

TV OPERATION ON AN INVERTER (Correction)

This is an update for the article published in the February 2013 *Blue Beret*

QUESTION: I have a 2008, 20 ft. Safari with a 21 inch TV. I bought a 140-watt plug-in inverter that is right next to the TV. Is it ok to plug in my TV? How long will it run before my two batteries run down? Is the wiring sufficient? Thanks in advance, Bob.

ANSWER: The inverter power rating limits the size of the TV you can safely use. Your TV power requirement should be about 50% less than the inverter rating. Check the input power requirements for your TV. For a 21" TV it can run from 40 to 120 watts depending on the type of screen (LCD, LED, CRT tube, etc.). The TV power requirement increases rapidly as the screen size gets larger. For RV use you should use an LED or LCD TV. The LED operating power for a 19 to 22 inch set is about 35 watts and for the LCD about 40 watts. The standby power is typically 0.3 watt for LED and 1 watt for LCD. Standby power is always required for semiconductor screens, even if the TV is turned off. It provides a quick turn on for the TV without a long warm-up period. So unless you unplug the TV, there will be a constant current drain on your battery of about .025 amps for an LED unit. This is about the current drain for a typical pilot light bulb used on most RV's. A typical 22" LED unit is the Samsung LN22C400P or the 19 inch LN19A330J1. Assuming your TV requires 40 watts then:

$$P \text{ (power)} = E \text{ (voltage)} \times I \text{ (current)}$$

Your current requirement, with 120 volts AC, would be about .33 amps (or 3.3 for 12 volts DC). This is easily supplied with the cigar lighter plug-in connector and wires usually provided with this size inverter. I would limit the continuous current draw to about 7 amps using the cigar lighter. If you need more current for a larger inverter, then you should connect through a fuse directly to the battery. Your DC wire size depends on the current required and the length of the run. Keep the connections to your batteries as short as possible. A typical installation is under the front couch with a standard 120 VAC receptacle (for the inverter output) installed nearby.

Assuming you have a battery capability of about 150 amp/hours (two coach units), you could run your TV for several hours with no problems.