



# MARINE SURVEYORS AND SURVEYS

*by Eric Ogden*

*There is no worse experience for a yacht buyer than closing on the purchase of their dream yacht only to discover major damage that could seriously impair not only the value, but the safety and seaworthiness of their new acquisition. Yacht brokers sometimes ignore the existence of such defects, and the associated risks, but those who sell a vessel despite their knowledge of major flaws, do so without scruples. A pre-purchase survey by a professional marine surveyor is essential for any prospective yacht buyer, as it will provide him the information he needs to make a sound purchasing decision. In most cases, a marine surveyor is appointed by an insurance company or a financial institution to evaluate the risk of the investment and assess the extent of damage to a vessel. Although surveys of this nature are important, they represent only a portion of a professional marine surveyor's assignments..*

### THE MARINE SURVEYORS

Today, shipyards are building larger vessels than ever, equipped with increasingly sophisticated on-board systems, from materials ranging from traditional wooden planking to high tech composites. So, who are the marine surveyors responsible for accurately inspecting and appraising these various types of yachts? In most countries, the qualifications of marine surveyors are totally unregulated; virtually anyone can call himself a professional. Among practicing surveyors, the background and experience of the individuals range from retired navy officers to practicing naval architects/yacht designers, former boat builders to yard managers, even boating enthusiasts. Some have trained to improve their technical knowledge and practical experience and have become competent professionals. Unfortunately though, there are many so-called yacht surveyors who tarnish the image of the profession with their lack of knowledge and experience.

In the United States, the two nationally-recognized

marine surveyors organizations, The Society of Accredited Marine Surveyors (S.A.M.S.) and The National Association of Marine Surveyors (N.A.M.S.), require their members to meet strict professional, technical and ethical standards. Both organizations use similar screening and testing procedures. Members of the Society of Accredited Marine Surveyors, for instance, must have a minimum of five years experience and pass a written examination in order to earn their title. Furthermore, they are required to take refresher and advancement courses in order to maintain that title. The members of these two organizations are generally well-regarded and extensively hired by prospective buyers and insurance companies.

Before hiring a surveyor, it is of course important to find out the cost of his services and but moreover to inquire about his background experience and the nature of his qualifications. One can usually get an idea of whether or not the surveyor is a full-time professional or one who works part-time by comparing the fees charged. A marine surveyor must have solid theoretical knowledge of the various aspects of yacht



The surveyor uses a hammer to sound the hull shell and assess its condition.



Oil samples are useful tools to assess the condition of engines.



The ultrasonic gauge allows the surveyor to measure the thickness of the aluminum and steel hull plating.



A voltmeter is used by the surveyor to check the efficiency of the bonding system and a reference cell.

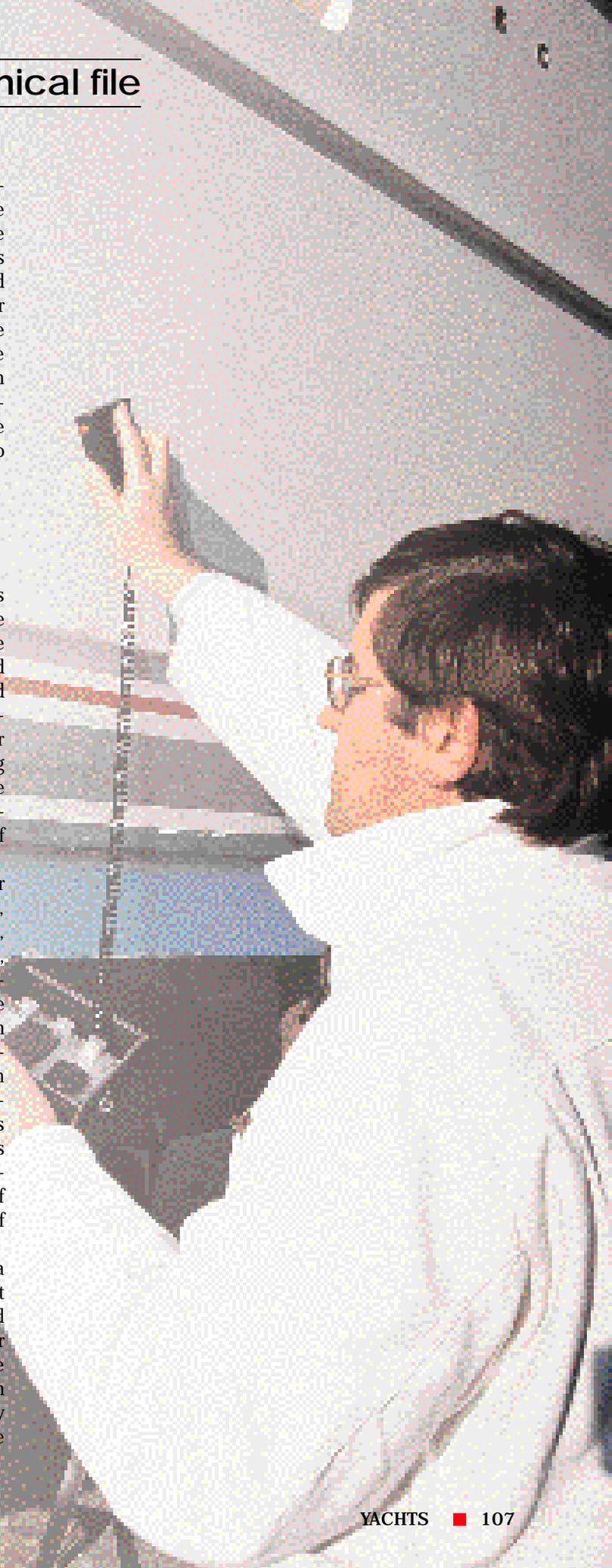
design, construction techniques and materials, national and international regulations regarding pleasure yachts, and the practical experience in maintenance and handling of boats. The survey of a yacht requires the tools of the trade, the proper methodology and working knowledge, along with high ethics. Whatever the type of survey is to be carried out, it should be done thoroughly with systematic care during the inspection, followed by additional research when writing out the survey report. This important document must be informative and easy to read to enable the reader to make the right decision, i.e. whether to buy, to evaluate an insurance risk or finance a yacht.

### ***THE PRE-PURCHASE CONDITION SURVEY***

This type of survey is the most comprehensive and is generally carried out in three main steps. While the vessel is afloat, it begins with an inspection of the internal structure. This includes the examination and testing of the various accessible on-board systems and safety equipment such as the bilge pumps, fire fighting system and life-saving appliances. The surveyor may also check the bonding system by measuring with an accurate voltmeter the voltage difference between the various immersed metal parts and a reference electrode, usually a silver/silver chloride half cell.

The survey normally continues with an out-of-water inspection and sounding of the external hull, appendages, through-hull fittings, propellers, shafts, rudders, sacrificial anodes and so on. On FRP hulls, the relative moisture content of the underwater laminate is often checked with an electronic moisture meter, or its hardness with a Barcol impressor. On steel and aluminum alloy hulls the surveyor can measure the plating thickness with an ultrasonic gauge. In some cases the surveyor will also ask for some dismantling to allow him to inspect certain components which may otherwise be inaccessible. The expenses incurred in moving a boat, or as a result of dismantling and subsequent repair of any structural part of the vessel during the survey are the responsibility of the buyer.

This out-of-water inspection is usually followed by a short sea trial to check the performance of the boat and the operation of the various systems. It is indeed much better to check the maximum speed of a motor yacht after the hull bottom and appendages have been pressure-washed and recoated with fresh antifouling paint. After the sea trial, the surveyor may take samples of the engine and gearbox lube oil to be



sent to a specialized laboratory. An oil analysis does not tell the full story and should not be considered as an engine survey. It is a valuable diagnostic tool which is usually part of a full engine survey, which may also include an endoscopic examination of the internal components and compression tests carried out by a professional engine surveyor. An electrical survey, including a "Megger" test by a qualified electrician, can be requested as well. On a large yacht, a full pre-purchase condition survey may take several days since its extent and duration varies widely with the size and type of yacht. These various investigations and inspections allow the surveyor to fully assess the condition of the yacht and prepare a comprehensive report for his client. A survey ends with the completion of the survey report.

A pre-purchase survey report may be several dozen pages long and generally starts by spelling out the scope, conditions and limitations of the survey. It then lists the vessel's main particulars: name of the yacht, registration number, dimensions and specifications, owner's details and so on.

The following pages outline the various observations and findings concerning the hull and deck structures, superstructures, accommodations, machinery and electrical installations, steering system, seacocks, tanks, piping, communication equipment, navigation instruments, and safety equipment, etc... The recommendations are then graded with respect to priority. Items that fall below safety standards are identified, if relevant. The conclusion indicates the surveyor's opinion on the general condition and if necessary, the

Checking the connections of the sacrificial anodes.



A thorough inspection of the bilges is imperative.

repairs and/or additional tests to be carried out. Photographs and other documents related to the inspected yacht are normally attached to the report.

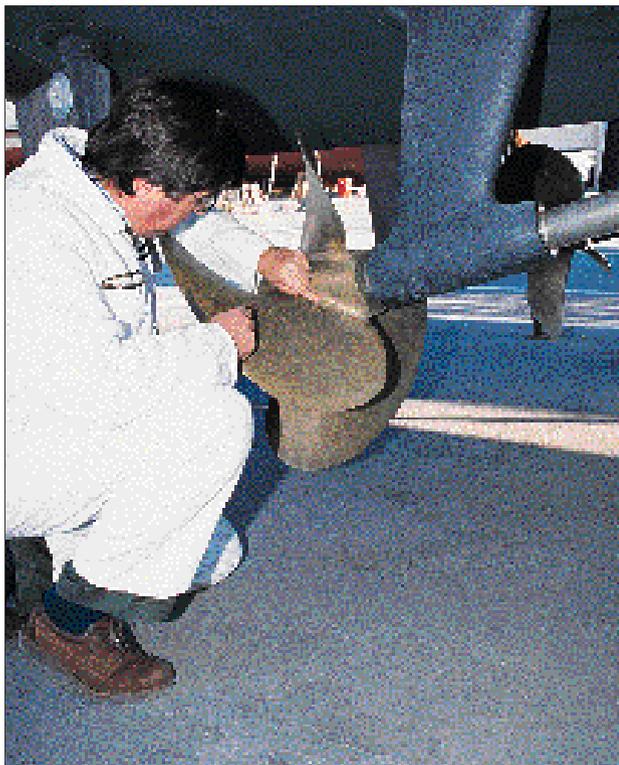
The cost of a survey depends on the surveyor, the type of survey, and the yacht's location. The fees are normally charged on an hourly or daily rate for larger yachts, and dollars per foot of overall length for smaller boats. However in all cases, the cost of a survey should be well below 1% of the yacht's value or asking price, and this rule applies even to average size crafts. The buyer must keep in mind that the money invested in a survey will prevent him from buying a yacht which does not meet his requirements. This will also provide him the opportunity to request that the repairs identified in the survey be carried out by the seller, otherwise he has the right to renegotiate the agreed price.

### ***THE INSURANCE SURVEY***

The insurance survey is requested by underwriters or insurance brokers to verify a yacht's insurable condition and value. However, since they are

generally paid for by the insured, they are too often limited to a quick inspection afloat. These surveys are usually written up in a brief report which sometimes looks more like a brokerage listing or a sales brochure than a survey report, and usually does not include any serious finding or recommendations. Although this type of inspection is generally considered sufficient to determine the open market value of a boat, it provides limited information about the general condition of a yacht, and may therefore be inadequate for insurance underwriters. It is encouraging to note, however, that insurers are now asking for more extensive insurance surveys, including an out of water inspection.

In this case, the survey must cover the items which can affect the structural integrity of the boat, particularly concerning the potential risk of fire and flood. The most important equipment in regards to lowering fire and flood risks are maintained or upgraded fire detection/ alarm/ extinguishing systems, and bilge pump systems. The prior history of the vessel, the qualification and experience of the crew, and their knowledge of emergency procedures, are also important elements included in the evaluation of risk. A pre-purchase survey report, prepared by a qualified and recognized marine surveyor, is usually accepted by most insurance companies provided it has recently been performed.



After damage, a survey is imperative.

### ***THE DAMAGE SURVEY***

This type of survey is probably the best known among pleasure boat or yacht owners since many of them have, at one time or another, issued a damage claim to their insurance company. In this case, the surveyor is appointed by the yacht underwriters "to ascertain the cause, nature, extent and recommended repairs of damage alleged to have been sustained in consequence of the reported incident". Normally, a marine surveyor has no authority to discuss the insurance policy's terms and conditions on behalf of the insurance brokers or underwriters. He cannot make decisions as to whether or not a claim will be accepted, or ascertain the amount to be paid by underwriters.

Depending on the nature of the loss, the surveyor can either examine the damage on his own or jointly with other surveyors if it involves other parties. At the conclusion of the survey, he will prepare a report and send it exclusively to the insurers who have instructed him. This report generally includes the owner or skipper's statement of the circumstances during the time of the incident, along with any additional findings or recommendations. The surveyor will also include an estimated costs of repairs. Finally, the surveyor will offer his opinions and comments on the incident, the damage, the recovery action to be taken against third parties (when applicable), as well as the repair specifications and arrangements.

In conclusion, the qualified marine surveyor is an independent professional who plays an important advisory role for the insurers as well as for any yacht buyer or owner. He can offer invaluable technical knowledge and assistance in the prevention and/or the solution of technical problems associated with the ownership and use of a pleasure boat.