

References to ABYC AC and DC Systems.

ABYC Wiring Rules in italics:

1. This is rock hard and definite. The Bonding or DC grounding conductor shall not be used as battery negative:

11.5.2.2. DC Grounding Systems and Bonding - A metallic hull, or the bonding and DC grounding systems, shall not be used as a return conductor. (See Figures 9A and 9 B, and Figures 10 A and 10 B, and E-11.18 DC Grounding and Bonding.)

2. This is rock hard and definite. The DC Grounding conductor must carry no current. Battery negative carries 80% of the battery positive.

Definitions – Continued that is intentionally maintained at boat ground potential.

DC grounding conductor - A normally non-current carrying conductor used to connect metallic noncurrent carrying parts of direct current devices to the engine negative terminal, or its bus, for the purpose of minimizing stray current corrosion.

3. This is rock hard and definite. Battery negative must be insulated from engine and drive train:

11.16.4.2.2.3. The ungrounded battery cable shall be routed to avoid contact with any part of the engine or drive train.

4. This is rock hard and definite. Battery negative carries 80% of battery positive current so must be insulated:

11.17.2.1. Appliances and fixed DC electrical equipment shall be designed so that the current carrying parts of the device are insulated from all exposed electrically conductive parts

5. This is rock hard and definite. Third wire! The battery negative is not to be used as DC grounding conductor.

*11.18.2.2. Routing - The DC grounding conductor shall be routed from the device to the engine negative terminal or the DC main negative bus **by one of the following means:***

11.18.2.2.1. The DC grounding conductor shall be routed together with the current carrying conductors as a third wire;

11.18.2.2.2. The DC grounding conductor shall be routed as a separate conductor.

6. This clause creates confusion with the remainder of the ABYC document. I think this paragraph applies to all House equipment or small Outboard Engines only. Not larger engines or drive train:

11.18.2.5. DC Grounding Bus

11.18.2.5.1. The DC grounding bus shall be connected directly to the engine negative terminal or the DC main negative bus.

7. This is rock hard and definite. The battery negative is not to be used as DC grounding conductor.

11.18.2.2.2. The DC grounding conductor shall be routed as a separate conductor.

8. Radio Ground Plate. We fit a special capacitor in series with the Tuner connection to the (metal) hull to stop battery negative on the Tuner metal body causing electrolysis The capacitor allows the Radio to work correctly (pass AC).

11.18.2.7. Radio Ground Plate - If the radio ground plate is connected to the engine negative terminal, the connecting conductor shall meet the requirements of ABYC E-4, Lightning Protection, since a radio ground plate may also function as a lightning ground plate.