

# Common Deficiencies and Tips

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This is a guide developed to help boat owners locate common deficiencies on yachts and small craft. Many of these items can be remedied for little or no cost at all. This is by no means is this an exhaustive list of deficiencies that can be found on a vessel, but it can serve as a tool to help boat owners become more familiar with critical components that are typically found deficient during survey inspections.

## **Thu-hulls and bilge drainage**

**Shaft logs:** Dripping water? Is the packing gland adjustable or dripless? Is the hose in good condition? Are the hose clamps in good condition?

Adjustable packing glands are bronze and can be repacked with flax packing. If the bronze is green, heavily corroded or covered in salt crystals they can be cleaned with CLR and then protected with a corrosion blocker. If the seal is dripless, sometimes the shaft will have a second set of seals on the shaft that can be installed without removing the shafts from the coupler, otherwise the vessel will need to be hauled out for repair.

For more information about shaft log installation refer to ABYC P-6

**Rudder packing glands:** Leaking? Is the gland adjustable or a sealed bearing?

Adjustable packing glands are bronze and can be repacked with flax packing. If the bronze is green and heavily corroded or covered in salt crystals, they can be cleaned with CLR and then protected with corrosion blocker. Sealed bearing will require a haul out for repair.

**Seacocks:** Does the seacock moves freely?

If the seacock is hard to move or frozen, it will need to be freed up. They can be sprayed with a penetrating lubricant or corrosion blocker and work back and forth. **Do Not Force!!** They can and do break, if this happens water will come into the vessel.

For any questions about installation of thru-hulls and seacocks refer to ABYC H-27

**Bilge pumps:** Does the bilge pump work? Is the pump securely mounted? Check the condition of hoses and hose clamps. Is there an automatic switch and a manual switch? Do the switches activate the pump? Are wires connected with marine type butt connectors?

For any question about installation of electric bilge pump systems refer to ABYC H-22

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## **Propulsion engines and generators**

More marine engines are damaged by overheating than any other cause. If you are not comfortable with engine mechanics seek out the help of an ABYC trained marine mechanic. A “shakedown” sea trial is also recommended in order to determine if the vessels engine or engines will maintain operating temperature and turn proper RPM. During operation always keep a close eye on your temperature gauge.

**Cooling systems:** Are there any leaks? Is the system freshwater or raw water cooled?

Look for leaks or signs of previous leaks with the engine cold. Determine areas where leaks are suspected. Then start the engine and observe if there are any leaks. Repair leaks as needed and only use quality marine parts. Any rusted areas on the engine or cooling system should be treated with a rust converter and repainted with good quality marine grade paints.

If freshwater cooled, check coolant level and condition. Replace if rusty!

**Seawater pump:** Is it leaking? Is there corrosion around the impellor plate?

Impellers are a maintenance item and should be replaced every year as part for the vessel's regular maintenance schedule. It is also a good idea to keep a spare impellor onboard during long voyages.

**Exhaust systems:** Are there any leaks? Condition of hoses?

Look for leaks or signs of previous leaks with the engine cold. Determine areas where leaks are suspected. Then start the engine and observe if there are any leaks. Repair leaks as needed and only use quality marine parts.

Are the connections double clamped?

Every connection in the system should be secured with at least two non-overlapping stainless-steel clamps. Clamps should be a minimum width of a ½” or 12mm.

For any question about installation of exhaust systems refer to ABYC P-1

**Hoses and Clamps:** Are any of the hoses leaking? Are the hoses hard? Are the Hoses old? Are hose clamps rusted? Are hose clamps good quality marine grade stainless-steel?

Many hoses on your vessel will have the date of manufacture printed right on the hose.

**Engine instrumentation:** Are the gauges working? Are they clouded or full of condensation? Does the back-lighting work?

If gauges are nonoperational check to see if the wiring is connected or heavily corroded.

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**Electrical** If you yourself are not a marine electrician do not attempt to make electrical repairs, seek out the help of an ABYC certified marine electrician.

**Batteries:** Are the batteries properly secured? Is there a drip tray under the batteries? Are there more than four terminals on a stud? Are the positive posts covered?

Battery cables or conductors 6AWG or larger should not be connected with wingnuts

For information on battery installation refer to ABYC E-10

**Wiring:** Are there loose dangling wires? Dead end wires? Are there nonoperational receptacles? Is the wire or cable used marine grade?

Is the AC side of the system wired with Boat Cable or Romex?

Romex is a household type wire that should never be used in any vessel of any size!

Are marine type butt connectors used for spliced connections?

Wire nuts should never be used on any vessel of any size!

For information on electrical connections and wiring refer to ABYC E-11

**Reverse polarity indicator:** Is there a polarity indicator located on the AC side of the electrical panel? Is the indicator operational?

Polarity can be verified with a handheld device that plugs into any 120-volt receptacle in the vessels system. Check multiple outlets to verify consistency.

For any question about installation of a polarity indicator or if your vessel should have one or not (most recreational vessels without an isolation transformer should have an operational reverse polarity indicator) refer to ABYC E-11

**GFCI:** (Ground fault current Interrupter). Are there GFCI receptacles located in areas susceptible to becoming wet?

Information on type and installation can be found ABYC E-11

## **Miscellaneous**

**Swim ladder:** Condition? Is it deployable from water line?

A dive ladder stowed below deck is not much use if you are in the water trying to get back onboard.

For more information refer to ABYC H-41

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## **Safety Equipment:**

**Carbon monoxide detectors:** Are they operational? Green Indicator light? Expiration Date?

Most manufactures recommend replacing units every 5 years, the replacement date will be marked on the unit.

Locations?

Main cabin and each sleeping area should have a carbon monoxide detector.

More information can be found in ABYC A-24

**Fixed fire systems:** Condition? Inspection date? Is the Green light illuminated on the indicator on or around the helm?

Most manufactures recommend semi-annual or annual inspections by qualified personnel. This information can be found printed on the unit.

Information on maintenance and inspection recommendations can be found in NFPA 302

**Handheld fire extinguishers:** Condition? Gauge in the Green? Are they inspected, tagged and dated? Are there the required amount on board?

When shaken by hand the material inside a handheld fire extinguisher should move freely.

Information on maintenance and inspection recommendations can be found in NFPA 302

Information on USCG fire extinguishing equipment requirements are dependent on the size and type of vessel and can be found in 46 CFR Subpart 25.30

**Visual distress signals:** Condition? Expiration Date? Accessibility? Required amount?

It a good idea to keep expired flares onboard, but make sure to keep them in a separate location from those that are current.

Information on required amounts and acceptable types can be found in 33 CFR 175 sub part C

**Life vests & type IV throwable device:** Condition? Accessibility? Amount?

USCG requires one Type I, II, III, or V wearable life jacket for each person on board, in addition to one Type IV throwable device.

Information on requirements can be found in 33 CFR 175 subpart B

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