

ILCA/Laser Equipment Checklist

This checklist is intended for Gorge Sailors attending one of the CGRA clinics or regattas.

Key message: this venue is generally very windy which puts a lot a stress on everything/everybody. If something is going to break, it will do it here, and at the most inopportune time. Everything needs to be in very good condition to maximize the enjoyment of your time on the water.

Lines

- Check for damaged or frayed lines and replace them
- Check all knots and splices
- Mainsheet should be 7mm or 8mm
- Rig your boat completely before you arrive to make sure that the outhaul, cunningham and boom vang all work well. The boom vang should have all of the purchases rigged unless you are Hercules.
- The Cunningham should be at least 8:1 (3 blocks) to enable you to pull the sail grommet to the boom on a 4.7 or radial. 10:1 works well for a full rig.

Deck/Hull Fittings

- Hand tighten all screws. Do not use a drill and do not overdo it. If they spin and won't tighten, you'll have to fix it before you arrive. See section on threaded inserts.
 - Check the plate that hold the Cunningham and outhaul turning blocks. If the screws fail, the plate bends in half.
 - Check the deck cleat for the Cunningham and outhaul.
 - Check the mainsheet block eye strap screws.
 - Check the aft hiking strap eye strap screws. Not a typical failure point.
 - Check gudgeon screws and gudgeons for cracks. This failure it common.
 - Check the grab rail screws and rails for cracks and looseness.
 - Check the traveler fairlead screws and fairleads for cracks and wear. Replace fairleads with the metal version, not plastic.
 - Check the bailer function: open and close. If it doesn't work, replace the o-rings. The bung is sometimes useful, but not critical. So much water gets in the cockpit that it's open all of the time. It's common to remove the bung and tape it open.
- Check the bailer function. If it doesn't work, replace the o-rings or install springs. The bung is sometimes useful, but not critical. So much water gets in the cockpit that it's open all of the time anyway. It's common to remove the bung and duct tape the bailer open.

Spars

This is an area of particular importance because the failure rate of the aluminum spars is high. One of the main culprits is corrosion, especially for salt water sailors. The other is spar fatigue caused by very high loads, which induces bending to the lower and upper mast and the boom. When the upper goes, you also lose the sail.

- Check for corrosion around all of the riveted fittings. Once it's bad enough, this is where it will fail. If you find it extending past the edge of the fitting and the galls are deep enough, consider replacing the spar.
- Check for scoring at the mast base at deck level. Similar problem occurs when the aluminum anodizing wears away, corrosion becomes more of a problem and when coupled with high vang loads, the lower can snap. The good news is that it doesn't destroy the sail, but it does put you out of commission.
- Check the gooseneck rivets for looseness. If you find it, drill the rivet out with a new 3/8" bit and replace with stainless steel rivet(s). If you remove and replace all of the rivets, consider coating the back of the gooseneck with Lanolin to prevent further corrosion. Can be purchased in the drug store or your favorite marine supplier.
- Check the boom vang tang rivets. If loose, same remedy as the gooseneck. Also, check the fitting for cracks. The most common failure point is where the port or starboard strap meets the vang attachment point.
- Check the upper collar rivets for tightness.
- Ensure that your mast retaining line is fitted between the deck turning block fitting and the vang tang. Mast must have 180 degrees of rotation.
- Check all of the rivets on the boom blocks. Replace as needed.
- Check the blocks for damage, especially the traveler block where the 2 blocks join.
- Check the lower and upper mast for bends. This is 100% due to vang loads and downwind crashes. The most common bends are the radial lower, which is not typically catastrophic and there's nothing to be done to fix it, and the aluminum upper, which eventually is going to break at the rivets that hold the collar. Check for straightness by assembling the mast and sitting down its length. The bend is obvious as you rotate the mast. The upper bend can be fixed by bending it back, but this is temporary solution. It's just going to bend again and after enough straightenings, it will snap, taking the sail with it. The best solution is to buy a new upper.
- Note: sometimes the rivet holes in the spar have been drilled out previously and may be too large to properly install new rivets. If this is the case, there are two choices: buy a new spar or through bolt the fitting. See below for a description of through bolting.
- Check the fit between the upper and lower. It should be snug. If loose, use packing tape around the upper's collar to correct.
- If using a composite top section, use packing tape or silicon to secure the top cap. They are a loose fit, with nothing holding them in place except friction. Eventually, they fall out.
- Make sure that your mast retaining line is connected between the deck turning block plate and the boom vang tang. Mast should rotate 180 degrees.

Blades

- Repair missing fiberglass and fix any cracks. A good video from Rooster is here: <https://www.youtube.com/watch?v=nqDhK0VcKTE>.
- Check the daggerboard stopper and the elastic that retains the board in the boat. There is no righting the boat after a capsize if the board comes all the way out.

Tiller

- Check the tiller extension universal for cracks. Replace it if you find any.
- Some extensions are held to the universal with a screw. Remove the screw and check to ensure that the rubber is not splitting inside the extension.

Hull

Lower priority. It's typically not a significant problem and can be addressed by emptying the boat's bilge each day. But, if you've done everything else, why not check it?

Check for leakage. Easiest with two people.

Method: Remove the transom plug and tape the small hole below the forward hiking strap attachment point. Blow air into the transom drain hole. A hair drier or something similar works fine. It does not need to be compressed air, that's overkill.

The second person should use a spray bottle with soapy water and spray all of the deck fittings and the deck to hull joint. If the water solution bubbles, that's where you have the leak. Plug it. If no leaks are found, check the o-ring on the transom plug and replace it if there are any cracks in it. Also, you can pour water into the mast step and see if it drains out into the hull. If it does, there is no easy fix for this. You'll just have to drain your boat each day after sailing.

Other equipment

- Check the rudder lift stop to make sure it's not damaged. There is no way to sail without a rudder. Also, insert the rudder and make sure that the stop actually stops the rudder from pulling out. Note: some pintels have a hole that will accept a ring ding. This is a fool proof way to make sure that the rudder stays in place.
- Check the vang where it attaches to the vang tang. The two halves of the vang tend to bend where it attaches to the tang and if you are using a quick pin, that eventually will pop out. A better solution is to use a clevis pin with a ring ding or other form to more secure attachment. A good solution is the Ronstan retaining clip (<https://westcoastsailing.net/retaining-clip/>) with a standard clevis pin.
- Check the upper vang block. If using the stock Harken metal block, the halves also tend to bend and the primary can get stuck between the side of the block and the sheave. Tighten the vang

key retaining bolt. Also, replace the stock vang key with the upgraded ILCA Vang key (<https://westcoastsailing.net/ilca-vang-key/>). The head is 2x as fat and won't split.

Threaded Inserts

If the screws are stripped (won't tighten), the best solution is to replace them with threaded inserts and stainless steel machine screws. You may be able to get away with using oversized screws to get more grip on the fiberglass, but this is not a permanent solution.

This procedure takes time and a little patience, but it's bullet proof once completed. A good video can be found here: https://www.youtube.com/watch?v=t7PP_0lmX-Y.

One note: the video assumes that you are screwing the insert into wood. You likely are not. Many/most Lasers and ILCA dinghies have no wood blocking beneath the deck. The best solution is to epoxy the inserts in place when installed. Cure time is typically 24 hours.

The parts required to do this are 10-24 brass inserts, 10-24 machine screws, a 15/64 drill bit, 2 part epoxy and an installation tool. A hex headed bolt and wrench also works. A threaded insert kit is available from EZ Loc: 400-3. Two part epoxies like JB Weld or West System, etc. will work and are readily available.

Through Bolting

If the fitting holes are too large to install a new rivet, you can use a machine screw instead.

The first step is to select a stainless steel machine screw that fits through the fitting and is long enough to accept 2 nuts.

To replace the eye straps on the boom, the easiest way is to drill out the rivet that holds the aft end cap and pry out the cap. Start with the forward eye strap. Take a piece of thread, dental floss or something similar and stick it through the hole and push it through until it exits the aft portion of the boom. Tie it to the end of the machine screw and pull it back and through the hole. Some fiddling is required, but it will come through. Put the eye strap and block on and the first nut. Tighten that nut down as best you can. For the aft block, you can get a wrench, if hex head, or allen wrench or 90 degree Philips screw driver on the machine screw. Use two nuts, tightening the second one hard while holding the first one with a suitable wrench. Use Loctite if you have it. Also, don't forget the lanolin between the eye strap and the boom. Repeat with bolt #2.

The forward block requires a little more finesse since you can't reach it with a wrench or screw driver to tighten the first nut. However, you can get it tight enough by holding the machine screw with your fingers and tightening the first nut. If you are careful, tape a pair of pliers (so you don't crush the

threads) to hang onto the screw as you tighten the nut. Do the best that you can and then put the second nut on the same way you did it on the aft block.

Rivet the end cap back on with an aluminum rivet. This needs to be a longer one to accommodate for the thickness of the plastic cap.

Riveting

When you use stainless steel rivets, you need a good rivet tool. Cheap ones will just bend before the rivet snaps off. Pop Rivet brand or similar are fine for aluminum rivets, but a proper tool is needed for stainless. The Pop Rivet brand is designed to be squeezed with one hand and the one you want requires two hands, one for each lever arm. It looks something like this: https://www.amazon.com/DIY-TK-Heavy-Riveter-Collect-Bottle/dp/B08XXKXYJ/ref=sr_1_49?crd=37TJ9UKPO4Z29&keywords=rivet+tool&qid=1675130066&sprifix=rivet+tool%2Caps%2C403&sr=8-49