The CSC User's Guide to the JY15

By Arne Frick, January 18, 1999

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1 Introduction

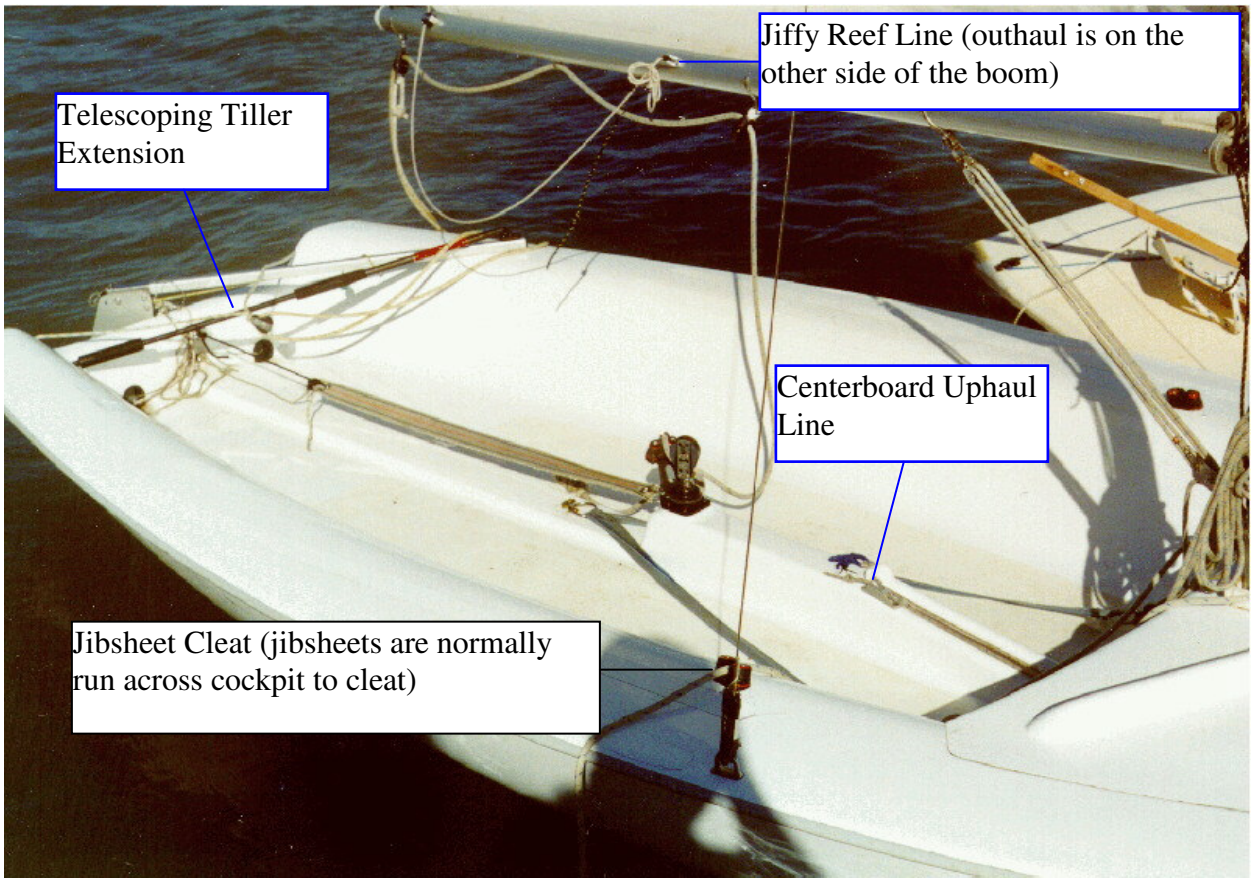
This section gives an introduction to the JY15 dinghy. Particular attention is given to the differences between the JYI5 and Cal Sailing Club's other dinghies.

1.1 Features

Designed by Rod Johnstone, a well-known boat architect who had previously designed the J/24 and the J-series boats for the *J Boats* company, the major design criteria for the JY15 were *simplicity, durability and tight classrules.* The result is a one-design dinghy that offers great performance, and sailing it is more fun for sailors of all ages, even in light winds. It is built from tough triple-laminate plastic that includes an ABS outer skin, foam core, and fiberglass inner skin. It is a very popular boat, with more than 2000 boats delivered and over 80 fleets in the continental U.S. and world-wide.

The Cal Sailing Club operates six JY15's that were donated (thanks Patrick!) or purchased used. The picture on the following page shows one of them. The telescoping tiller extension is not on all the boats. The jiffy reef is on the starboard side, which makes it easier to reef. The centerboard is raised by an uphaul line that cleats at the rear of the centerboard slot, and is lowered by a bungee cord.

Most of the boats are now rigged for trapeze. One is rigged for roller furling, and one is rigged for symmetrical spinnaker. For the truly adventurous skipper, there is a tiller set up with double, extra long hiking sticks that allow you to trapeze single-handed. There is also a jury-rigged setup for flying an asymmetrical spinnaker on one of the boats, for light wind (<5 knots) only.



1.2 CSC rules regarding the JYI5

To sign out a JY15, you need to have your Jr Skipper rating and you also have to pass a special checkout on the JY15 that should include rigging and docking. You can pass your Jr. Skipper sailing test on the JY15, and get your Jr Skipper and JY checkout in one shot.

Remember that the JY15 can be a real handful to single-hand in winds over 10 to 15 knots (lighter and shorter skippers will need crew in just over 10 knots), unless you go out under reefed main alone.

2 Rigging and Derigging

The mast spreaders[1] need special attention needs to be given when using the hoist. The spreaders can bend or separate from the mast if they or their shrouds hit the hoist. Reattaching them is no easy task (see repairs section).

2.1 Equipment

- The **sail covers** are blue and should be left in the PFD container.
- The **sails** are stored rolled on the boom with the jib rolled inside the mainsail, and the mainsheet wrapped around the two sails to hold them on the boom until the sail cover is on.
- The mainsail has **jiffy reefing**. The main can be reefed without undoing the outhaul line, by pulling the jiffy reef line. A jam cleat on the starboard side secures the jiffy reef line, and another on the port side secures the outhaul line.
- The **sling** for the hoist is the same as the one that fits the Bahias, P15, and H146's. Be ready to lift or depress the bow to prevent the mast from getting near the hoist.
- The **rudder and tiller** stay on the boat. The rudder stays attached to the boat by a safety line between the rudderhead and the lower padeye (metal strap) inside the transom. Check the pin that holds the tiller to the rudderhead before sailing to make sure the tiller won't disengage from the rudderhead.
- The rudder has an uphaul line to hold it up in the yard, and a downhaul line to hold it down for sailing. The uphaul or downhaul are secured on the jam cleat on the port side of the tiller.
- The **anchor line** is attached to the mast base.

2.2 Rigging

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[1] Not part of the original design, the one-piece mast and the spreaders have been added to the class rules in 1995 [5] in order to increase the mast strength. This has proven helpful in preventing mechanical failures that occurred from mast reversals and permanent bends.

- Unwrap the mainsheet and loosen it before using the hoist, since a tight mainsheet makes it hard to attach the sling with the rudder and tiller installed.
- The sling should be attached to the two chainplate U-bolts and to the upper transom padeye. Check the attachment carefully, especially at the transom, since the spreaders will hit the hoist if the sling is not attached in back. The sling goes over the boom.
- Hoist and check the hull for water, then put in the hull plugs.
- When using the hoist, keep a sharp eye on the spreaders to make sure they don't hit the hoist. Best to have two people, one at the hoist and one on the bow painter. The person on the bow painter should get out on the ramp or dock to be able to pull the bow so that the boat's spreaders stay away from the hoist.
- When hoisting or lowering the mainsail, take care to not bang the boom on the hull.
- Reefing is by a jiffy reef line on the starboard side of the boom. If you're reefing at the dock, lower the mainsail completely. Put the Cunningham through the reef tack cringle and tighten it to hold the reef tack cringle just an inch or two above the tack cringle. Tighten the jiffy reef line as hard as you can, so that it pulls the reefing clew out as far as possible on the boom. Now you can tie the reef points. The reef points go around the boom, since the foot of the sail is in a groove on the boom. Be sure to loosen the boom vang before raising the sail.
- If you're reefing out on the water, loosen the boom vang completely and haul on the jiffy reef line until it pulls the boom up. Now lower the mainsail until the reef cringle is at boom level and attach the Cunningham through the reef tack cringle. Then tighten the main halyard to stretch the luff. Next haul on the jiffy reef line until the foot is taut. Once the luff and foot are taut, tighten up the boom vang, and attempt to tie the reef points. The reef points can be left undone while sailing, since their main purpose is to keep the bunt (loose portion) of the sail out of your face.
- Important note: Don't tie the reef lines before tensioning the jiffy reef line or they may get pulled against the boom vang fitting and/or mainsheet block strap on the boom.
- The main halyard should be pulled only hard enough to leave small wrinkles in the lower third of the mainsail's luff. Definitely avoid too much tension, a sign of which are huge vertical wrinkles.

- **The Cunningham should be fairly loose, except in very high winds (> 15 knots).**

The outhaul (on the starboard side of the boom) or jiffy reef line (on the port side, which functions as an outhaul when the main is reefed) should be tensioned until a small fold just begins to appear in the foot of the mainsail.

The boom vang should be tensioned by only about 1"-3" for winds under 10 knots, about 5" for wind under 15 knots, and 8" for wind > 15 knots. The boom vang should not be pulled any harder than this when rigging, nor should it be eased too much in heavy air on a run.

2.3 Derigging

- After sailing, wash the sails if they've been sprayed or immersed in the bay.
- The sails are rolled. The jib comes off and should be rolled first, and then placed on the foredeck ready to be rolled into the mainsail.
- When rolling the sails, make sure the roll stays parallel to the battens—just roll the luff slightly tighter than the leech. Put the rolled-up jib into the last 1-2 wraps of the mainsail.

3. Sailing

Sail trim is critical to achieving top performance. This section discusses how to apply basic sailing techniques to the JY15, and then focuses on advanced sailing techniques.

3.1 Basic Sailing

The first thing you notice is that the JY15 responds very quickly and easily to the tiller, and that it does not produce much weather helm. The first observation is related to the fact that the rudder is relatively large, and the latter is caused by two requirements on efficiently sailing the boat: heeling the boat is not really an option, and over-trimming the mainsail will reduce performance.

The JY15 should be sailed as level as possible. Because the centerboard is relatively small, heeling the boat upwind makes the centerboard less effective. To keep it effective, water must be able to flow around it.

You should try not to pinch the boat. Pinching not only slows down the boat, but thereby also makes the centerboard less effective, which leads to leeway.

Also, you should avoid over-trimming the mainsail, which happens easily, due to the 3-1 purchase in the main sheet and the non-adjustable traveler. To keep the boat moving fast (and thus retain the centerboard's effectiveness), when close hauled you should keep the main sheet eased enough that the boom is at least halfway between the centerline and the leeward quarter.

A telltale can be attached on the main to the long batten about 2/3 up the sail to assist in judging if you're properly trimmed. If the telltale starts to flutter, indicating the sail is stalled, it's time to head up or ease the main.

Jib trim is also very important and needs constant attention by the crew. A properly trimmed jib should always have some curve. Otherwise, it flutters and develops curls in the foot.

3.1.1 Upwind Sailing

When sailing upwind, the crew should sit close together, especially in waves. The centerboard is normally all the way down; but can be raised slightly when you have a light crew.

In high winds, the boat can point higher if the jib is sheeted in to windward about 1"-2".

3.1.2 Reaching

When sailing downwind (reaching and running), the crew weight should be forward and spread out to both sides of the boat. In addition, the crew weight can be used to heel the boat (rudderless sailing style) for steering control, to keep the rudder neutral which will minimize drag [10].

On a reach, the crew should hold the jib sheet should be held to leeward manually, i.e. not feeding it through the cleats. The best jib position is usually achieved when the jib sail luffs evenly (from top to bottom) when head to wind. The vang can be eased, and the centerboard should be raised about halfway on a beam reach and ¾ on a broad reach.

3.1.3 Running

On a run, the vang can be eased more, but should not be over-eased in heavy air. The centerboard can be raised all the way, but the crew should be ready to put it down immediately

should it get gusty, since it's easy to lose control in a big puff. In very high winds, raise the centerboard only about 1/3 to increase the steering control and dampen rolling.

The jib can be winged in winds above 5 knots. In lighter winds, sail on a broad reach instead and jibe back and forth to reach your goal, e.g. a leeward mark.

3.2 Advanced Sailing

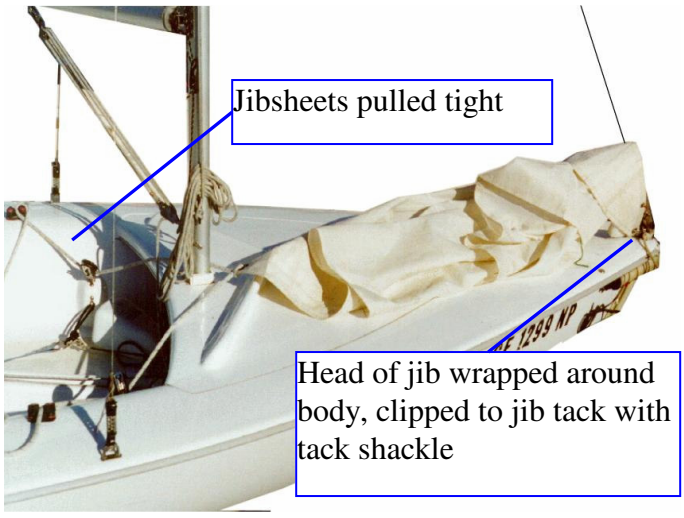
3.2.1 Planing

One of the most exciting features, besides being a very fast boat, is the ability of the JY15 to *plane*. When a boat starts to plane, it lifts slightly more than usual out of the water and behaves similar to a surfboard in the waves. Obviously, this gives both the centerboard and the rudder less control over the boat.

The best planing behavior occurs on reaching and running courses, but once the boat is planing, it can also point higher than a beam reach while continuing to plane.

3.2.2 Single-Handing

The JY15 can be single-handed, although it is best sailed with a crew unless you are tall and agile enough to easily reach the jibsheets.



In higher winds, jib handling is hard when you're single-handing. It's probably best to lower the jib and sail on just a reefed main. To lower and secure the jib while out sailing, anchor or capsize, lower the jib, and detach and stow the halyard. The jib can be secured on deck by 1) trimming both jibsheets, and securing them to the cleats nearest the blocks and 2) undoing the top jib hank from the forestay, wrapping the jib head once around the lowered jib, and attaching the jib's head to the forestay fitting shackle, along with the jib's tack.

3.3 Recovery from a capsize

Even the best skipper will sometimes flip the JY15 over and capsize it. The masthead floats keep the mast from getting stuck in the mud unless you put a lot of weight on the mast.

To right the boat again as quickly as possible, get the sheets loose, centerboard down (if it was up), and the boat pointed into the wind or at least with the mast downwind. Then step onto the centerboard and grasp the jibsheet between block and clew to pull against the stopper knot at the end of the jibsheet. Because of the JY15's light hull weight, if it's righted too quickly it may flip over again on the other side.

3.4 Rudderless Sailing

Raise the centerboard about halfway, raise the rudder all the way. The boat is steered mostly by heeling it upwind or downwind. Tacking in strong wind will require that you backwind the jib.

Repairs

Parts that aren't in the shed or that aren't available from Svendsen's can be ordered from the manufacturer, Hunter who bought JYSailboats. Be sure to get authorization from an ExComm member for any purchase up to $250, anything larger requires an ExComm meeting.

Sail rips should be repaired with sail tape, kept in the board hospital. Clean the sail with alcohol and dry it before applying the tape.

Dings in the outer skin are repaired with epoxy or Plastic Welder. Epoxy will adhere to the outer skin only if it's cleaned (use alcohol! Acetone will melt the plastic), sanded with 80 grit paper or 36 grit disks to roughen, and cleaned again. Plastic Welder (black double syringe) hardens in minutes, and adheres very well to cleaned (alcohol!) surface. Cracks in the rails or taint (the insert that holds the mast) should be repaired with fiberglass cloth wetted with epoxy mixture, which then needs to be sanded. Always paint repairs with Krylon Fusion white spray paint (or other spray paint that adheres to plastic) so that the epoxy or Plastic Welder won't be damaged by UV.

Centerboard and rudder mishaps can be repaired with epoxy. Use a mixture of microballoons (West Systems 410) and epoxy resin and hardener to replace any missing foam. Breaks in the surface should be sanded out to provide a wide area with a very shallow taper to which the new fiberglass (cloth, resin, and hardener) can adhere.

On spars, all of the stainless fittings (bails, tangs, padeyes, etc.) should be separated from the aluminum spars by a plastic barrier (electrical tape, yoghurt container, etc.). All rivets and screws should be coated with a corrosion inhibitor such as Never-Seize (a mixture of magnesium powder and grease that acts as a sacrificial anode) or, better yet, barium chromate paint (kept in toolshed).

Spreader mishaps are difficult to repair because of corrosion of the holes. The easiest repair is to replace the 3/16" stainless steel rivets (when they've pulled out of the mast) with ¼" threaded aluminum rivets (kept in toolshed with special tool), which then take #10 screws. The spreaders can also be relocated about 2" down the mast to facilitate repair if necessary.