

**1. STIFF STEERING:** It is prevalent in at least ninety-seven per cent of all the boats that I have ever inspected, or tried, or visited. A really free steering system makes any boat easier to sail properly; and hence, faster; as well as much more pleasant to operate.

**2. POOR BILGE DRAINAGE AND POOR LIMBERS:** I have always felt that a tea cup full of water, put in right at the fore-peak, and one just inside the transom should find its way immediately to the lowest part of the bilge, where the pump intakes are located; and the capacity of the limbers must be such that they can get water to the pump intakes just a little more rapidly than the properly operating bilge pumps can take it out.

**3. FLOTATION REFERENCE MARKS:** To permit intelligent study of trim for optimum performance and Rating, it is desirable to have reference marks on forward and after centrelines, generally one each end on the datum water-line, and a second one twelve inches above same, so that by measuring from the surface of the water to these reference marks, it is possible to ascertain, with considerable accuracy, just where the boat is actually floating. In a glass boat, these points must be marked in the hull mould; and in one-off boats they must be picked up from the mould loft floor; and marked on the backbone when the boat is first set up; and the marks retained throughout the construction.

**4. UNGUARDED SHEAVES IN A CABLE STEERING GEAR:** The sheaves may have a deep score, so that if the cable is properly adjusted it will have little chance of jumping. Unfortunately, the cable is not always properly adjusted; and under great stress, considerable slack can occur; and without effective guards, there is a possibility of the cable jumping, which will immediately render such a steering system inoperative.

**5. POOR ACCESS TO ALL PARTS OF STEERING GEAR:** For adjustment, lubrication, and important cable re-placement. With a chain and cable steering gear, it is a good idea to remove and replace chain and cable when there is ample time to provide the access, which all too often has not been provided originally; so that when the situation is difficult, and quick replacement mandatory, it will be an operation that has been properly rehearsed, and is, in fact, feasible.

**6. STEERING QUADRANT AND STOPS:** Again, with cable steering gear, too many quadrants have shall-low grooves, and sharp corners where the cables come around the ends; and, most important, inadequate stops, improperly cushioned.

**7. LIGHTNING GROUNDING:** Omission of complete lightning grounding. High capacity copper leads (No. 8 A.W.G. -5lbs per ft.) should be provided from head stay, from top shrouds, from the metal masts, and from backstay if it is not provided with insulators, all to a ballast keel bolt, presuming outside ballast, or an adequate ground plate, if there is internal ballast in a glass boat.

**8. PROPELLER SHAFT MARKING:** Omission of clear marks on the propeller shaft, when the propeller is in the optimum position for minimum resistance.

**9. PROPELLER SHAFT LOCK:** Omission of a simple and effective and safe shaft lock, necessitated when the motor may be required for generating purposes. A relatively lightweight brass pin that can be sheared in emergency, provides the possibility of using the engine without damaging anything, or creating heat which results from driving through a brake that had not been fully released.

**10. NO SHARP CORNERS OR EDGES:** A detail that pretty well reflects the experience of a builder is the presence or absence of sharp corners, both of wood and metal throughout the boat. Anything sharp is not only potentially dangerous, particularly if it is metal, but it is also hard to maintain, particularly if it is wood.

**11. DIRTY BILGES:** It is most important to avoid a rough finish, which may make it virtually impossible to properly clean the bilges.

**12. IMPENETRABLE INTERIOR LINERS:** Between the production glass boats (there are too many that have complex cabin liners, which prevent access to fastening of the deck fittings, and inadequate inspection of the interior of the hull.

**13. INADEQUATE EXHAUST SYSTEM:** The key points are: A. Resistance to flooding - without the need for resorting to valves that can be forgotten, either to close, or more serious, to open. B. Unnecessary heat in the cabin. C. Noise suppression, both on, and off, the boat. D. Ease of repair and replacement. E. Outlet above the water at full speed.

**14. VULNERABLE ELECTRIC SWITCHES:** With relation to exposure to salt water, and salt spray. It is much better to have to reach a little further and to have the switches work. The right switch, cleverly located, can go on ad infinitum without any attention.

**15. MAGNETIC ITEMS NEAR THE COMPASS:** There is a great myth in the boating industry that the compass adjuster is omnipotent; but there is absolutely no question that the best results are obtained when a compass as installed is not subject to any items creating deviation; and, hence, is correct without magnets. This goes a long way to reduce the possibility of any heeling error and is a great blessing to the navigator.

**16. STRONG NON-MAGNETIC EMERGENCY TILLERS:** With convenient stowage including necessary tools for installation; and, here again, it is good to have rehearsals from time to time, in which case the emergency tiller may never be required. With the boat peacefully at anchor, the emergency tiller should be installed; and a reasonably strong person should treat it very roughly indeed; and if there is any tendency to show distortion, it should be adequately reinforced or replaced with an emergency tiller that is adequate.

**17. CHAIN PLATE ALIGNMENT:** for shrouds, stem fitting, and permanent backstay fittings, should all line up precisely with the rigging, which is attached to them.

**18. WHEEL RIM COVERING:** The currently popular destroyer type of steering wheel is pretty useless in cold or wet weather, except where the rim has been covered tightly with Elk Hide rough side out. This is the only product that doesn't seem to change whether it is wet or dry or hot or cold, and it provides just the right grip, without it being hard on the hands of the helmsman.

**19. KING SPOKE ALIGNMENT:** Steering chains and cables should be so adjusted, that with the rudder straight, a spoke is on the centre; and this spoke should be marked first on the rim with something that can be felt easily at night; and secondly, on the spoke with something that shows up well in the daytime, all the way along the spoke, so that from any place on deck it is possible to observe position of the wheel, and hence know the position of the rudder. This immediately helps make the obvious adjustments in sail trim to provide the best possible balance. To permit checking the adjustment of the king spoke, there should be a very precise centreline reference mark on the rim of the quadrant, visible from where the cables are adjusted, so the wheel can be

locked or secured with the king spoke on centre; and then the cables adjusted, so the quadrant is also registering on its appropriate centreline marking, indicating that the rudder is exactly straight.

**20. OVERSIZE CABIN WINDOWS:** This is fundamentally a matter of design, though an area where some builder will take liberty, in an effort to accede to opinions expressed frequently by people observing a boat in the security of the main hall of the Boat Show, as opposed to a situation where the boat is fighting for survival; and where the cabin house may be subject to a terrific battering - admittedly a long shot, but one of extreme importance.

ROD STEPHENS

*Problem Areas*, YACHTING WORLD ANNUAL, 1973

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