

# NCSC Guidelines for Rigging and Sailing the Flying Scot

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## SPRING WORK SESSION ACTIVITIES

Boats need care, and there's always something that can be done. This list covers the high spots but if you see something that doesn't look right, ask your boat captain, fleet captain, or any knowledgeable member for assistance.

At the beginning of the first work session, see if there's a "to do" list in the boat box in the basement of the clubhouse. The mast and rigging, centerboard, and sails are cared for by other teams – your responsibility is to get the hull ready for launch.

### *Inventory boat equipment*

The boat box should have the mainsheet, jibsheet, toolbox, laminated local chart, laminated racing card, extra cranks, vang, buckets and bailers.

In the bin you should find the anchor and rode, paddles, tiller, boom crutch, flotation cushions (Type IV PFDs), and spinnaker pole. Check the condition of everything:

- Condition of lines – anchor rode, topping lift, mainsheet, rudder tether, bow pennant, jibsheet. Check for chafe, kinks, mysterious shortenings, and general condition. Centerboard pennant stays on over the winter, but check to see that it's in good condition.
- Re-coil all lines neatly after inspecting them, and stow in the boat box.
- Condition of centerboard pennant. Check for meathooks, cracked or rusting terminals or wire.
- Other equipment – boat hook, spinnaker pole, paddles, tiller, rudder, buckets & bailers, sponges, tool kit, spares, etc.
- Anything else you think of.

All this should be in good condition. If not, repair or replace it.

It's hard to cover all the things to look at and restore in the spring, since some of it depends on how conscientious last year's crew was at setting the boat up and putting it away, and how well it was sailed and maintained during the season, and what got old enough to be "good enough" for a week or a month, but needs to be dealt with for the upcoming season. Here are some memory joggers:

- Check for loose fasteners
- Refinish woodwork
- Inflate the flotation bag.
- Clean & wax the topsides
- Paint the bottom

## LAUNCH DAY

You'll need several people to get the boat from the grass onto the trailer. Load the boat before or after it goes on the trailer, but before it leaves the clubhouse.

- Install the anchor and fasten the bitter end to the boat.. Be sure it's ready for use – stand in the boat and toss it over the side, then make sure the line pays out without tangles or knots. Bring the anchor on board, stow it, coil the line neatly and secure it.
- Lay the centerboard flat on bottom (be careful, it's heavy!).
- Put the boom in the boat
- Install the rudder in its stowage area aft and tie the tether to the ring or padeye.
- Put the rest of the contents of boat box and bin on board. Be sure you have 2 or 3 cranks on board.

Lash the mast, properly padded, to the boat, and take it to the beach for launching.

You will step the mast with the boat ashore, possibly with the trailer attached to the tow vehicle. Try to be sure the boat is level both fore and aft and laterally, and is headed into the wind. Raising the mast becomes much more difficult if the boat is not level and if the wind is from the side. Be sure you can move the rigged boat from where it is to the launch ramp – look UP for obstacles such as overhead wires and branches.

### ***PREPARATION***

Cast off the lashings holding the mast, remove the tie-down bar and chains, clear the cockpit and seats by removing or stowing the boom and any other impedimenta.

With the mast lying in the carrying forks, uncoil the shrouds and jibstay, being exceedingly careful not to kink the cables at the swaged end fittings for the reason that one kink soon will result in broken strands and cable. Make sure the main halyard is shackled so it will be reachable after the mast is up, preferably to the spinnaker pole slide. Now is the time to install the spinnaker halyard if one is to be used. Attach the spar fly to the masthead following the directions on the box.. Free the jib halyard and jib stay for use in raising the mast.

### ***RAISING THE MAST:***

*Do not attempt to raise the mast alone.*

Attach the main shrouds to their respective chain plates. The spinnaker hook should be on the outside. Insert each clevis pin or bolt from the outside in, with the safety pin or nut inside, adjuster plates straddling the chain plate. With any luck the correct attachment position was marked when the boat was put away last fall, but if not, the two most common attachment positions for the adjuster plates are: 1) The middle of the three open holes in the shroud adjuster plates to the top hole in the chain plate, and 2) The bottom hole of the three open holes in the shroud adjuster plates to the bottom hole in the chain plate.

***Stepping a mast with a hinge:***

Slide or lift the mast aft until you can insert the mast hinge pin into the sail track. Slide the mast forward until the mast hinge pin reaches the stop in the sail track. Free the jib stay and halyard. Extend the halyard (the one with the snap shackle) fully and attach about 20 feet of line – this will be used in providing the necessary leverage to accomplish the “tight rig”. Insure that the jib stay is free and clear and the clevis pin and cotter have been removed. One or more people will stand on the ground in front of the boat and help raise the mast by pulling on the extended jib halyard.

One person should get in the boat and walk the mast up in one motion as the person on the ground assists by pulling the extended halyard. The mast hinge pin will guide the butt of the mast onto the step as long as you prevent the mast from rotating side to side. Push forward on the mast against the shrouds. If you push smartly and keep it moving, you will find this not at all tough to do

Someone stationed on the ground at the bow of the boat should be prepared to attach the jib stay to the jib stay extension poking through the bowplate, placing one pair of forks inside the other pair, and inserting the clevis pin and cotter. With the tight rig, it will take a considerable effort on the part of those pulling the halyard. It is not uncommon to think the jib stay is 4” shorter than it needs to be. If this occurs, apply more tension to the halyard to rake the mast forward until the stay reaches the extension. Once the cotter has been secured, the halyard may be released.

## **MAST AND SHROUD TENSION**

### *The Tight Rig*

To measure the aft rake of your mast, hoist a tape measure on the main halyard and hold it tight at the intersection of the transom and the rear deck.

After the mast has been raised, hook your jib halyard to your bow plate (and perhaps tie your spinnaker halyard on the bow plate as well as a safety). Back off the jib halyard and with a Loos Tension Gauge, check the forestay tension. It should be very close to 240 pounds. If less, too much headstay sag will develop in medium winds, if more, the mast may be pushed out of column in heavier winds. We suggest setting your rig up with the rig tension between 220 and 250 pounds.

The rake measurement, measured with a tape hooked on the main halyard to the joint of the transom on the back deck, should be very close to 28’4”- 28’5”. Farther forward than 28’5 ½” will result in too “light” of a helm and the need to heel the boat more to keep in balanced. More rake than 28’3” will create too much weather helm.

## **NO MORE TOGGLE**

It is no longer necessary to use the toggle to set your rake, jib luff tension or slop in the rig. In fact, you will never ever need to look at it again; your forestay will take the entire rig load while your jib halyard will simply adjust cloth tension.

## **BOOM**

To install the boom, first put the boom crotch in place in the center mounting (the side mounting generally is used only when the boat has to be steered), set the boom in place, slide the goose-neck slide down over the short track on the mast until the button snaps into the locking hole with the

button on the bottom. The boom can be roller reefed by pulling it aft to free the lock in the gooseneck.

### **BOOM VANG:**

The slide, attached to the double block, goes onto the track on the under side of the boom. The hauling end of the line feeds out through the hole in the port mast stanchion and up onto the cleat. The purpose of the vang is to keep the boom from riding up in strong winds. It tightens as the boom goes out. Since its tension is not needed when the boat is closehauled, we suggest merely taking up the slack at this time because there then will be enough tension when the boom goes out. If it should be set up hard when the boat is closehauled, it would develop enough tension when the boom goes far out to tear things apart, even to break the mast or boom. It must be used with discretion, with just enough tension to prevent the boom from riding up.

### **CENTERBOARD**

The centerboard is installed after the boat is launched. It cannot be installed while the boat is on the trailer. This is a job for two people since it weighs about 100 pounds. Pass a length of line under the sheave on top, and each person takes one end. It is inserted down through the top of the trunk with the board inclined aft as it hangs from the rollers. When it is in place, suspended from the rollers, run the stainless cable over the top and down under the sheave in the board, and shackle it to the deck strap located on the trunk between the stanchions. The hand line should lead aft from the bottom of the winch. As you start hoisting, put some hand tension on the cable so that it has a tight and clear wind on the shaft. If you run out of line before the board is all the way up, add enough turns around the winch drum to accomplish the purpose. Oil the shaft bearings occasionally, using the oil provided. When lowering the board, keep the hand line in alignment with the winch, and always cleat the line, once around the double jam cleat, to keep some tension on the cable.

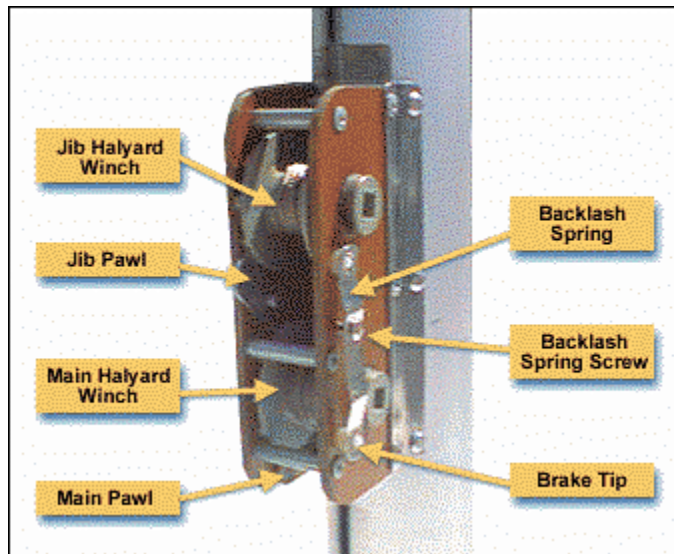
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## PREPARING TO SAIL

Rig the Flying Scot always from the starboard side and follow a routine such as the following:

- Remove the cockpit cover. Flip one side over the other so it's inside out, and roll it up from aft forward and stow it. Stow life jackets and other gear, attach the boom vang, and lower the centerboard to help minimize rolling. Check to be sure all boat gear is present:
- Under the aft deck: rudder
- In the rack under the seat: paddles (2), tiller, boat hook, spinnaker pole, flotation cushion (Type IV PFD)
- Under the foredeck: anchor and rode, buckets and bailers, tool set, local chart, at least two cranks (one to use and a spare), jib sheets, spare line, odds and ends.
- Loosen the mainsheet, uncleat and uncoil the line, lift the boom out of the boom crutch and stow the crutch under the seat.
- Ship the rudder. The upper rudder fitting must be ABOVE the upper transom fitting; insert the pin partway to hold them in alignment. Align the lower fittings so the rudder fitting is BELOW the transom fitting, and insert the pin the rest of the way. If properly installed, the rudder cannot move either up or down. Insert the tiller into the rudder head and secure it with the keeper pin. (Note: many prefer to install the tiller as a last step after the mainsail has been hoisted.). Resist the temptation to remove the tether: the rudder won't float if you drop it.
- The single becket block on the mainsheet is permanently shackled to the swivel on the end of the boom. After the rudder has been shipped, the single block is secured to the bail on top of the rudder. If there's a shackle on the bail, attach the main sheet to that – it helps keep the sheet from tangling when gybing. (Leave tiller until later.)
- Remove the mainsail from its bag, gather the foot of the sail and put it on the bow deck (unless wind is too strong), start the clew into the groove in the boom with the bolt rope running between the horns of the tack fitting; standing on the seat, walk the sail aft as your crew guides it into the groove. Before the foot is fully back, insert the lower end of the luff in the mast track and insert the tack pin. If the boat has a cunningham, attach it now. Pass the outhaul line through the outhaul block, back through the cringle, through the block a second time, pull out the sail until it is 1-2 inches from the block and belay it. The battens are sewn in. After making sure that the vang and the main sheet have slack, and that the main halyard isn't tangled, attach the main halyard and start the mainsail into its groove in the mast, but don't hoist it yet.
- The jibstay and the halyard are easy to confuse. Identify the jibstay (the one without the snap shackle) and attach the jib to it, starting at the lowest snap and working toward the head. Ease the jib halyard at the winch, release the snap shackle, check that the halyard runs fair, and attach it to the head. Finally, attach the tack to the tack shackle. If you do it this way, the halyard won't escape your grasp. Rig the jib sheet by running one end on either side of the mast with the ends of the sheet inside the shrouds, through the track blocks and ratchet blocks and bullseye fairleads on top of the centerboard trunk. Tie a figure eight knot near the end of each. Use the Brummel hooks (sister hooks) spliced into the jibsheet and the clew of the jib to attach the sheet. Take up the slack in the jib halyard but don't hoist the sail yet.

- Raise the sails from aft forward. Use the crank in the lower winch to hoist the mainsail until the headboard is about 2-3 inches from the masthead sheave. Do not try to hoist the sail as hard as you can. There must always be space between the headboard and the sheave or you soon will break the halyard. If the sail is too high, lower it a few notches as needed. Use the crank in the upper winch to hoist the jib until the bow toggle (under the foredeck) is level.



(See Sec. 7 & 9).

- Insert tiller and use the cotter pin to secure it. Cast off.

**HALYARD WINCHES:** The halyard winches should always be operated from the starboard side. They should be lubricated periodically, as needed, with just a touch of Lubriplate or other white grease in each of the bearings. They should turn freely, but should not backlash when you drop the sails. If they squeak or squawk they need lubrication. If they backlash, tighten the flat spring as needed. If the mainsail does not drop freely, loosen the spring.

**WINCH CRANKS:** These are purposely made of aluminum alloy to serve as shear pins. They are plenty strong for proper use, but will break if you try to use too much force. If you break one, see what is wrong. It might be that the halyard is fouled on something, or perhaps the vang is secured and keeping the boom from rising. Be sure to insert the crank as far as it will go. When you come to the final tension, do not lean against the end of the crank handle if it happens to be in an awkward position. If necessary, lock the winch, reinstall the crank so that your thumb can be against the hub, and rotate the winch as needed. You never should have to exert enough force to break a crank. Never leave the crank in the winch. They do not float. And always carry at least one spare in the locker.

## SAILING TIPS

### MAIN SHEET TRIM

The main should be trimmed so that the upper batten is parallel to the boom (sighted from under the boom looking up the sail). In lighter winds, or when sailing in a great deal of chop, it is helpful to

ease the mainsheet slightly so the upper batten is angled out approximately 5°. In drifting conditions, when the boom is hanging on the leech and hooking the upper batten, set the upper batten parallel to centerline of the boat. Only in drifting conditions should the main be trimmed this way, as this will place the boom approximately 2' (61 cm) off from centerline.

In very heavy winds, with the help of the boom vang, set the mainsheet tension so the upper batten is again angled outboard approximately 5° from parallel to the boom. It is important, in winds above 15 mph, to apply heavy boom vang tension so the mast and boom will bend correctly to sufficiently flatten the sail. It has been found that the boom may be deflected from the straight line nearly 3 to 4" (7.6 to 10.2 cm) in heavy breezes. This heavy boom vang tension will help make playing the main much easier, as the sheet will not have quite as much strain as it does in even moderate winds.

NOTE: Make sure when rounding the windward mark that the boom vang is eased off so more strain is not applied to the mast and boom!

### **MAIN SAIL STEERS THE FLYING SCOT**

The mainsail is very important in steering the Scot. The skipper should always hold his mainsheet and be ready to ease it quickly when he feels an increase in his weather helm (i.e. load on the helm acts as a brake). When the boat is tracking well again, and the helm is balanced, he should slowly trim the mainsail back in.

### **CUNNINGHAM / MAIN HALYARD TENSION**

Pull the Cunningham just tight enough to leave a hint of horizontal wrinkles off the lower one-third luff of the sail. With the North Flying Scot main, it is better to err towards being too loose than being too tight. Of course, in a breeze it will require much more Cunningham tension to smooth the sail, but there should still be a hint of horizontal wrinkles.

It is important to start with the proper main halyard tension at the dock. There is a definite tendency to over-tension the halyard and pull all the wrinkles from the luff before any Cunningham is applied. This is especially important to avoid in lighter winds.

### **BOOM VANG**

Downwind, trim the vang just hard enough to keep the boom down and the leech supported on the main. Still use the guide of setting the upper batten parallel to the boom. When the boom vang is trimmed correctly on a beam to broad reach, the telltale should fly straight off the leech at the upper batten. There is a tendency for the boom vang to be pulled on too hard when sailing downwind. This will over-tighten the upper leech and, due to the side bend of the mast, over flatten the mainsail.

As previously mentioned, upwind in heavy air, the vang is set hard enough to restrict the upward movement of the boom to just allow the upper batten to ease no more than 5° to 10° past parallel to the boom. In these conditions, as mentioned, the mainsheet simply acts as a traveler and allows the boom to move mostly sideways and outboard. With each wind velocity the vang tension applied depends primarily on crew weight. Lighter weight crews will tension the vang earlier due to becoming overpowered earlier, while heavier crews might not need boom vang tension until much heavier winds.

### **OUTHHAUL**



Your North mainsail is constructed with a shelf foot so it is possible to make the lower half of the main deeper when sailing downwind. Usually the outhaul is tight enough upwind so that there will be only a 1 ½” to 2” (3.8 cm to 5.1 cm) gap between the side of the boom and the shelf-foot seam in the middle of the foot. In heavy winds, pull the outhaul tighter to close the shelf and flatten the main. In extremely heavy winds, above 18 mph, the outhaul should be tight enough so there is a hard crease from the tack to the clew. In lighter winds or choppy seas, ease the outhaul until the gap between the side of the boom and the shelf seam is 2 ½” (6.8 cm). When going downwind, ease the outhaul until the gap is a full 4” (12.7 cm) and the shelf is open.

## **JIB TRIM**

### **JIB LUFF TENSION**

As wind velocity changes, it is necessary to change the luff tension on your jib (such as the Cunningham on the main). Simply crank your jib up tight enough to barely leave a hint of wrinkles along the luff. These will appear as “crow’s feet” off each snap. Never leave the halyard tension loose enough so that there is “sag” between each snap, but only crank the halyard so tight that the crow’s feet are removed in heavy winds when overpowered. There is no need to adjust the lashing at the head of your jib if you use the above suggestions.

### **JIB LEAD POSITION**

In most conditions, keep the leads maximum forward on the tracks. In medium winds (above 8-12 mph) move the leads back approximately 2” (5.1 cm) to flatten the lower part of the jib and free up the upper leech. In heavy winds when overpowered, move the leads all the way aft on the tracks.

### **JIB SHEET TRIM - WINDWARD SHEET TRIM**

Proper leeward and windward jib sheet tensions are important for top upwind performance in the Flying Scot. The windward sheet is tensioned upwind in order to pull the clew of the jib to windward of the jib lead track. This will help narrow the slot (since the Scot’s jib slot is normally too wide) and make the lower sections of the jib more powerful.



To set up the trim for upwind sailing pull the leeward sheet until the foot of the jib is just smooth and not curled. The foot should be relatively flat and not baggy, but not so flat that the very bottom of the sail begins to curl up. Next pull in the windward sheet until the clew of the jib falls directly over the middle of the seat. On our boat we actually place a tape mark in the middle of the seat to make it easier to eyeball the position of the clew.

With the weather sheet trimmed the jib foot will become much fuller which will increase the boat's power and ability to accelerate. Once the boat is up to top speed pull the leeward sheet again until the foot is flatter and the upper batten is angled straight back nearly parallel to the center line of the boat.

When hitting chop or sailing into a lull, ease only the leeward sheet so that the top batten angles outboard 15 to 20 degrees. When back up to speed, pull the leeward sheet back in until the top batten is nearly straight back.

Throughout this acceleration process the weather sheet is never eased unless the boat is sailing in very light, nearly drifting conditions. In this condition the boat will be nearly "close reached" around the course and the weather sheet, therefore will not be applied.

#### ATTACHING JIB SHEETS

It is best to tie the jib sheet onto the jib with an overhand knot so that the knot is 6" away from the clew of the jib. This is important so that the pull from the windward sheet is primarily across instead of directly down. With the knot 6" away from the clew the windward sheet attaches to the jib lower and therefore pulls more sideways.

#### CENTERBOARD

Keep the board all the way down when sailing upwind in all conditions. In very heavy winds you may find that the helm balances even better when the board is rolled back from the bottom of the hump 1" to 2".

Downwind remember to pull the board up to match the helm balance. On a reach it is not unusual for the board to be as high as  $\frac{3}{4}$  of the way up when it is breezy. Remember that the only goal is to balance the helm when sailing off the wind and pulling the board up until the boat will almost sail itself when nearly flat will greatly help to improve the boat's speed.

#### SPINNAKER TRIM

Always sail your North spinnaker with a 6" to 12" (15.2 to 30.5) curl in the luff. Careful concentration is necessary. Use short, smooth, in and out motions on the sheet to keep the spinnaker trimmed correctly. Try to keep from jerking the sheet when the spinnaker begins to collapse! Keep the clews even at all times through adjustments to your topping lift (pole). In some conditions it is difficult to see the leeward clew behind the mainsail, so you can use another guide, which is to adjust the pole height so that the center vertical seam in the spinnaker is parallel to the mast. When running, in nearly all conditions, we suggest sitting fairly far aft in the Flying Scot. It is not unusual for the skipper to be up against the aft side of the cockpit with his crew just in front of him, especially when windy.

#### SHIM YOUR BOARD

On Scot's older than 6-7 years it may be helpful to shim the centerboard trunk for top upwind speed. When sailing through chop an unshimmed board can slop around and become quite inefficient. By gluing fiberglass battens in the trunk at the very bottom edge where the bottom meets the inside of the trunk, the board can be shimmed tightly so that it cannot move sideways when fully down.

Some Scot sailors have had success in using an epoxy mixture or marine tex as a filler to shim the board. With the boat hanging vertical on the hoist with the gasket removed and the board dropped, wrap the board where it exits the trunk with wax paper. Apply a thick mixture of the epoxy into the trunk forward of the middle of the the board and allow to cure. The tightest possible fit ever!

## CREW WEIGHT

While the Flying Scot will perform with an extremely wide range of crew weights, we suggest trying to sail with as close to 360 to 450 lb. as possible.

## STEERING THE TIGHT RIG JIBS

In light to medium winds, this jib will steer just as any other loose rig standard style jib. When pointing high, allow the weather telltale to stall, but never sail lower than the leeward telltale on the luff of the jib-streaming straight aft. When accelerating, both telltales should be straight aft.

However, in breeze, when the boat's overpowered, it will be unusual, unless sailing through very large waves, that the weather telltale will **not** show a stall. In fact, in very breezy conditions, the luff of the jib will actually be breaking as far back as 12 inches. With the tight rig jib the groove is quite wide and when trying to accelerate, both telltales will nearly be straight aft, and when sailing in point mode and when trying to depower, again, the luff of the jib will be actually breaking.

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## WHAT TO DO IF YOU CAPSIZE

The article below was written by the designer, and emphasizes that the Flying Scot is difficult to capsize, and that capsize can be prevented. It is reprinted exactly as he wrote it. The clue to a very real problem is the phrase "...she ... may - turn turtle and fill. She will not sink, held up by her buoyancy apparatus, but rescue then requires outside assistance."

If the boat is capsized and is lying on its side, you should be able to right it, bail, and sail off. The problem occurs if it is "swamped" when righted – floating upright with the gunwales awash and filled with water (like a bathtub).

**A swamped Flying Scot floats with the top of the centerboard trunk under water and it is impossible to bail the boat.**

The factory offers some suggestions for dealing with a swamped boat:

- Hail a powerboat and get a tow back to shore.
- Remove the big port in the transom, hail a powerboat, and tow the boat dry.
- Sail the swamped boat back to shore. It's slow and the boat handles badly, but they claim it can be done.

The best way to prevent this is to avoid capsize! If you do get knocked down, act quickly to right the boat. Try to keep the masthead floating – have a strong swimmer (wearing a PFD) take a flotation cushion out to the masthead to help it stay afloat. Then get the boat righted before it takes on too much water.

### ***CAPSIZING THE FLYING SCOT***

*This is an article by Gordon "Sandy" Douglas, designer of the Flying Scot and the Thistle*

Your Flying Scot is one of the most stable and able of small boats, so much so that you may develop the feeling that she cannot and will not capsize. You may find, on trying to make her capsize, that you are unable to do so. You may find, on a breezy day, that you can make her heel only enough to lift the rudder out of water, after which she will round up into the wind. This is as it should be.

However: remember that the Flying Scot is a centerboarder and that in extreme wind conditions all centerboarders can and will capsize. Remember that the force of the wind increases according to the square of the velocity, that a 30-mile wind has four times the force of a 15-mile wind, not double, and that a 60-mile wind has sixteen times the force! This is more than any small boat can be expected to take, and the smart, experienced sailor will head for shore when he sees a squall coming.

The cockpit of the Flying Scot is designed to prevent her from filling if she does capsize; and after capsizing she can be righted without taking in water. It sounds simple, and it is, but it requires proper handling by her skipper and crew. Without proper handling, in common with all other centerboarders, she can - and may - turn turtle and fill. She will not sink, held up by her buoyancy apparatus, but rescue then requires outside assistance.

In calm water the Flying Scot will float almost indefinitely on her side with the tip of her buoyant mast in the water. When the mast is horizontal she is in balance, and as soon as the mast comes above horizontal she will come back onto her feet. Obviously, rescue involves getting the top of the mast above horizontal, accomplished by having one or more persons standing on the centerboard and pulling the boat back up.

The picture is not quite so rosy when the wind is strong. Then, if she lies broadside with her bottom to the wind, the wind and seas will drive her sideways, the mast and sail will go deeper and deeper until finally she will fill and sink into the water, bottom side up, where she will float indefinitely until she is rescued. Just about all centerboarders will do the same. Unless the water is shallow and the mast sticks into the bottom, the boat can be rolled onto her side and then her bottom by one man, after which her crew can climb aboard and sit in-side the cockpit, wet but safe. To accomplish this, throw a line, such as a jib sheet, across the bottom of the boat. Swim to the other side, grasp the line and pull, standing with the feet on the Scot's flare at the gunwale and leaning against the line. Your weight will depress the side of the boat and the pull on the line will slowly rotate the boat in the water, first onto her side and then onto her bottom. Much better than this, of course, is to prevent the boat from turning turtle and filling. Flying Scots do capsize occasionally, and in most cases are righted through prompt action of skipper and crew. Properly done, this operation does not even mean wetting the feet, and takes only a few seconds. First of all, let's think in terms of not capsizing because in most cases it can be avoided. Needless to say, the crew should be on the weather rail in heavy weather, and sheets should be hand held and not cleated. It is this writer's opinion that the main sheet of a centerboard boat never should be cleated, and that in heavy weather it should not even be lead through a cam cleat or other device on the centerboard trunk. In a hard slam the main sheet cannot be trusted, even when not cleated, to run out through any such fitting fast enough to save the boat the way it can if it comes directly from the end of the boom.

Sail the boat on her bottom. Don't fight the boat. If she wants to luff, let her luff and ease the main sheet before she heels. At her normal 17 degree angle of heel she has 73 degrees to go before she is on her side, whereas at 45 degrees of heel she has only 45 more to go. She is most stable at 17 degrees, and the more she heels the less stable she becomes, so act before she heels. If she still heels, don't fight her, help her by letting out the sails, push on the tiller to help her come up into the wind.

The time may come when, in spite of everything, she is knocked onto her ear by a hard slam, making you wonder if she will come back or go on over. If this happens your every instinct should be to stay on top of the boat, so if this happens, let go of sheets and tiller - giving the boat a chance to save herself - and climb! You and crew should already have been on the rail and it shouldn't take long to get on top if she does go on over. Immediately - repeat, immediately - swing your feet down onto the centerboard (which should always be part way down, especially in heavy weather), lean back and pull! She'll come back up and, as she does, you climb back aboard. But don't wait! Don't dawdle!

If, by any chance you are caught inside the cockpit as she goes over, do not try to hang on to keep your feet dry. Drop into the water. If you try to stay dry in the cockpit with boat on her side your weight, being on the negative side of the center of buoyancy, will only make the boat turn turtle. If someone is on the centerboard, just hang onto the seat and, as the boat comes back up, you will be lifted aboard. If there is no one on top to stand on the centerboard, get to the other, the bottom side, of the boat, reach up and grab the centerboard and pull. Don't take the time to swim around. If you dive under the boat you will come up right below the centerboard. But act! Every second counts!

## **PUTTING A SCOT TO BED**

It has been one of those special days on the Delaware. The winds were fresh and steady with ample sunshine and pleasant temperatures. You have deftly returned your Scot to the mooring (on your first attempt) and are in great anticipation of enjoying your favorite cold beverage that awaits you on shore. Now all you have to do is get there. It is no wonder that the chore of “putting away” the Scot after a day’s sail tends to be done with some inconsistency and the occasional lack of effort. It is important, however, to remember that one of the “Golden Rules” of our Club is to leave the boat in the condition that you would like to find it.

To help bring some level of consistency to the process, the following is a list of “standards” that should be done each and every time a Scot is sailed.

**Cleanliness** - Perhaps one of the most important items is boat cleanliness. Prior to sailing, take a moment to clean any sand from the bilge, thereby reducing the wear and tear not only on the bottom of the boat but any rigging that is close to the bottom. Also be cautious of any tar that sometimes migrates from the shore to the boats via your shoes. No one likes to arrive at their intended sail only to find a dirty boat - please don’t leave it that way!

**Rudder/Tiller** - Remove the tiller from the rudder and stow it on the wire rack under the seat. After unshipping, the rudder should be stowed under the stern deck in the brackets that keep it in place. When properly stowed, there should be adequate space so that the boom crutch will pass through the hole in the aft deck and seat in the socket on the Scot’s bottom. **DO NOT REMOVE THE TETHER** from the rudder.

**Jib Sheet lines and Jib Halyard** - After dropping the jib, remove the jib sheet and neatly coil the line for stowage in the cutty under the fore deck. The jib halyard, once removed from the head of the jib should be reattached to the jib stay (not the mast ring). The jib winch should then be tightened to place a small amount of tension on the halyard.

**Mainsheet** - Once removed from the head of the rudder, the mainsheet shackle should be attached to the ring that also secures the rudder tether. The boom should be resting in the crutch. Be sure to run the sheet outside the yoke of the crutch to minimize chafing. Then, taking the mainsheet from the forward block, the sheet should also run through the shackle (now attached to the ring) and snugged down at the ratchet block. The mainsheet should be looped around the block securing itself in place. The remaining line should be coiled and stowed over the centerboard trunk so that it stays clear of the bilge. If done properly, the mainsheet will provide tension keeping the boom neatly seated in the boom crutch and also provide space necessary for the installation of the cockpit cover.

**Centerboard Pendant and Boom Vang** - The boat should always be moored with the centerboard fully raised. The pendant should be neatly coiled and stowed over the centerboard trunk so that it stays clear of the bilge. The boom vang if left attached to the boom will be in the way of the cockpit cover. Therefore it must be released and stowed neatly. To keep it from getting tangled, extend it fully, hook it over the ring at the aft of the trunk, and take up the slack. Secure excess line so it remains clear of the bilge.

**Lines in general** - On the Scot, because of the cockpit cover, lines are somewhat protected from the elements. Care must be taken, however to insure that all lines are stowed in such a manner that they not only will be under the cover, but incapable of falling into the bilge. Although the cockpit cover will divert a good portion of rain to drains located in the seats a certain amount will naturally find its way to the bilge. By properly stowing the lines out of the bilge they will remain dry and their useful life will be significantly extended.

**Sails** - The most important aspect of properly stowing the sails is to make sure that they are dry before rolling and placing in the sail bag. The tack of the mainsail should be the leading end into the sail bag. This makes the clew first out and eases the installation of the sail into the boom on its next use. On the jib, the opposite occurs. The sail should be loaded into the bag so the tack will be first out.

**Final Inspection** - Immediately before installing the cockpit cover is a good time to take one last look for things that need to be done or noted on the board in the sailhouse for the next sail:

- Both painters attached and secured - in good condition
- Buckets, scuppers, and sponges
- Halyard cranks
- Anchor and Rode - properly stowed
- Personal gear stowed in dinghy
- All lines out of the bilge
- Clean, dry, and free of sand



**Cockpit Cover** - This is the last thing to be done prior to debarking. A properly installed cover forms a tent to shed water onto the seats which then drains overboard. To achieve this, the ridge line of the cover must be taut and form a peak. This is accomplished by securing the forward end of the ridge line around the mast and either attaching to itself or to the mast. Unroll the cover aft, (the aft end is the more narrow end) and pass the rear ridge line through the ring that secures the rudder tether and up to and around the boom, securing with a clove hitch. The light center line should simply hook into the groove in the boom. From the dinghy, make any final adjustments to the “tent” to give the best possible coverage of the cockpit.

Having successfully complete these few simple chores, you may now cast off and row to your favorite beverage, secure in the knowledge that the next member who sails this Scot will not be sing your name in vain.



## HAUL OUT - END OF THE SEASON

Row out to the boat with a pocketful of string tags and a permanent marker. Tag every item on the boat with the boat's sail number. Check the condition of each item as you remove and tag it. It's possible to remove everything except the mast and centerboard pendant. The goal is to have everything tagged so you can completely empty the boat with a minimum of fuss when you arrive at the clubhouse, and nothing gets lost between now and next spring.

Remove the mainsheet from the boom and ratchet block. Undo the topping lift and secure it to the spinnaker ring. Remove the boom and stow it in the boat.

With the boat in the water, remove the centerboard. The centerboard is heavy, about 100 lbs., so it's good to have two people do this. NOTE: the centerboard cannot be removed once the boat is on the trailer – it must be done now. One way is to let the centerboard all the way down and unshackle the wire pennant from the deck strap located on the trunk between the stanchions under the mast tabernacle. Remove the centerboard by putting a loop of line through the wire sheave and pulling it vertically upward. Gently lay – don't drop! - the centerboard flat on the bottom of the boat.

The committee boat will tow you to the ramp, and people on shore will help get the boat onto the trailer and then to level ground. Check the area where you will be working to see that you have room to safely drop the mast and work on all sides of the boat. Don't forget to look up for obstacles, too.

Unstep the mast by the reverse of the stepping process: Clip the jib halyard to the bow eye and snug it up, then detach the jibstay from its fitting and attach an extension. If the boat doesn't have a hinge, first lift the mast and put it in the lower step in the tabernacle. If it has a hinge, do nothing. With someone on the ground holding the extended jibstay, carefully walk the mast down. Be careful – once the mast is past vertical it will want to come down in a hurry. In addition, if your boat doesn't have a hinge, there will come a point at which the butt of the mast will want to kick up.

Once the mast is down, remove the shrouds from the chainplates. Mark the holes on the adjusters so the position can be restored next year. Carefully secure all rigging to the mast. If you use tape, wrap paper or plastic around the mast and rigging, then put tape over the protective wrap. Don't let the sticky stuff be stuck to the mast and rigging all winter as it'll be hard to clean up.

Carefully secure the mast for travel back to the clubhouse. Be sure it's padded anywhere it bears directly on the boat

Once at the clubhouse, the boat will be taken off the trailer and put on the ground. Everything should be already tagged with the boat's sail number, so all you have to do is empty the boat. Put the small stuff into the boat box, then put the boat box and the big stuff (tiller, rudder, spinnaker pole, etc.) in the proper bin in the basement. As you take things off, note their condition and note anything that will need to be taken care of next spring. Write it down now while it's still fresh in your mind – don't rely on remembering it and trying to pass it along in the spring.

- Condition of lines – anchor rode, topping lift, mainsheet, rudder tether, bow pennant, jibsheet. Check for chafe, kinks, mysterious shortenings, and general condition. Centerboard pennant stays on over the winter, but check to see that it's in good condition.
- Coil all lines neatly and stow in the boat box.

- Condition of wire rigging – shrouds, stay, halyards, centerboard pennant. Check for meathooks, cracked or rusting terminals or wire.
- Other equipment – canvas cover, tiller, rudder, decks, etc.
- Anything else you think of.

Put the list in the boat box.

Gather a gang of people and flip the boat upside down. Use tires around the chainplates to keep them off the ground. Scrub the bottom.

Gather a gang of people and flip the boat rightside up. Remove the plugs in the transom, and clean any mud or guano off the topsides and cockpit. If anyone tracked tar into the boat during the season, take it off now as it only gets harder to remove as time passes. Finally, hose down the interior – flush all the sand out.

You're done! Extra hands are always welcome elsewhere, though, so go see if you can help somebody else until all the boats are tucked away for the winter.

## GENERAL INFORMATION

Useful web pages:

[www.fssa.com](http://www.fssa.com) – Flying Scot Sailing Association (the class association for Flying Scots)

[www.flyingscot.com](http://www.flyingscot.com) – The manufacturer's website

Dimensions:

Length overall	19' 0"
Length, waterline	18' 6"
Beam	6' 9"
Draft, board up	8"
Draft, board down	4' 0" (48")
Mast height above water	28' 0"
Sail area, main & jib	191 ft <sup>2</sup>
Sail area, spinnaker	200 ft <sup>2</sup>
Weight, all up	850 lb.
Weight, hull	675 lb. minimum (per class rules)

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