First Time Out – Water Systems

This is the second in the series called First Time Out. I don't pretend to have all of the answers. So, when you don't know something you say you don't and ask someone who does or you read about it to learn. Your trailer has two separate water systems. They are the fresh water and the waste water systems. Let's look at each system one at a time.

Fresh water

This is the water you drink, bath in, cook with, and wash dishes with. There are two systems that supply fresh water.

Water Tank System – this system uses a pump controlled by a switch on the tank indicator panel to pressurize the system which draws water from a tank. The tank is located in the trailer and you will have to look at your owner's manual to find the location. The tank is filled from a port behind a locked door on the outside of your trailer. Unlock the door and you see a cap and a small hole with a screen on it. This is a vent opening from the tank. As you put water in the tank, the air inside is displaced and flows out of the vent. As water is drawn from the tank, air enters through the vent to prevent a vacuum lock.

To fill the tank, I recommend that you use the same hoses that you connect the trailer fresh water system to a water hydrant at an rv site. This will ensure that you get clean water and you will know what the water has been in contact with. I install our RV water filter (more on this later) and use a filling device from Camping World:

http://www.campingworld.com/shopping/product/water-tank-fillers/594

I put a stainless steel hose clamp around the clean plastic nozzle where it slides over the yellow valve. I have the one with the shut off valve. This is a lot easier than running to the hydrant to shut off the water. I fill the tank with the amount of water that I think we will need on this trip. Normally, we use park water so I put enough water to flush the toilet, wash hands, etc. If you are going boondocking (dry camping) I would wait until you get near where you are going to fill the tank all the way. Water weighs 8.5 pounds a gallon so the weight adds up quickly. Read the owner's manual on how much to put in the tank. I never fill the tank any more than when the indicator shows full on the tank monitor panel.

To pressurize the system, turn the pump on with the switch on the tank monitor panel. You will hear the pump start and pressurize the system. Once the pressure in the system has reached the shut off pressure the pump stops. As you open a faucet or flush the toilet, the pump will cycle on and off to keep pressure in the system. DO NOT run the pump dry. You will burn it up and it is a pain to change if you don't change them all of the time. Also, if you plan on being away from the trailer for an extended period you may want to turn the pump off. Some do and some don't.

City Water System – this section uses water under pressure from the RV park or city water system. There are several things that you need to be aware of before using this system.

First of all you will need a pressure regulator. The RV fresh water system is TESTED to a pressure of 100 psi. I have seen water pressure surges in the area of 120 psi. Just because the system is tested to 100 psi does not mean that you can operate it at that pressure. You might get away with it for some time then something lets go and you have a flood. Purchase a full house regulator such as the Watts 263A which has a two inch wide gauge on it to show you what the pressure setting is at. The small regulators sold at Camping World and other places simply do not have enough volume to provide the water for a good shower, washing dishes, etc. The Watts line is available from the following:

http://www.rvwaterfilterstore.com/

I have no connection with any site listed here but they are supplied to assist in finding what products I use. Use the pressure regulator all of the time. You never know when a system might have a change of high pressure in it such as during a fire somewhere in the system when the pressure is raised to bring water to the fire site or other emergency.

Second, you will need a water filter. Again, you get what you pay for. I use a jumbo canister (very large) with a carbon block filter. There are a lot of different filters for various uses and a ton of information about them. This is one of the sites:

http://www.rvwaterfilterstore.com/

I always connect the filter when we are using the city water connection or filling the water tank. It keeps rust and other things out of the tank and the water system.

I spray the RV site hydrant with a mixture of 50/50 bleach and water before I connect to it. I then connect the length of white RV water supply hose to the hydrant which is long enough to reach the trailer. The water filter is connected next so that we have full water pressure running through it. The regulator is connected next in line so that it gets clean water and lowers the pressure to 50 psi. A short hose is then used between the regulator and the trailer. Some people put a shut off valve between the end of the hose and the trailer water connection so that they can turn the water off in a hurry if need be.

Once I have the water connected, I go to the outside shower and run both hot and cold water until all of the air is out of the system. This allows me to vent the air without filling the gray tank needlessly.

When we are getting ready to leave the site, I drain the water hoses and connect the male to the female end to keep “critters” out of the hoses. A shot of bleach once in a while then flush with clean water will keep the hose clean and safe.

Some people turn the water supply off to the trailer when they are gone for a long period of time. It is up to you.

Maintenance on the water tank system. You need to follow the instructions in the owner’s manual concerning the sterilization of the water tank and water lines. Follow the guidelines in the owner’s manual and if there is any doubt, then sterilize the system. Visits to the ER or Doctor are not fun or cheap especially in a strange town or location.

Water Heater – this is a tank that heats and holds hot water. There are two systems that heat the water. One is propane using a burner to heat the water and the other is electrical which uses a heating element in the tank. You have to be connected to an electrical supply to run the electrical side. I do not recommend that you use the electrical heating

if you are using a generator to power your trailer. Almost all generators will not have enough wattage to run the electrical heating element and the rest of the electrical load in the trailer.

When we arrived at our camp site and have electrical hook ups, I first make sure that the water heater tank if filled with water, and the air has been vented. Then I start the water heater using the both the propane side, by turning on the water heater switch in the area of the water tank monitor panel and the switch in the kitchen to start the electrical element heating. Once the water is hot, I turn off the propane and just use the electrical side to heat the water. If we have a large demand for hot water, I turn on the propane side to allow for a fast recovery. Once the need is over, I switch off the propane side. Make sure that you switch both sides off when you leave your camp site.

Maintenance on the water heater. About once a year you need to check the anode rod in the heating tank. If you are not sure about this, take the trailer to a RV service center and have them inspect and/or change the anode rod. The anode rod protects the tank from electrolysis (a chemical reaction that would corrode the tank and eventually cause a leak). The anode rod is destroyed and needs replacing depending on how much the tank is used. The manual that came with the water heater will tell where it is at and what it looks like. Changing the anode rod is relatively simple but we will save that for another day.

Draining the main water tank is easy. There is a valve under the trailer which will empty the tank. Open the valve and the water runs out. There is what are called low point valves in the water system which are supposed to drain the system. Look in your owner's manual or in the download section of this site for more information.

When we get ready to leave the camp site, I take the short hose which is connected between the regulator and the trailer and connect one end to the inlet of the water filer and the other end to the outlet of the water filter. This keeps "critters" out and prevents spills from water trapped in the filter.

Waste Water Systems

The waste water system is composed of two and maybe more tanks which hold waste water until they are full or you are ready to dispose of it (legally). Some trailers have two gray tanks, and one black tank. Look in your owner's manual for the number and location of the tanks.

Gray Tank – the gray tank collects all of the water from the sinks and shower. Your trailer may have more than one, see your owner's manual. Between the gray tank and the sinks and shower/tub are a bend in the pipe called a P-trap. The P-trap acts a seal to keep smells and gases out of the trailer by trapping water in the bend of the pipe. The water stops the smells and gases by filling the pipe. As water is drained, the water passes through the P-trap but some is always trapped there to act as a seal. In hot weather, this water can evaporate and needs to be replaced. If you park your trailer in hot weather longer than a week or so, you need to check the P-traps and add a little water to them. The gray tank is also equipped with a vent which goes through the roof of the trailer to the outside. The vent allows air in the tank to escape as it is displaced by the water flowing into the tank. It also allows air to enter the tank as the water is drained to prevent a vacuum lock. Only hand soap, dish washing detergent, and shampoo should be allowed in the gray tank. Do Not add any other chemicals available for home use. You can wind up with a very expensive repair as these chemicals can damage the system causing leaks. Cooking grease and such should not be dumped into the gray tank.

Black Tank – the tank that is connected to the toilet only. The toilet has a valve in the bottom of the bowl that opens and closes to allow the waster matter to drop into the black tank. There are a lot of commercial chemicals available to

control odors and break down the waster. The easiest and best as far as I am concerned is the GEO method (search this site for the GEO method). Again, use only products design for RV use only. This includes toilet paper. If the toilet paper will not break down in a class of water in a few minutes, you don't want to use it in your black tank. I use the RV type toilet paper.

Make sure that you keep water in the toilet bowl at all times. This does two things. First of all it acts as a seal to keep odors and gases from the black tank out of the trailer. Second, it keeps the seal around the valve at the bottom of the toilet bowl soft so that it does not leak.

Toilet Paper - Some think it is something that polite people don't talk about. Well, you need to use the correct kind or you are going to have a black tank that is stopped up! Not fun by any stretch of the imagination. There are a lot of RV designed toilet papers on the market. If you want to use something else, take a sheet of it and put it in a glass of water. If the sheet dissolves in a few minutes, then you more than likely will be fine. If it does not, then don't use it. Having a stopped up black tank requires lots of effort to clean and unclog the lines, valves, and so on.

Dumping The Tanks – Not one of the fun chores of camping. I purchased some strong ABS gloves with long cuffs for this task. Start out with a plan. I connect a section of clean drain pipe to the secondary valve (I added a second valve where the outlet for the drain pipe is to stop surprises due to a leaky valve or forgetting to close the tank valve). The clean section allows you see what is happening. Next I connect the sewer hose to the clean section and then a 90 degree elbow which fits into the dump station. I then connect a hose which is gray in color (which is only use for this purpose and to wash the trailer while we are on the road) to the tank spray connection to help wash out the black tank. I connect a valve between the gray hose and the trailer tank spray connection so that I can control the flow water without having to return to the hydrant. I turn on the tank spray and allow it to fill the black tank all of the way up if it is not full. Once the tank is full, I open the black tank drain valve and the secondary valve. The contents flow out and you can see the results through the clear section of pipe. Once the water flow slows to a trickle, I close the black tank valve and allow the tank to fill all the way up again. Then I dump it again. I keep this up until the water is clear coming out. I then close the black tank valve and allow a few gallons of water to flow into the tank to mix the bleach, water softener, and cheap clothes washing detergent with.

I then open the drain valve to the gray tank. The gray tank takes longer to drain as the pipe to the outlet and secondary valve is small than the black tank pipes. While this is going on, I go inside the trailer, put the chemicals in the black tank, fill the toilet bowl with water, and stow the chemicals. I return to the sewer connection area and wait until the gray tank is empty. I then close the gray tank valve, the secondary valve, and cap the connection once I remove the clear pipe section. I use the gray hose to wash out the clear pipe section and the sewer hose. The sewer hose is returned to its carrier under the trailer while the 90 degree elbow and clear pipe section are stored in a .50 caliber ammo can mounted on the back of the trailer. The black ABS gloves are stowed in the electrical compartment just above the sewer connection after being wiped with bleach wipes.

I do not recommend traveling with the waste water tanks full. You may have to, but dump as soon as possible. My concern is the amount of weight that you are adding to the trailer. Depending on the content of the water, waste water can weigh as much as fifteen pounds a gallon.

Adrian: The clear sections come in straight, 45 degree, and 90 degree elbows. I use one for the dump hose and when I use the macerator (i.e. poop disposal a macerator is a small machine that chops up everything and pumps it out a garden hose). Most RV parts/accessories stores have them, even Walmart. Pricing varies a lot. If I'm not in a hurry and have to find it locally today, Web ordering is always an option.

Final Thoughts

Some water use ideas. To keep the gray tank from filling up as fast, you can wash dishes outside using the external shower and a container to wash them in. You can dump the dish washing water into the black tank. The soap in it will help to clean the black tank and slow down the filling of the gray tank. Use two containers for washing dishes, one to wash in and the other to rinse in. Then dump them in the black tank or outside. Make sure all of the faucets and shower valves are closed and there are no drips.

One thing that I think that everyone that has a new trailer should do the first time that you connect water to the trailer is to check all of the fittings, P-traps, sinks, and so on for leaks. This would include the connections to the external shower. During storage and in warm to hot weather, you need to check the P-traps to make sure that there is water in them to act as a seal. Otherwise, you make find a disagreeable smell in your trailer. This also applies to the toilet to keep the seal soft where the knife valve dumps the contents into the black tank. There are lubricants and treatments for this seal but I find water works and is cheapest.

I have a clear plastic container which I carry the pressure regulator, water connections, tank filling device, and other odds and ends in. It stays in the compartment on the passenger side where the water filter is carried. It is cleaned about twice a year depending how many times things are in and out of it.

So long from the Fox's Den deep in the swamplands of Louisiana….Laissez les bons temps rouler!!!!