

Things You May or May Not Know

by Dom Bollella

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About Dom Bollella

Dom has been an RVer since the year after he and Ruth were married, and they are long-time DOAI members. He thanks his late father-in-law for getting him hooked: he purchased his first of four motor homes in 1972, and Dom had the privilege of driving it several thousand miles (Dom's father-in-law was a very generous man). Over the years Dom drove all the coaches, and has had eight coaches himself (Dom and Ruth are on their second Discovery). Because of his long history with RVs, Dom has learned countless lessons, some of which he admits ranged from "I told you so," to "I should have known better," to several baptisms by fire (usually without bodily injury). A sharing man, he does not guarantee his words will be pearls of wisdom, but hopes that somebody out there may avoid an "oops!" or two after reading what he has to say.

Down and Dirty

1. Always dump the black water tank first followed by at least two-thirds tankful of grey water. This helps clean and flush out the sewer hose.
2. Don't dump your black water tank until it is at least half full. This assures that solids will leave the tank.
3. When hooked up to a sewer line, *do not* leave your dump valves open. Obviously the solids will only accumulate under the toilet, but not so obvious would be if you left the grey water valve open. Here, too, the solids and general soap sludge will remain at the bottom of the holding tank. It is recommended that the grey water tank be at least half full before dumping.
4. Flushing out your holding tanks *frequently* will help keep the tank level probes clean.
5. Everyone has an opinion as to what to add to the holding tank(s) to control odor. You know that if you start out by using a formaldehyde-based deodorant, you will have to completely flush the tank with fresh water before using a digester-type tank treatment. I prefer the eco-friendly digestive treatments, especially with the larger holding tanks. Don't hesitate using some in the grey water tank every now and again; it helps retard the sour odor that can develop in that tank. When my coach is at home, I usually open the emptied grey water tank's valve to allow air into the tank to retard the anaerobic bacterial growth (those are the ones that create the sour smell).

I'll Drink to That

1. Before filling your fresh water tank when leaving for a trip add about one-quarter to one cup of bleach into the empty fill hose before filling the fresh water tank. Then, fill the tank and let it stand for at least three hours (I usually do this the day before and let it stand overnight). I also usually let the bleach water run through each of the cold water faucets, until you can smell the chlorine (smells like a swimming pool); this allows the lines for each sink to be sanitized. The next day, drain the tank of the chlorinated stuff, and you might also run some through each of the faucets in the rig again, including the hot water side (kind of a final touch for the germ conscious).
2. If your coach does not have a drinking water filter, get one! You may choose from a number of different types, everything from for filtering tastes, odors, chlorine, iodine, metals to bacteria and protozoa. Remember, you don't have to go to Mexico for Montezuma to get his revenge.

Juice

If your rig doesn't have a voltmeter built in that can be easily accessed, purchase one. I have an old dial face meter that is wired directly to a two-prong plug that can be plugged in anywhere I can see it easily. Why do you need such a device? Campground power can often fluctuate. If voltage drops below 100 volts, you should turn off your A/Cs and not use the microwave. Low voltage will damage the compressors when they attempt to cycle.

If you have an inverter, it will invert your 12-volt DC battery power to 110-volt AC, but there are several things you should be aware of. First, find out which outlets (or devices) are wired to the inverter. Usually, the front TV, VCR, DVD, CD player or any combination of TV plus accessory is wired to the inverter. Also, anywhere from one to several outlets is normally wired to the inverter. Why do you need to know this? The manufacturer doesn't know that you don't really know how much power it takes to run any or all of the things the inverter *may* serve. Batteries, two or four, 6-volt deep cycle "golf cart" type are installed to serve your needs. The needs include *all* the 12-volt lighting, radio, furnace/s (fans and ignition), ignition for the propane water heater, etc.

If you add to that load a demand for 110 volts inverted from 12 volts, you may be asking too much from your batteries. This would especially be true if you did so for any extended period of time. This can be as little as 15 minutes up to several hours, depending on the power demand. *You will kill your house batteries.* An inverter is not an AC current generator. That's why the coach with an inverter will come with a substantial AC generator (usually 4.8 to 8 kilowatts of output). Use your inverter wisely. Something that I was told by a dealer serviceman was to switch the inverter off at the inverter, and use the inside (at the systems panel) switch to turn it on and off.

Fuel Additives

Stabilizer additives are available for both gasoline and diesel fuels. Use them before storage. Modern gasoline does not require extra additives to run today's gasoline engines. Leaded gasoline is neither recommended nor needed for any modern application. Octane boosters should be reserved for racecars not motorhomes. Modern diesel fuel purchased at major outlets and truck stops normally will contain all the necessary additives for the season. In the North during the colder months, an anti-gel will be present, while in the South during the warmer months, an anti-fungal will be added. Problem: if you

are a snowbird, you should purchase the proper additive necessary for the direction you are traveling in. These can be purchased at any truck stop and most automotive supply stores. Add them to your fuel tank as the ambient temperature begins to shift. The low sulfur fuel question is raised often among diesel operators, and I haven't heard a clear resolution yet as to what is needed or not as far as additives are concerned. I personally purchase a gallon or so of a reputable brand 'all purpose' diesel fuel additive and add it to my fuel at given intervals just to be on the safe side. I know that dirty diesel injectors and some water in the fuel can change the way a diesel runs so I try to stay on top of it with extra additive.

Water in the Fuel

Gasoline is somewhat forgiving of small amounts of water in the fuel. As a matter of fact, during WW II some of the more powerful fighter aircraft had water injection systems to boost the combustibility of the gasoline and lower the octane demand without damaging the engine (notably the P-51 Mustang and P-38 Lightning had water injection systems).

Diesel fuel, on the other hand, is very sensitive to water being present. This is why you will note that your diesel power plant has a separator and various design innovations to compensate for water contamination. You will also note that your dashboard display has a *Water in Fuel* warning light (at least I know that my Freightliner Chassis does). The fuel-water separator that you should access and observe at every fill-up is a 10-micron filter with a glass observation bowl attached to its bottom. It is a bit larger than a quart-sized oil filter and the bowl is obvious, with a drain valve at the bottom. This filter should be located where it can be observed and drained if necessary without having to crawl under your coach or into the engine compartment. If it is not located conveniently, you should look into having it moved so you can get to it easily after each fuel stop.

You will note that your chassis manual states that the bowl should be drained after each fill-up if water or debris is evident. Debris is easy to see, and water will manifest itself as a bubble at the bottom of the bowl. Diesel fuel is colored with green additive that will make the water, if present, rather obvious. By the way, if your fuel is red, not green, you have purchased home heating oil not properly taxed for over-the-road use. This use is illegal in all states, since road tax is not exacted from heating oil. Diesel fuel and home heating oil are both classified as D-4 so they will both burn in their respective neighbor's place. But, heating oil does not have the additives needed for diesel engine use, especially for turbo-charged diesels.

Genie

The AC generator is often neglected because most of us stay in campsites that have at least water and electric hook ups. However, there will come a time when you will want, or worse, need your generator. Problem: a generator that has not been "exercised" will probably not run when you need it. Gasoline powered units are most notorious for this. Why? The gasoline in the lines and the carburetor goes 'stale,' and may also have accumulated condensation (water), which leads to oxidation of metal (rust). If the generator does start it will probably run poorly, especially if there is water and debris attempting to pass through the fuel filter. So, run your generator under a

substantial load every so often, and add a fuel stabilizer to your gasoline before you store the rig, or before you don't plan on using the generator for a long period of time.

With the proper volume of stabilizer mixed into your gasoline, run your generator under a load for a period of time to get the stabilized fuel into all of the generator's system.

Diesel generators are more forgiving of stale fuel, but are much more sensitive to water. Imagine it's hard enough to ignite water-laden gas with a spark plug, try causing diesel fuel to "explode" by mere compression if it's waterlogged. There are also fuel stabilizers for diesel fuel and these can also contain anti-gel or anti-fungal additives.

Probably the most forgiving type of generator is the LPG powered unit. Yes, it does take more volume of LPG than gasoline or diesel fuel to make an equal amount of generated AC power, but LPG doesn't go 'stale' and air (thus water vapor) does not enter the LPG fuel until it is about to be ignited. LPG generators also have the cleanest used spark plugs of any type of spark ignition engine. They will seem new even after several hundred hours of operation. So will the oil in these engines, don't be fooled, change that 'clean' appearing oil as per the manufacturer's manual.

Another hint given to me by a RV service professional has to do with the generator: I was told never to run the generator without a load (electrical draw). If you wish to run the "genie" to give it a little exercise, do it with your roof airs running, the fridge on AC, and if you have an electric water heater element, turn it on.

Classical Gas

LPG, propane, LP – whatever you might call it – is the stuff that heats your water and warms you when it gets cold outside. It also lets your refrigerator cool things when there aren't any 110 volts around, or (for those of you who have or had three-way fridges) it's there when 12-volt DC from batteries just won't cut it anymore. Oh, almost forgot the stove! I also neglected that most overlooked and seldom used item, the oven, or as many of us call it, the 'bread box'.

LPG is a colorless, odorless vapor (gas) of a liquid petroleum distillate that remains liquid only when it is kept under pressure. I know what is going through your head now, did I just read *odorless*? Yep! It doesn't stink unless we add a stinky chemical just so we can smell it when it is around (the manufacturer adds the stinky stuff). Why do we need to smell it? Because it's toxic and enough of it will make you dizzy, nauseous, light headed or worse – dead. The pressure thing is what scares some folks; that big heavy metal ovate tank attached to the bottom of your coach (of all places).

LPG is a safe material if you follow some simple rules:.

Rule #1 IT IS VERY FLAMMABLE! (No duh!)

Rule #2 IT IS VERY FLAMMABLE!

Rule #3 Don't forget rules 1 and 2.

The slightest spark *will* ignite it. If you don't believe me, watch as the tiny spark emitted by your water heater's igniter explodes the LPG at the burner (be sure not to watch too closely, or you'll be missing an eyebrow or two).

Now you may better understand why your coach manufacturer put that most annoying gas leak detector inside your coach down near the floor. When it goes off, it will literally waken the dead and continue making that gawdawful;

sound until you figure out a way to disarm or disembowel the darned thing. The newer leak detectors have a mute button that will stop the noise when a false alarm sounds, but after a short period of time it will reset itself and sound again if it picks up a vapor that will trip the sensor.

Unfortunately, LPG isn't the only thing that sets it off. Lots of other not so dangerous vapors will fire off the alarm, even in very low concentrations; such things as hair spray, spray cologne or perfume, and some of the carrier chemicals in many aerosols will also trip the sensor. The most puzzling to me was the one time it kept going off each time we opened the refrigerator for any time more than a nanosecond. The culprit was finally uncovered (pun intended), an old onion in the veggie crisper drawer.

Because LPG is so clean and quiet at its work, it is often forgotten. Therefore, we often forget to maintain our LPG appliances. Neglecting them will cause you to cuss and swear at a number of LPG appliances when they don't light, or constantly go out.

Water Heater

When your propane-fired water heater ignites, you should be able to examine the flame through a sight glass in the access door. The flame should be blue with a hint of yellow and it should emit a roaring sound as it burns. Don't get too close to the exhaust grid, as the spent gases are very hot.

If you notice a black sooty appearance to the exhaust grid, or worse, black soot on the surface of your motor home, your burner needs adjustment. Generally it is a simple problem with a simple solution. You need to adjust the air intake collar around the burner to reduce the amount of air entering the burn chamber. Do this in small increments until you achieve the ideal blue flame; emitting the ideal roar as described above.

Refrigerator

This propane burner seldom complains, but its orifice doesn't like debris. Many small spiders, for some strange reason, love the stink of LPG and will create a home in the gas tube if given a chance. These are easily removed, but be careful not to insert anything into the very small orifice that the LPG must come out of. Also be careful and gentle when working on or around its copper tubing. Remember, it is much softer than the steel tools you may be using.

Another seldom done cleaning chore will prevent you from having an ice cream mudslide in your freezer and some very un-tasty milk in the fridge. The burner for the refrigerator's ammonia heater is rather small and does not function like that of the water heater – no roar and no big blue flame. It is more like a miniature range top burner. Since the burning of LPG yields carbon dioxide and water, this burner area tends to build up a little mountain of iron oxide (rust), which falls down the chimney and invariably piles up in or around and under the burner. As the mountain grows, the burner is eventually smothered and the flame will no longer burn, no matter how many times the 12-volt spark plug igniter fires off.

Inspection and cleaning of this burner area is easy. Turn off the gas to the appliance. When the area is cool to the touch, swing the inspection door on the front of the burner chamber to the side and do a visual exam, preferably using a flashlight. Well, there sits "Mount Rusty" covering the burner (at least you

think the burner is still there). "How the heck do I get a brush small enough to fit in there to clean it out?" You don't. "My shop vac is much too big and powerful, it will probably suck up some of the critical parts and wiring." Yep! "So what do I do?" Obtain a plastic straw, one with the flexible part; bend it to reach inside through the little inspection door. Then with your eyes *closed*, blow through the straw. Simple! Check after each blow, and when the mountain is gone, you are done.

Your propane tank has a manual fill gauge attached to it, and if you can read it after filling your tank, you will see that your tank does not, in fact, read "full." There must be a vapor 'head' from which to draw the gas (LPG) and not the liquid. Your inside monitor panel should read full.

Screens, Flying Things, and Creepy Crawlies

I have seen advertisements for screens to protect the condenser fins on roof-mounted ACs. They're a great idea. You can also make one yourself out of various types of sturdy screening that will allow for the free flow of air. But before you do either, obtain a "fin comb" at an auto parts outlet so you can comb the fins that are already bent a little bit out of shape.

Oh, beware! The fin and AC areas are great places for nasty flying stinging type critters to make a home. Speaking of these insects, members of the *Vespid* family, they will find the most interesting places to make their home, especially when your rig is parked and not being used for as little as three or four days.

Here are some places to be on lookout for them: The water heater exhaust, especially now with many of us using electric heating elements for our hot water. Before you fire up the propane water heater check it out, especially if paper wasps have constructed a condo, or you might get a lot more flame than you expected at fire up. This wouldn't exactly make an attractive modification to the paint on the side of your D.

Another great building lot for our industrious six-legged "friends" is the intake and/or exhaust from our furnaces. This isn't normally noticed until the fall when we decide it's cold outside and we wish to be warm. A large housing development built by wasps can either choke off the incoming combustion air to the furnace or block the exhaust. The results can be very devastating, causing a fire at worst, or damaging the furnace in such a way that expensive repairs will be the result.

There are various ways to discourage the little builders (most RV parts places and catalogs offer various solutions), but whatever you do, DO NOT USE WASP SPRAY or, for that matter, any insect killing spray. They are all very flammable.

Other fun places where these insects tend to make a home are: under compartment door handles, under the entry door handle, in the engine radiator compartment, under a slide that has been extended for a number of days, in the awning cover and arms, the intake vent for the fridge, as well as its chimney, in those big and beautiful side view mirrors, and lots of other places.

Be aware, if you've never been stung, you may be allergic to the venom, and, at the least, their stings hurt!

Since I'm on the topic of six legged pests ... how about those multiple-sized packages of formic acid, the bane of the picnic blanket – ants. They come in all sizes and will find a way into the tightest coach built. Ant traps, you say? Well, you've got to know you have ants before you try to trap them.

Then you need to know what type of ant you've got, so you know what type of bait should be in the trap. Those tiny little sugar ants aren't going to stop into a trap baited for carpenter ants and visa-versa.

There are many types of insecticides available, some of which may even be safe to use around pets (and people). Truth be known, I would rather prevent the entry of the offenders than try to vanquish them after they have made themselves at home. I can speak from experience here.

Several years ago I ventured to southern Alabama near Dothan and stayed for a week in a beautiful RV park with trimmed grass and trees and wonderful large concrete pads. No trash was visible anywhere and the trash was to be deposited in a closed top dumpster.

I noticed that some of the larger high end coaches with Alabama and Florida tags had a strange powdery white perimeter around their entire rig. I thought nothing of this at first. One of the park maintenance people stopped by to ask if we would be venturing out in our car and absent from our motor home for the day. Querying, why do you ask? He said he would like to spray our rig's landlines, undercarriage and wheels with insecticide. Of course I answered yes, especially since it was part of the park's amenities at no extra charge.

That night, as I awoke for a cool drink of water, I noticed what looked like a faint line on the sink counter top. I went back to sleep thinking nothing of it. That morning my spouse rudely awakened me as she informed me that our cupboards were swarming with minute ants. They were everywhere! The faint line I had seen was a line of these miniscule pests marching to and from a food source they had found.

We spent the better part of the day emptying out all of our pantry spaces and killing what seemed like an endless population of the creatures. We purchased ant-killing shelf lining paper, ant traps and various ant-specific insecticides to combat this invasion. Well, the short of it is this: I asked the campground manager for help and he advised me to use one of his suggested methods to prevent the invasion from reoccurring, as he assured me that it would: Surround the base camp with an ant barrier... ah, the white perimeter powder I had seen. If you don't have an outdoor pet, you can use a commercially available insecticide barrier chemical or you can go native so to speak. The rigs in the park with local tags used various brands of cleansing powders (yes, Comet, Ajax, etc.) to form the barrier.

I was also told to grease my land lines (fresh water hose and electric cord) with petroleum jelly laced with insecticide or cleansing powder, and to not put out my sewer hose unless I was going to dump, rinse and retract it immediately after use.

When I left for northern climes, I thought little again of these fellows until I spotted them months later, busily scurrying about the front of my coach carrying bits of insect road kill to somewhere under the coach body. Those little devils survived the winter in New York to re-emerge the next season. I think when I traded that rig in for the D, I might have finally been rid of them.

Is the Engine Breathing?

Those of you who have Cummins engines are probably aware of the little canister that is attached by a vacuum line to your engine's air intake. There is a little vacuum hose attached at the top of a clear calibrated plastic canister. Inside there is a spring and a yellow bellows that looks like it can eventually rise up and fill the space where the spring lives. This little device will allow you to know when your engine isn't breathing as well as it should.

Your owner's manual explains the details and how to interpret the readings, but I've discovered two major problems when speaking to other owners: First, some people don't know what I'm talking about because they haven't seen the device. Why? Well sometimes, on the assembly line, they forget to move it to where it can be seen easily, mounted near the rear radiator as you open the grill. I know this because in my first diesel I had to move it to where it could be read from a position along side the engine on the frame rail.

The second problem isn't really a problem at all, merely a suggestion on how to check the action of this device. I often push the button on the bottom of the canister to "zero" the yellow bellows before I leave camp and check it at the end of the day. This lets me know if it has been sticking in one position or if it is truly telling me that the intake is breathing well. ❖