

IEMA's instructions for the re-building of a classic *Existing boat* or building of a new *Sistership* to an existing classic design or building a classic boat to a design prior to 1950 and never built before, later called *Period's Eight*.

Regardless of whether rebuilding an Existing boat or building a Sistership or Period's Eight, the following four general instructions must be followed as they apply to all Eights afloat:

1. Original designer's linesplan must be followed, but the boat need not float in the original waterline although this is recommended. See a note regarding performance further below.
2. The boat shall comply with period's Lloyd's Rules for the Building and Classification of Yachts of the International Rating Classes. These are available from the Technical Committee of IEMA (TC).
3. The boat shall comply with the Eight Metre Class Rules, available from ISAF's website.
4. When complete, the boat shall be measured by an approved class measurer, who will issue a valid Class Certificate (for clarity and some scantlings issues, all 2nd and 3rd rule designs must be measured to 3rd rule). Note, that without a valid measurement certificate your boat is not an Eight.

When building an Eight Metre Sistership or new Period's Eight some more instructions apply:

5. You are allowed to build to any period's design, prior to 1950, as long as you do not break anybody's rights.
6. In any case, the TC strongly recommends that owners of existing eights should be informed of new Sisterships although doing so is not legally necessary.
7. Within reasonable limits, you are allowed to re-design the cockpit, deck house and deck layout as long as they are of period's style acceptable to the TC. If you intend to change this part of the design please notify the IEMA TC and present your design for approval of the TC.
8. You shall build a cabintop with a minimum average height of 0,15 m over an minimum area of 2,2 m². The cabintop must be a classic, distinctive cabintop of period's style, therefore e.g. an elevated deck is not acceptable. The mast is not allowed to pass through any part of the cabintop, but must pass through the deck. The scantlings for the cabintop are the same as the scantlings for the deck. This means also that if you install a skylight (or another device to let light into the cabin), its weight must be such that the weight of the cabintop is not less than what it would be without the skylight. If you are rebuilding an eight with a cabintop not meeting the Rule, it must be made to comply and you should contact the TC. The cabintop rule does not apply to yachts ordered before February 1927. If you are working with such a design, please contact the TC.
9. IEMA recommends sending copies of the plans of the boat to Technical Committee so that TC can help and advice the owner in the building process.
10. A Sistership or a new Period's Eight is a completely new boat and the ISAF Class building fee must be paid to ISAF.
11. The Sistership Eight does not inherit anything from the original boat, for example, past history and pedigree. Specifically, it must have a clearly different name and sail number. For example, adding a number after the name does not make it clearly different. Also all previous sail numbers of the original boat belong to it. The Local Authority can rule whether the original boat is allowed to sail with an old sail number, but the newer Sistership can never do so.
12. If you are targeting to race for the *Sira Cup* or the *Neptune Trophy*, the corresponding rules shall be followed. Specifically the *Neptune Trophy* rules are very restrictive in what you can have onboard. These rules are available from the IEMA website and the TC is happy to help you with those.

These instructions apply to working with all classic eights, regardless whether repairing, building, rebuilding or changing the boat in any way:

13. When building, you are allowed to put any gluing or caulking compound between the parts of your boat, be they wood or metal. These include among others, epoxy, polyurethane, resorcinol and oil based compounds. As it is impossible to exactly classify the many available gluing and caulking materials, in the following all of them are called adhesives. You may use fillers and like in your adhesive to make the seam thicker and prevent the adhesive from flowing. Such fillers would include e.g. silica ash, microballoons, pulp, glass, cotton, polyester and wood in the form of dust, fibers or cloth. Examples: You may put adhesive into the carvel seams and you may put adhesive between the planks and the frames. If your boat has metal frames, it is highly recommended that you put a thick layer of suitable adhesive between the frame and planking and you could well include e.g. a canvas strip impregnated with the adhesive. With wooden frames this is not as important, but is still a good idea. You may never use any adhesive to deviate from scantling dimensions and you must still use all the fastenings (rivets, screws etc) specified in the period's Lloyds Scantlings. In order to maximize the durability and longevity of your boat, the correct usage of different adhesives is an important issue and as always, if in doubt, contacts the TC.
14. You are allowed to replace carbon steel with bronze, stainless or acid proof steel and you are allowed to use these to build floors (both normal and wrought iron-type), frames and knees in any boat, but Lloyd's scantlings must, as always, be followed. Note that regular 304 stainless corrodes in salt water, whereas acid proof 316 does not. If the original design of your boat specifies steel frames, you are allowed to replace these with wooden frames as long as the period's Lloyd's scantlings are followed. However, the TC does not exactly recommend this in a restoration work as changing from steel to wood changes the character of the boat a lot. It is relatively easy to use hot rolled acid proof 316 steel that is not in a work hardened state for making steel frames and the result will look like old galvanized frames. Further, unlike carbon steel, 316

- is compatible with copper rivets specified in many classic designs and the combination is very aesthetic. The TC can help you with this.
15. Instead of using grown or bent wood you are allowed to use laminated wood in your frames if you so like, but you naturally still have to follow the period's Lloyd's scantlings. You may want to select such a glue that does not leave a visible glue line.
 16. You may replace a planked or sprung laid deck with a plywood deck or build a sprung laid deck over plywood or hide the plywood between two planked or sprung laid decks. If the e.g. the form of the deck is such that bending plywood is difficult, you may use veneer or veneer strips and you may glue several veneers on top of each other to make you own plywood.
 17. The above applies also to the cabintop.
 18. Note that the above naturally does not apply to the hull, so you cannot build e.g. a cold molded hull. On the other hand, this naturally does not prevent you from making a double planked hull.
 19. When painting your boat, you are allowed to use modern paints. Many experts think that the paint on the outside should be as watertight as possible. On the inside typically a more breathing type of a surface treatment is preferred although some think that also the inside can be closed.
 20. You are allowed to use a thin layer of fiberglass under the paint or varnish on the outside of the hull. This means adding extra weight to your boat, so the keenest racers may want to refrain from this. The fiberglass is not deductable from the minimum plank thickness or from the panel weight of the period's Lloyds Scantlings, so fiberglass is all extra thickness and weight. In no case you are allowed to use more glass than 800 g x surface area of the wooden hull in m2. The advantage of using fiberglass below the paint is that the seams of the planks are less prone to cracking if there is adhesive between the planks and the planking surface is covered with fiberglass so that many fibers run at 90 degree angles to the seams. Note that epoxy (be it as adhesive or paint) is one of the best materials when it comes to water tightness. As you probably know, polyester or vinyl adhesives/resins/paints are not suitable for direct contact with wood. Note also that anything below 400 g/m2 is not strong enough to prevent the seams from cracking and 800 g/m2 is not going to increase your boat's overall stiffness much, so the glass is not going to make a rotten boat stronger. Note that if you plan to varnish your boat and plan to use fiberglass under the varnish, you absolutely must choose and test the materials that you intend to use so that the fiberglass pattern completely disappears and end the end result looks like normal varnish only.
 21. On your deck you are allowed to use an adhesive instead of paint and fiberglass instead of cloth when making a canvas deck. A cloth is a woven fabric made of cotton, any other natural fiber, or polyester and like. Specifically, carbon fiber and materials with higher modulus of elasticity or tensile strength than those of glass are not allowed. Regardless of what combination you use, the period's Lloyds scantlings for a canvas deck must be followed.
 22. The shape of the rudder blade as well as its design, materials and way of building is free as long as it complies with the Eight Metre rule. This means that although you need not follow Lloyd's scantlings, you cannot e.g. build a blade out of any material you like.
 23. There is an ongoing moratorium for the hull shape (including the keel) for all classic boats. This means that if your boat's hull shape has earlier been modified from the original, it is accepted today as it is. However, if you rebuild the changed areas, you must bring them back to original form. The TC will help you to bring your boat to an acceptable shape even if the original shape is not known.
 24. As stated above, boats must be built to original shape, flotation in original waterline is recommended but not required. The eights generally perform best when they float at the original waterline with the original ballast. If you are not able to achieve this, make sure that at least your stern is not floating deep and dragging water along. Contact the TC if in doubt.
 25. As you may have noticed from the above, understanding the Eight Metre Rule and the Lloyd's scantlings require lots of knowledge about boatbuilding, mechanical engineering and physics and even more so when performance and tuning are considered. That is why there is the Technical Committee to help you.

Have fun with your building process!
The Technical Committee of IEMA
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