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## ENTERTAINMENT SYSTEMS

With advanced technology and reductions in prices entertainment systems that were available only at home or on high end boats are now affordable to the general boater.

### SATELLITE TV

In motion satellite TV dishes are now available in dishes as small as 14" which will fit on smaller boats in the 25 to 35 ft. range without looking overpowering. These units are 40% smaller than the previous 18" dishes that were previously the smallest. In motion satellite dishes allow you to watch TV while underway, at dock or swinging on a hook in an anchorage. The marine units should not be confused with the RV units for motor homes and trailers. These units work great for their application and are much cheaper. They will lock onto a signal but once the unit moves it has to reacquire the signal. Since boats are constantly moving they do not work well.

The marine in motion satellite systems work on a general principle. They require a receiver the same as a home system which will come from your service provider such as Bell ExpressVu in Canada or Direct TV in the US. Some service providers signal is circular polarization and some linear. You have to make sure the unit you purchase is for circular or linear polarization. The most common in motion satellite systems work on circular polarization.

The satellite system locks onto the satellite signal and it has motors for azimuth rotation and elevation so that it stays on the signal even though the boat will roll and pitch. Some units have built in GPS receivers to acquire signal quicker when first turned on.

Satellite signal can be affected by weather the same as a home based system. The signal is a microwave frequency and can be blocked by moisture in the air.

Installation is very important for maximum performance. The proper size coaxial cable is included with the system and has high quality F connectors. Cutting or splicing the cable from the satellite dish to the receiver can greatly degrade signal. Some suppliers will not provide warranty if the unit is not installed by a qualified installer.

The location of the dish on the boat is important to ensure we do not have any signal blockage. In southern Ontario we need the dish elevation pointing at around the low 30% range. Since the satellites are above the equator the dish will acquire signal in a southerly direction. Therefore the dish has to have no blockage anywhere in a 360% rotation of the boat. Remember it takes very little to block signal, so a land masses an adjacent boat nearby or a temporary obstruction on your boat can create blockage problems.

The new 14 inch dishes only require a single coaxial cable from the satellite dish to the control unit which eases installation. The bigger units require two coaxial cables and a control cable. Some 14 inch dishes support one receiver only. Therefore everyone has to watch the same channel. Optional units are available to use multiple receivers with multiswitches allowing different channels on each TV. Receivers with RF (Radio Frequency) controllers are a good option so that the receivers can be located in a remote out of the way location as opposed to the Infra Red receivers that you have to point the controller at. Space is limited on boats minimizing suitable locations for components.

With the availability of Flat Screen TV, s we can now locate units in places that space was a limiting factor. Most boats are prewired with coaxial cable and the receiver outputs can be connected to the ships system. This is the cheapest and easiest installation. This is also the least desirable for picture quality. RCA cables give the next best quality of picture. HDMI is by far the best quality signal for excellent picture and sound quality. Most receivers have multiple outputs. The installation cost is much higher if new cables have to be routed through the boat.

The new navigation screens now on the market have video inputs allowing you to watch TV on the navigation screens. Some also have SVGA outputs allowing the navigation screen to be viewed on selected TV, s

## SATELLITE RADIO

XM and Sirius satellite radio reception are now enjoyed by boaters. Most new radios now are factory ready for satellite connection. One thing to keep in mind is that the car antennas that come with the packages that you get in most electronics stores do not work on boats. You have to purchase a marine satellite antenna.

## INTERNET

Overall Satellite internet services are cost prohibited for general entertainment purposes. There are WI-FI booster systems that are ideal for picking up signal from WI-FI hotspots. Some of the smaller entry units will pick up signal up to a mile from the hotspot dependent on line of sight and conditions. Units are available for ranges up to 10 miles and can be effective in anchorages where WI-FI is available. They consist of an antenna and a receiver. The receiver can be connected to a computer with an Ethernet cable. The larger system can be set up to run several computers wireless. The can handle VOIP.

## CELL PHONES

Cell phone boosters are available now which can boost signal up to 30 miles or more under proper conditions. Some units require a direct connection to booster and antenna. They have the disadvantage of requiring a specific remote antenna cable for each cell phone. Other systems are hardwired with a receiver transmitter and interior antennas. These units can handle several cell phones at the same time.

The pictures are courtesy of the following:

Sea Tel satellite system      [www.seatel.com](http://www.seatel.com)

Radio at Sea Wi-Fi boosters      [www.radio-at-sea.com](http://www.radio-at-sea.com)

M-Tech Cell phone boosters      [www.marinetechologies.net](http://www.marinetechologies.net)

