TV's Onboard

By Wayne Canning, AMS

Ok I know the purists out there are going to say Television has no place on a boat! After all you are supposed to be getting away from that type of thing. Well I am a baby boomer and I grew up with TV. I like to be able to watch the news and it is helpful to see the local weather before setting out (that's my excuse and I'm sticking to it!) And of course it helps to have something to keep the kids happy as well. It is also nice to be able to watch TV or a movie on DVD on those cold rainy days when you are stuck inside the cabin. With the advent of small lightweight DVD video disks it is now practical to carry a large selection of prerecorded movies and TV shows with you.

As a surveyor I find the boat without at least one TV is a rare thing these days. It is almost as important and common an item as a stereo or depth finder. Some installations are as simple as setting the TV on a shelf and plugging it in and others are as elaborate as the TV popping up from inside a cabinet when you turn it on. Likewise antenna systems

can range from the basic old rabbit ears to sophisticated satellite receiving systems that will remain fixed on the satellite even while the boat is at sea. And to make matters worse on February 17, 2009 all full-power television broadcast stations will stop broadcasting in analog format and broadcast only in digital format. This means if you have a TV onboard now that receives broadcast signals you will need to make a change. Whether you are upgrading your system, installing a new system, or hoping to keep your existing system working there are a lot of options to consider.

Let's look at the types of antenna systems first as this can be the most complicated and confusing part for most people. It is also the key to any other parts you install. Getting your TV signal is not as simple as GPS or radio, you have several choices and in most cases you will want to be able to use more than one source at different times. The basic sources are as follows:

Cable TV, this would come from a shore cable connected to a source provided by your marina and can only be used at the marina. Not all marinas have cable service so if you are cruising it is hit and miss. Some marinas charge for this, others do not. This is a great source for signal if and when you can get it. Most boats are equipped with a shore TV phone inlet that looks like the one for shore power. If your boat does not have one and you use a TV you might want to consider installing one.

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Broadcast TV: This is the analog signal now transmitted by most TV stations. You receive this with your on set rabbit ears or perhaps a built a antenna system. For many years this was the only way to get TV on a boat. This is also the simplest system other than cable. You just hook up your antenna and turn the set on. The draw back is you are limited to local TV stations with a broadcast range of about . You may be able to receive 10-15 channels near big cities or only 1 or 2 and in remote locations and if way off the beaten path none. The big advantage is this is an inexpensive system to install and maintain. No monthly fees and for the most part inexpensive equipment that requires little maintenance. Antennas for broadcast TV are usually simple and inexpensive and most will benefit from the use of an amplifier. The better systems will have a permanently mounted antenna hard wired with coax cable to amplifier and then to the TV or TVs. These antennas are omni directional meaning they will work just as well from any direction. This is import as you do not want to have to rotate the antenna for every location or worse when you are swinging at anchor. Most marine antennas are round saucer shaped discs mounted as high as possible. For power boats under the flybridge brow is a good location and on sailboats the masthead would be an idea location however most sailors do not want to add weight and windage of a TV antenna at the top of their mast. Rule of thumb though is the higher the better. The use of high quality coax cable will make a big difference in how well your system works. Most TV coax is RG-59 type but you are better off using RG-6. Do not inch pennies on the cable as this is often the hardest thing to install, do it right the first time and you will be glad you did. Most marine antennas will have a matching amplifier to help boost the signal, these units are powered by either 12 VDC or 120 VAC and in many cases both. Any antenna will greatly benefit from the use of an amplifier so if you do not have one in your system I strongly recommend installing one. If you do not want to go to the trouble of a permanent antenna installation you can simply hoist your antenna as high as possible and run the cable to the TV set or connect it

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to the shore cable inlet (one more good reason to have this.) The amplifier could then be plugged into a 12 VDC or 120 VAC outlet. Personally I think if you watch much TV the permanent installation is cleaner and you do not have to string wires all over the place just to watch the news or weather. Of course with the coming of the new FCC mandate to change to digital signal things will get a bit more complicated. The good news is you will be able to still use your existing antenna and wiring. DTV is broad cast in the UHF frequencies the channels above 14. Almost all marine TV antennas will work well for this. I will discuss making the change from analog to digital a bit later but for now let's just note that this is one of the simplest and cheapest ways to get your TV signal. Even if you have a high end satellite system or are planning on installing one you may want to have a broadcast system as a back up.

Satellite TV or DVB (Digital Video broadcasting): One of the biggest advantages of satellite TV is you get good quality signal in even remote locations far from major cities. You have as many channel choices as most cable systems, so if you just have to see that football game in the middle of nowhere satellite will do that for you. However these systems are not cheap and require more maintenance than standard broadcast systems. Satellite antennas come in 2 basic types, stationary antennas and stabilized antennas. Stationary antennas are like those you see mounted outside houses and on roofs, they are the small dishes mounted in a fixed location aimed at the satellite. The advantage to these is they are cheap but still about double the cost of a broadcast antenna. The disadvantage is the need to be carefully aimed at the satellite and stay that way. We all know boats do not stay in the same place very long so these antennas are not practical onboard most boats as even tied in the slip the boat will move to much to be able to hold a signal. You can however use them successfully on the dock or better yet secured to a piling. If you do not have cable TV at your local marina or travel from one marina to another, these will work well for you. Stabilized satellite antennas will automatically remain fixed on the satellite as the boat moves and can even be used at sea. These are however very expensive with prices starting at $1500.00 and some installations can exceed $10,000.00. I would also recommend you have such a system professionally installed as there is more to this than just connecting cables. Both types of satellite antennas will require satellite receivers for each TV set onboard. Satellite also requires a monthly subscription to a service such as DIRECTV, Dish Network or other DVB service. This is not a problem if you live on your boat or spend a lot of time aboard but for most of us it is an expense not worth the occasional weekend

onboard. A couple of more things to consider are the size and weight of theses systems, as well as the additional power drain. The antennas are larger than most radar antennas and need to be located in a position that will have a clear line of sight to the satellite from all angles. Keeping them lower and closer to the vessels center of rotation will help the system remain locked on the satellite as well. All this extra equipment needs electricity to keep working so this will add to the demands on your power system. I would strongly recommend consulting a professional if you are considering one of these systems as there are complicated to install and set up. Even getting a simple system with a stationary antenna on the dock installed and working correctly can be a challenge. Satellite can be a great way to get high quality TV with a large number of channels onboard in remote places but it does take more effort space and expense to get there.

Finally before we move out of antennas systems lets look at the upcoming changes to the national broadcast system. On February 17, 2009, federal law requires that all full-power television broadcast stations stop broadcasting in analog format and broadcast only in digital format. In Southeast North Carolina where I live this change has already taken place. We have been chosen as a test location for the rest of the country to find the problems with the change over. The good news is as far as I can tell the change went smoothly. I have heard few complaints. The bad news is this change can be a bit of a pain for those of us with older TV sets onboard who rely on broadcast TV. Unless your TV set has a built in digital tuner will not be able to receive broadcast TV after February 17, 2009. The easiest way to fix this is to replace your TV or TVs with ones that have a digital tuner but that is an expensive way to go. I bought my 2 TVs 2 years ago and they are not digital. I do not want to spend the money to replace them at this time so what can I do? The cheapest solution is to purchase and install an analog to digital converter box. You will need one box for each TV onboard. The best part about this is the government will even give you 2 $40.00 coupons towards the purchase of two of theses units. Visit this site for more information and to get your coupons www.dtv2009.gov. To get more information in general check this site out www.dtv.gov. There are a few things you need to consider after you get your converter box before installing it. The first is the key part of the second sentence of this paragraph “all full-power television broadcast stations” the part is full power stations but that does not mean all stations, many smaller local UHF TV stations will remain analog. Keep this in mind before connecting your converter. Also if you travel outside the country to the islands or Canada you will still need analog as this is not scheduled to happen until August 31, 2011 in Canada and I have not been able to determine what is happening in the Caribbean seems it will depend on where you are and when. Bottom line is you will need to be able to get both types of signals. Some converter boxes will act as a pass thru when not on so that you can use your TV as if it were not there but others may not and some need to set in menu to allow analog signals The best solution is to use the converter box’s A/V output not the RF output if you can but of course this has its draw backs as well. You may not have enough open inputs available on your TV if you have a DVD player connected. If you are using a 12 VDC TV and do not have an inverter or generator you will have to get a 12 VDC converter box. These are available but you are not likely to find one at the big box stores so plan ahead for that. It is beyond the scope of this article to cover every situation but hopefully you have more to think about before deciding just how to proceed. If you have a satellite system or are

planning on installing one you will not need a converter box but even with satellite you may want to install them as a backup or to get local weather. One last note although the change will not take place till February 17, 2009 most TV stations thru out the country are now broadcasting a digital signal along with their analog one. So now is a good time to start your change over. On the positive side I think you will be impressed with the quality of the picture and sound as well as the additional features available, like a 24 hour local weather channel! Locally I found we had more channels to choose from with local stations broadcasting multiple channels. The picture quality is surprisingly good with the only problem I saw was the pixalising of the picture when the signal got weak. Also the sound would drop out on weak signals which can be enjoying. You can however turn on captioning so that when the sound drops you still can tell what's happening. Don't get me wrong though overall with a good signal you get great quality sound and video. Just one more reason to spend the extra time and money on a quality antenna system.

Now that we have figured out how to get a signal to our TV the next thing to think about is what type of TV to use or get. If you already have a TV and do not plan on changing anytime soon you should be good to go with the information above. We do need to understand the abilities of your currant set though as the changes to Televisions and DVDs take place. The biggest change other than going from analog to digital is the upgrade to HDTV or high definition TV. One thing you need to understand is just because you have digital TV does not mean you will have HDTV or that you will need to upgrade your set to HDTV. HDTV is nice but your old set will continue to work fine with the new digital broadcast and satellite systems. Even if you upgrade your TV to a HDTV do not expect to get HDTV on all digital and satellite systems, not all are sending HDTV signals yet and some only on certain channels. TV's come in 3 basic types CRT or the old tube type, LCD flat screen and Plasma flat screen. I would think for most boats the only real choice would be the LCD as these are cost effective light and can be installed place you never could install TVs in the past like on bulkheads. Make sure if you are buying a new TV it has a digital tuner surprisingly not all do, and I like the ones with the DVD

players built in as this keeps wiring simple. There really are a mind boggling number of types of TVs out there with all kinds of setups and inputs. Think about your needs and plan what you want before making a purchase. Look at what is available and see what works best for you. I found a really neat TV/DVD player with FM radio that was designed to mount under a kitchen cabinet. This unit worked great in my V-berth cabin mounting it up under the foredeck the screen evens fold s up when not in use. The choices really are amazing. A couple of final notes on TV installations make sure your units and properly secured including things like DVD players and converter boxes. Take the time to neatly secure the wires and connections. Label the wires as you install then to make trouble shooting later easier. Something else to consider when installing a TV system that will run off batteries or an inverter is that

most of today's electronics continue to draw power even when turned off. This can place an additional load on your batteries and result in dead batteries. An easy solution for this is to install a switched power source so the power supply can be turned off to this equipment when not in use. I have installed a simple wall light switch next to the 120 VAC outlet that powers the TV and equipment. This way I just turn off the switch to remove power only from the outlet used for the TV. Likewise antenna amplifiers will continue to drawn power unless switched.

Finally a word about DVD players and sound systems. A couple of years ago our house got hit by lightening and we had to replace most of our electronics. I was surprised to find that it was difficult to find the stereo systems I had known for years. Everything these days are "entertainment systems." The video is now truly part of the overall sound system in most homes. What is true at home is also true on the boat. Most TVs seem to have rather poor speakers with the assumption that you are going to connect to an outside sound system. If you enjoy a good movie on DVD and want the sound to go with it this will have to be another area requiring careful planning. Once again I will recommend keeping it simple and not getting carried away. I once had a customer who had the top of the line sound and video system complete with a computer like remote control. The only problem was it was so complicated he could not figure out how to use it. Latest and greatest is not always the best and just because you can does not mean you should. Good speakers properly installed will do more for your system than fancy high priced 500 watt equipment. Remember you are in a small space and do not need the power of a home system. Check into some of the automotive systems out these days you will be surprised at the quality of the sound in a small package. You can find small 12 VDC DVD players that will work just as good as the home type units. Most 12 VDC marine stereo units now have aux inputs so you can use the same unit for both music and watching TV. And as mentioned before TV DVD player combination units are now common place and make for a cleaner simpler installation.

Setting up a TV on a boat is not as easy as it used to be, but on the other hand the TVs have gotten more compact, lighter and easier to physically install and the quality of the picture with digital and satellite broadcasts now rivals that of cable. The DVD disk format now makes it possible to carry a large selection of pre-recorded movies and shows on your trips. The trick is to understand what you want from your installation. Careful planning and knowing your needs and limitations will save you time, money, and aggravation. Generally I recommend keeping things simple, but if your budget and space allow the possibilities for a system every bit as good as you have at home are now possible. Due to the smaller more compact LCD TVs and DVD players TVs in more than one cabin and in some cases in every cabin are now becoming normal. Systems range from elaborate large screens with high end sound systems and automatic tracking satellite antennas to basic TVs with a set of rabbit ears. But Television has become as much a part of the ships electronics as a depth sounder and GPS. Getting the most out of your systems will depend on knowing what you want and taking the time to plan it carefully.