

The Guide to Buying a Second-hand Laser 4000

This is a short information sheet designed to highlight some of the key points to look at when buying a second hand Laser 4000. It is not a comprehensive guide to setting up the boat, this is covered elsewhere, but contains the odd 'top tip' on some specific issues with the boat – so might even be worth a read if you've had the boat for a while.

1 Background

1.1 Overview

The hulls themselves are pretty bulletproof, and as long as they haven't been totally abused should last for many a year, and don't seem to lose stiffness with age. What tends to vary is the quality of the sails, ropes, foils and other accessories, and these can be quite pricey to replace – i.e. £1800 for a new set of sails.

Note: You don't need a measurement certificate – as long as it looks like a Laser 4K it probably is. If you want to be pedantic then check at the stern for the Performance Sailcraft builder's plaque on the rudder 'tower' at the transom, near where the hatch cover is.



1.2 Does Age Matter

In a word "no" as there are many examples of older boats being incredibly successful on the circuit. Possibly the best example of this was 4138 Printware, sailed by Luke & Emma McEwen that despite being more than 6 years old, finished 1,2,3 in the three main series in 2002. Additionally David Ellis & Rob Andrews won the Nationals and Eurocup series in Henri-Lloyd, number 4358 that was again a good 5 years old.

Detailed overleaf is a table of sail number against year of build as provided by Laser Centre, and whilst it is not explicit it is probably true that within a year the lower numbers were built ahead of the later numbers. For example in 2000 4556 would have been built earlier than 4582, which was definitely built nearer the end of the season.

Year	Sail No Start	Sail No End	Total No Built
1995	4001	4173	172
1996	4174	4292	118
1997	4293	4387	94
1998	4388	4480	92
1999	4481	4555	74
2000	4556	4588	32
2001	4589	4634	45
2002	4635	4666	31

If you are looking for an early (i.e sub 4050) sail number boat they may have had lighter deck laminate so look out for damage, although most of these were replaced free of charge by Laser when problems were first discovered.

1.3 Where to find details of decent 4K's

Second hand boats are often advertised on the class association chat page, or in Yachts and Yachting. Chat page advertised boats tend to have been sailed by more active class racers and therefore may well have adopted a number of the "tweaks" that make it easier to sail 4K's (e.g. Trap wire changes)

Additionally Laser Centre usually has a number of factory-reconditioned boats that have been fully checked over by their staff and have full warranties and often-new fittings or rope packs or other accessories. You tend to pay a little more than buying privately, but you get the peace of mind of the warranty cover and the knowledge that the boat has been fully checked by the professionals before it's sale.

1.4 Timing & Pricing

As of December 2002, boats were going for between £3000 and £6000 with the lower price being for a '40' or '41' series and top dollar being for a '46' series. Additionally the amount of extra kit (predominately sails) has big impact on the value of a boat, with a complete spare set of sails being worth around £800-£1000 second hand as part of the overall price.

Obviously its up to your personal situation to decide how much to spend but probably not worth completely blowing the budget as you're bound to have to splash out on some other bits and pieces to get the boat fully up to speed, or as things wear out / need improving throughout the season. It's certainly worth shopping around, and looking at a few boats just to get a feel for relative values –but you'll get bored if you look at more than 4 or 5.

Remember that you'll probably have to spend £200+ on insurance, and club membership & parking for somewhere like Datchet works out at £450 per annum.

The other top tip is that supply / demand varies according to the time of the season. It's clearly been a trend over the last few seasons that there's more boats available around September / October after the nationals. Prices can be a little softer due to the availability, and if you buy then you've got the benefit of some practice over the winter before the start of the following season. The other time you'll get more boats advertised on the chat page is usually around Feb/Mar/Apr in time for the start of the season.

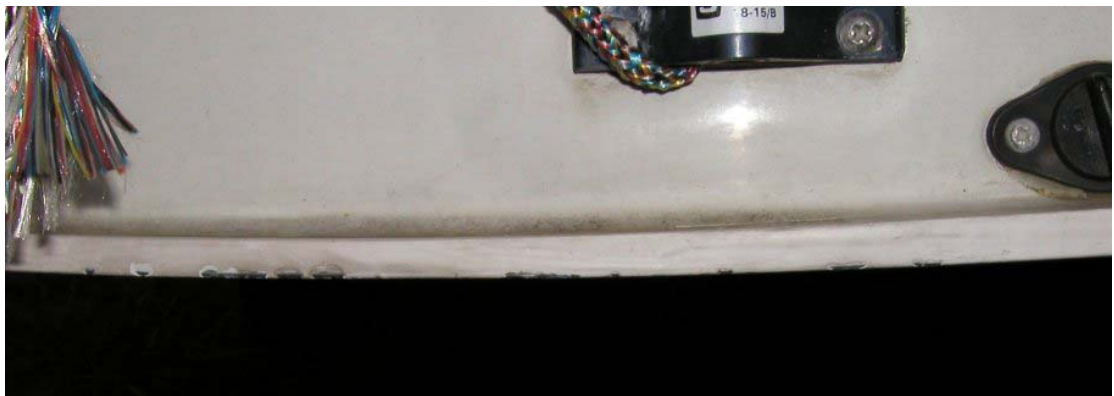
Often the class runs a training weekend for Newcomers early in March or April – with some of the to ten helms and crews in the class to give you the benefit of their advice. Check the chat page and the events page for more details – and make sure you get a boat in time to come along and have a go!

2 Things to check

It goes without saying that you should check the “big ticket items” first as these give you an idea of how well the boat’s been looked after, and by their nature cost more to replace. In particular check out the following: -

2.1 Hull

- Look for dinks and scratches, signs of repairs.
- In particular check the trailing edge at the transom as this has a propensity to be banged on the ground, thus chipping the gelcoat as in the photo below on the left hand-side



- Check the after end of the daggerboard case, as this could show signs of a heavy grounding. Also check the ‘carpet’ on the inside of the centre board case, can get detached through usage – not hard to replace just a bit of a faff!
- As the boats can ‘rack up’ on the starting line, check that there is no impact damage along the gunwhales, and that the rack anchorages are firm, as can be a source of leaks.
- Check for water in the hull - the stern hatch, ‘centre console’ hatch and the bow hatch under the spinny chute (see photo)



As the hull is divided into two compartments not sealed, but water can't flow easily from one to the other. Older boats have screws holding the front of the chute down to the bow; this makes access to the forward hatch awkward (you need to remove the screws!) so that compartment tends not to get sponged out very often. It's well worth fitting a new-style chute or modifying the old one.

The two plastic bits on the jib tack fitting are designed to stop there being a point load on the Gennaker pole when under load (i.e. downwind in breeze & waves) – make sure your boat has these bits – otherwise it could be possible to snap the pole. Replacement plastic bits are £6 or so, whereas poles are about £200. Also do not tie your boat down for trailing using this tack fitting; otherwise they have been known to shear off.

- Leaks - If the hull leaks, it is not too tricky to find the holes and seal them but if it has sat with water in for some time, the boat may have gained weight. To check for leaks blow into bung hole by mouth, listen for leaks or bubble-test with fairy liquid, (fix use bathroom sealant).
- Rudder gudgeons on hull: bushes wear out (can be replaced but difficult; and new fittings are pricey) and bolts through transom get loose. If any play at all, you won't be able to gybe in waves. Not successfully anyway.
- On the older boats you can find that the gelcoat has blistered, where the hull lies on the (damp) trolley cradle for long periods of time.

2.2 Sails

- Buy a boat with good sails. Jibs last 1-2 seasons and mains 2-3 - Gennakers go much quicker. Try to get a boat with 2 complete sets, as then you can trash the older set learning to sail the boat, then have the newer set when you are up to speed.
- Gennaker, check for nicks, cuts/tears, repairs. Often people forget to tape either the jib tack or head fitting and this can easily rip the kite. The kites wear out readily and whilst can be "fabsilled" once the shine has gone they will have lost that racing crispness
- Mainsails – Generally very robust - however I've spent over 80 quid in repairs (mainly bolt-rope) to a lightly used main, so check the following
 - Full set of battens in place

- Tears to the bolt rope (especially around batten pocket ends)
- Damage to bottom 2 batten pockets where they touch the shrouds.
- Damage to sail on foot where it touches the Gnav wire / fittings
- Jib – the jib bashes the mast on every tack, so it doesn't take that long for the leach to lose it's crispness. Also check that none of the battens are broken. If the crew flies round the front of the mast in a capsize, it has been known for this to break the battens.

2.3 Foils

- **IMPORTANT** – virtually every boat that has been campaigned on the circuit will have sanded the trailing edge of the foils and thus removed the white paint back to the underlying high density foam. Sanding the trailing edge within 75mm of edge is legal, but its not legal to go any further. This has the added benefit of reducing vibration and this increasing speed, but more importantly reducing the “hum” within the boat and thus making it possible to have polite discussions with the crew about the previous evenings social activities whilst planning hard downwind!

The photo below shows some typical sanded foils.



- Check the general standard of the foils, including nicks and scratches on the leading edges / tips.
- The tips of the centreboards are prone to snapping if grounded hard, and whilst can be repaired effectively; check to see if this has occurred.
- Additionally check the trailing edge for impact damage, again either from groundings or crews jumping on the edge when righting the boat from a capsize.

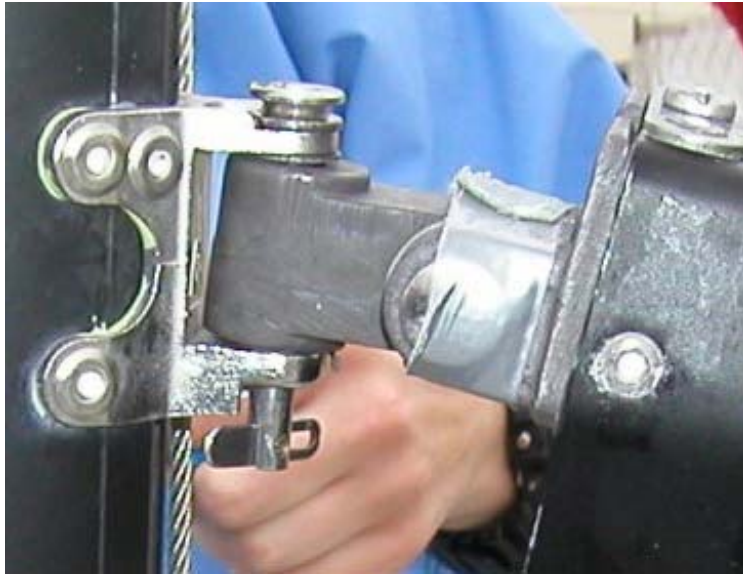
- There are 2 different types of rudder stocks, a predominately silver one (as previous photo) and a black one on more recent boats. Not much difference between the two, apart from the black one has the ability to fix the rudder on with a clevis ring (see photo below). If you buy a boat with the old rudderstock, make sure you tie the rudder on with shockcord to the top pintle. Otherwise if you capsize, you might lose the rudder and they don't float!



- Additionally the tiller rivets get wobbly on very old boats and thus make gybing somewhat more entertaining than it needs to be!

2.4 Mast & Boom / Gnav

- Don't worry too much about the mast condition, as you're likely to break one in first season - just get a good insurer and be prepared to claim!
- Old spars are silver, newer ones are black. This applies to booms and poles as well.
- Check for bends, naturally should have a fore / aft bend but check for signs of sideways bend, as can occur when inverted in shallow water.
- Check top of mast for scratches etc, a sign of having been bounced on the bottom at venues like Lymington, Felixstowe. Make sure the halyard block at the top of the mast is free to rotate.
- Check for signs of cracks/failure around rivets and the trapeze wire t-terminals
- Check that the gnav is straight (they have been known to bend from time to time) and that the wire and car are in good nick. New ones cost £142 for the whole caboodle. The strut at the top end wears out eventually, but can be protected a little by using washers – although it adds to the faff when rigging.
- Gooseneck: fitting on mast tends to fall off because of bad design. Proctor's fix is to add another couple of rivets as can be seen in the photo (at the top of the mast fitting.) The toggle between mast and boom wears out; can be rejuvenated by turning upside down, but only once! Expensive to replace. Similarly washers help to reduce the wear factor.



- Tack end fitting in boom eventually pulls out (3 seasons' hard use): check for cracks of tube immediately forward of lower rivets. Cracks appear after about a season but take time to fail completely.

2.5 Trolley / Trailer

- Check the trolley / trailer wheels, make sure the tyres are firm and no unusual bumps.
- Check that there's no spots where the galvanising has rubbed through.
- Check that the tow hitch works correctly and the combi fits together well – try and get a spare wheel thrown in – or attached to the trailer (if a tire blow's on the way home you'll need it)
- Cradle trolleys seem to be preferred over the gunwhale hung trolleys, this is probably due to the amount of standing in the boat you have to do when rigging the mast, however they are more prone to grounding transom as boat is lower and bow higher than on older trolley designs
- Cradle trolleys (esp. blue cradle) tend to crack just forward of reinforcement over trailer axle
- Check old trolleys that had a little cradle for bow stem knuckle - see photo



The moulded cup is bolted to the trolley by a bolt that goes through the bottom of the cup. This was covered in carpet but when the carpet wore out, the bolt would start eating the boat.

2.6 Covers

- You need both a top cover and an undercover if doing the circuit. They seem to last well, but check for UV degradation – especially in the undercover that tends to be cotton style material rather than plastic.
- Some people have trailing covers, but they're not really worth it, it's just something else to lose in the dinghy park at Stokes Bay.

3 Laser 4K Specific

3.1 Trapeze Wires

The best way to check whether your prospective boat has been raced to any degree or so is to look at the trap wires. If it's still fitted with the naff blue handles, as standard from laser centre, then it's never been "raced or rallied". The standard kit has two key flaws (1) Wires too long and (2) nasty handles.

Most people that race will cut down the wire in length and change the fittings. Ensure that the distance between the T-Terminal to a hard eye is around 3700-3900mm and then use a piece of rope to join the wire to the camcleat block using a disc or similar for a handle. (see left photo). This means that crews can trapeze a lot higher in marginal conditions or downwind in waves, which is definitely faster. Additionally it's worth replacing the standard trapeze ring with a 'wider mouth' one as per the photo on the right as makes hooking in / out easier – not to mention doing the "stuff the bungee through the eye routine everytime we go sailing"



3.2 Trampettes & Gennaker Socks

Check the trampettes (fabric across racks where helm puts his/her bum!) and the Gennaker socks for signs of wear. Especially along the eyelets at the bottom of the trampettes, and the bottom edge of the gennaker sock, where careless handling when down hauling the kite can cut the sock. Additionally look for UV degradation at the forward end of the chute over the jib tack fitting as the cover doesn't protect it there. Replacements costs are sock - £123 and trampettes about £45 each.

3.3 Equalisation Weights

Check that you get a full set of red weights (4) with the boat. Standard from new is three but if you are on the lightweight side, you'll need an extra one and they cost £58 from the laser centre.

3.4 Cordage & Blocks

This is possibly one of the most overlooked parts of buying a s/hand 4K. Check all the blocks to see if signs of wear. In particular check these blocks

- Mainsheet blocks as highly loaded - and I've already had a Harken ratchet fail, also the ball bearing blocks on the boom are often only good for a couple of seasons.
- Kite ratchets - only last about a year and are pricey; make sure you replace with 'auto ratchets' – makes the sheet run out much easier on the gybes.
- 'Back to back' block in the kite halyard as highly loaded (see photo)



- Kicker blocks including the wire ones and the organisers at foot of mast (£35)
- Jib halyard 3-1 blocks and rope.
- Kite halyard cleat swivel base, check this is not loose and that the grey plastic fairlead is not worn through. If so then it's worth replacing it with a metal one, as this will not wear thru if the crew hoists from the fairlead, rather than from the pulley.



Also note the elastic round the base of the cleat and onto the weight-retaining bar. This is reasonably tight and ensures the cleat is always in a "natural" position for cleating.

- Mast foot organiser blocks (where the kicker is 'turned to run aft') - old design had flared top edge all way along, so ball bearings fall out easily. Newer design has shorter flare. £45 new, per side!
- Jib sheet cleats

Then check over all the cordage and determine whether it's up to lasting another season. Replacing the main & kite halyards alone will cost over £65 from the Laser Centre, but the last thing you want is for it to fail whilst you're in the middle of Lake Garda.

Buy one and come join in the fun!

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Produced: Dec 2002