew. Also, you can't see weather changes approaching. On the other hand since the wind often drops after sunset using a full-sized genoa frequently means the difference between an enjoyable passage or a tedious slog.

A furling system allows the boat to be sailed efficiently through the night because headsail changes are effortless affairs that don't require help.

Larger Cabins

There are few cruising boats that offer convenient storage for unbagged sails. Headsail changes involve filling a cabin with a sea of wet cloth that cannot be properly stowed until the boat is in a harbor, where the sail can be dried and folded. With a reefing system, the genoa is changed by rolling it on the headstay; there is nothing to stuff down the hatch to fill the cabin.

Flexibility

All-purpose reefing genoas cover the middle of the wind range very well, but there are times when specialty sails are required for enhanced performance. Spinnakers and Gennakers® are easy to set with a furling system. After they are flying, the genoa is rolled out of the way, ready to set before the spinnaker is doused.

Sail reefed for visibility.

Every boat needs a heavy air jib for extreme conditions. Most boats, particularly coastal cruisers, will reef the all-purpose genoa when the wind strengthens, but the heavy air genoa is necessary because it offers efficiency in the upper end of the wind range that an all-purpose genoa cannot. Usually it will be set before the boat leaves the mooring. When the wind is already very high, start with the heavy air jib and reef it if conditions deteriorate.

Better Visibility

Efficient genoas are cut to lie close to the deck and tend to obscure visibility ahead and to leeward. Since most sailing takes place within a few miles of a harbor, visibility can be important for safety and peace of mind. Resist the temptation to permanently reduce sail area by cutting the clew high to gain visibility. If you reef the genoa a couple of turns when you are near a harbor, are sailing at night or approaching an area with navigational hazards, you'll gain visibility but have the additional area later.

Sail More Often

When did you ever hear someone describe their last cruise and not say "we motored more than we sailed." A furling system won't guarantee that you'll always have wind, but it will make it easy to take advantage of what wind there is because there's no labor involved in setting the genoa – the helmsman usually can set the sail without bothering the crew.

Improved Boat-Handling Skills

Most sailors buy sailboats because they enjoy sailing and the skills that the sport demands. Unfortunately, most crucial maneuvers like docking, mooring and anchoring tend to take place under power. A furling system acts like an automatic transmission to make slowing down and stopping much easier and allows you to practice boat-handling skills under sail.

Anchoring and mooring take place upwind so the main can be allowed to luff as the boat is secured, or it can even be pushed out to one side to stop the boat or start it drifting downwind to set an anchor. Reefing the genoa slows the boat to keep it under control.

Sailing off a mooring or anchor is simple with a furling genoa. After you're free, a small portion of the genoa can be released and held aback to force the boat off on the desired tack. A reefed genoa allows the boat to be sailed slowly, but under control, while the anchor is stowed. You may not moor or anchor under sail as standard practice, but a furling genoa makes it much easier and you should develop these skills for the day the engine fails.

Sailing to a dock is more difficult because the final approach is not always upwind and the main cannot always be luffed, but a furling system simplifies the maneuver. The main can be taken down earlier and control maintained with the genoa.

Slowing Down

The ability to reef the genoa means that you can slow a boat easily, but retain the ability to accelerate instantly when conditions change. Two good examples are sailing through congested harbor entrances and making a night approach to a strange harbor.

Reefing slows the boat and increases visibility. Then the rolled genoa is ready to set as you clear the harbor or channel.

There are those wonderful nights when the wind blows true and threatens to deliver you to a strange anchorage before dawn. Reefing allows you to tailor your ETA for a landfall after sunrise. Taking a knot or two off your speed is more pleasant than parking in a seaway waiting for daylight.

Don't let the name jib reefing system limit your imagination. Inventive sailors are sure to find new ways to use them that future generations will take for granted as good seamanship.

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