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- ***Install a 50-amp Shore Power Outlet at Home***

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RV ENTHUSIAST

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November 2021

Volume 1, Number 9

INSIDE



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Peripheral Vision

Backing up into a campsite is tough enough — doing it all by your lonesome is even more aggravating. Positioning your hands at the bottom of the wheel and turning it in the direction you want to go helps — but adding side-mounted cameras to a rear-view back-up system can really mitigate surprises.



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Cover Up

Motorhome windshields offer great views — when you want them. However, that usually means that strangers can also see inside. A Magne Shade adds privacy without eliminating outside panoramas — plus, it blocks about 90% of the sun's harmful UV rays and a lot of its heat in the process.



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The Right Connection

Want to put your RV into service as “guest quarters” when visitors arrive at your brick-and-mortar house? If you want the RV to provide more than emergency accommodations, you'll need to install a 50-amp shore power outlet for your RV at home. Here's how to go about achieving it.



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P-Chassis Performance

Once upon a time, there was more than just one Class A gas chassis to choose from — and those Chevrolet P32 underpinnings continue to support thousands of RVs on the road. Unfortunately, these chassis were never known for their handling — but restoring driver control may just require a few select parts.

DEPARTMENTS



10 News & Notes

Making water out of the air, tracking the cost of cruising, taking a tour of ‘Wilmywood’ — and a lot more RV news of interest.



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Readers ask for assistance in reducing trailer towing “angst,” troubleshooting a furnace and door light and sizing up trucks for towing.



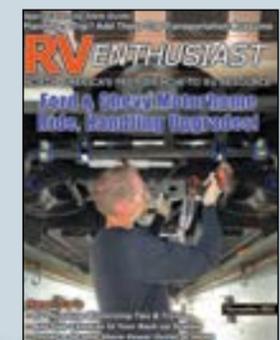
17 The Gadgeteer

A trio of cool components to bring readers out of the darkness and illuminate the patio, entry steps and storage cupboards.



69 Making Memories

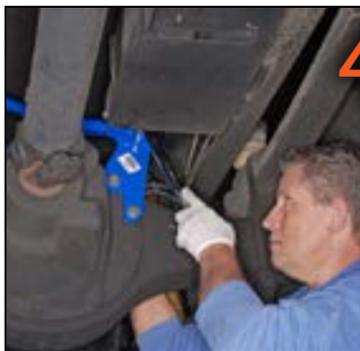
Vermont is known for its rich maple syrup, wonderful cheeses and eye-popping scenery, but there's a lot of history on tap, too.



On The Cover

Alan Sanders, general manager of Ultra RV Products in Centralia, Washington, completes the installation of a full suspension upgrade to a 2003 Safari Trek motorhome. Photo by Chris Hemer.

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The Magnificent 7

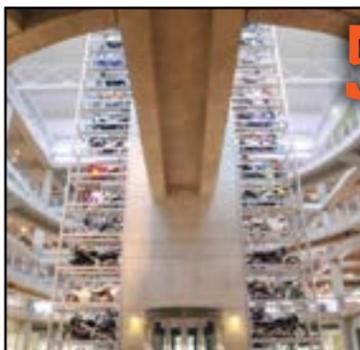
No matter which manufacturer built a Class A gas chassis, they tend to ride like buckboards. Ride and handling in these popular motorhomes can usually be improved — or even solved — with a few bolt-on items. We've identified seven component groups that help tame these gassers.



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Inside Job

With fall in the rear-view mirror, it's probably time to put the RV away for the colder months. Just don't put it away dirty. None of us really like housework, but cleaning the rig's living space now with these tips means that you'll return to a clean, fresh interior come springtime.



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Planes, Trains and Automobiles

Planning a vacation? Museums are a great addition to any trip. Those historical repositories dedicated to vehicles tend to command even greater attention. Here's a lineup of the best transportation museums in every state you can drive to — and possible parks to stay at in their vicinity.



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Ice Breaker

Water is the lifeblood of humanity — and access to it is a lynchpin of RVing. Leave it in your RV's plumbing system when the temperature drops below freezing, though, and you'll discover how expensive such an oversight can be. Winterizing your system is essential to preventing very costly damage.

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RV Enthusiasm is published monthly by RVE Media Group Inc., 3425 East Golden Valley Road, Reno, NV 89506. *RV Enthusiasm* magazine is copyrighted in the United States, Canada, Great Britain and other countries. All rights reserved. Permission to reprint or quote excerpts considered on an individual basis and granted only by written request. Advertising rates and Editorial calendars provided upon request.

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Will RV Parks Price Themselves Out of Business?

By Bruce Hampson

I'm going to step away from my comfort zone for a moment to reflect on a target of all that we do here at *RV Enthusiast* — because it really doesn't matter how well you maintain your RV if you can't find a place to enjoy it.

Yes, I'm talking about RV park/campground sites — or, more accurately, the management of these sites.

For years, the RV and campground industries have touted camping as a relatively inexpensive way to vacation. In fact, the cost of airlines, hotel rooms and rental cars was Exhibit A. By comparison, Exhibit B — an RV trip — could be enjoyed for a fraction of those costs. And yes, it still can — but the gap is closing.

There simply are not enough campsites to accommodate everyone, a situation that's only worsened due to the jump in the popularity of RVing as a way to continue to travel during the pandemic. Unfortunately, a growing number of park owners apparently now see RVers less as guests than as a captive audience.

For example, one of the online RV forums I visit carried a recent post from someone who talked about the park she recently stayed at. While I won't mention the name of the facility, it was part of a chain of campgrounds. Her site was \$190 per night. That's steep, but it's in keeping with RV resorts offering a number of unique features. No one should begrudge such facilities for asking top dollar — it costs big bucks to install, maintain and operate these amenities. That said, when she went to book the same space for the same dates next year, she was hit with a \$60 jump in pricing, to \$250 per night. That's an increase of more than 30% — in one year.

And it goes beyond just pushing the cost of nightly stays into the stratosphere. When *RVE's* publisher, Bob Livingston, was on the road last summer, he suffered a breakdown that necessitated a change of plans — including canceling a prior reservation at a park in Virginia. As per the park's requirements, half of the multi-day reservation was paid in advance — and \$332 was lost. Yes, the park had a "no refund" policy in place. It also was filled to capacity, and quickly re-rented the space that had already been paid for. That scenario was repeated a few times last summer for the Livingstons.

"Although we knew the rules, breaking down does not happen on demand or when expected," Livingston reflected. "We were supposed to meet friends at the park, who confirmed that the site was indeed rented for the entire time. In the 'old days,' parks did not operate at near or full capacity and had to put such rules in place to protect themselves. Today, they are mostly full — especially in popular locations — with campers on waiting lists."

Compare that to the hotel industry — held up at one time as an example of escalating costs — which tends to adopt a friendlier approach. While hotels have tightened cancellation policies that were extremely loose during the worst of the pandemic to appeal to travelers, their updated requirements are still far from some of the draconian practices we're now hearing about with some RV parks. According to a rundown of such policies we found at the website Bankrate.com, many hotels require cancellation of at least 24 to 72 hours before the reservation; anything less and the guest is charged a fee equal to the cost of one night's stay.

That's fair. Losing the entire cost of the reservation? Not so much.

The real irony, though, is how some park operators seem willing to endorse some practices seen in other industries while ignoring others they choose not to duplicate (like friendlier cancellation policies). A prime example of this is "dynamic pricing," a concept that's been pushed by campground consultants for years. This is simply charging more for RV sites as their availability dwindles — a practice well-known in the hotel and airline industries and, at one time, derided by many campground owners.

Proponents will describe this as little more than dealing with supply versus demand. Before you climb on board that argument, however, imagine if other industries practiced it as well. Picture driving up to the local burger place at dinner-time, for example, and discovering that your favorite fare was 30% more expensive because the owner of the establishment had to bring in additional help to deal with the expected increase in orders. Sure, the owner is also confident of selling more — but then again, RV parks are also renting more today. No park owner ever estimated his/her overhead — and then factored in additional dollars for unforeseen expenses and profit — based on 100% occupancy; doing so invites disaster. Savvy operators look at historical averages — be it 70% or 80% filled sites over the timespan the park is open — to establish a cost baseline, then price the sites from there.

Is this a ludicrous example? Absolutely. But how is it any different?

Fortunately, there are alternatives. Among parks, Campgrounds of America (KOA) has done a stellar job of rebranding its company-owned and franchised locations into KOA Journey, KOA Holiday or KOA Resort facilities. The designations are designed to inform travelers of the amenities they can expect to enjoy — and pay for. "And," Livingston opined, "KOA has a very good cancellation policy."

Beyond that, if you don't need a patio with a Jacuzzi alongside your RV — even if, as in Livingston's case at one "resort," it was opposite an old RV with a refrigerator and boxes stored outside — state and national parks are an option if you can beat the rush and make reservations in time. And the dearth of campsites has given rise to the best idea to come out of the outdoor arena in years: boondocking in truly unique environments. The companies making up the Togo Group include OvernightRVParking, said to be the largest database of free RV parking locations in the U.S. and Canada with 14,000+ locations (overnightrvparking.com/index.html) and Campendium (campendium.com), which includes free parking locations by state, offer good options. And, of course, there's Harvest Hosts (harvesthosts.com) and its roster of more than 2,800 unique locations that have signed up to offer RVers free overnight camping. In fact, Harvest Hosts recently acquired Boondockers Welcome (boondockerswelcome.com) which pushes the company's boondocking locations to more than 5,000 across the two networks.

With these locations generally limited to a single night's stay, however, they aren't a cure-all for what ails the campground arena.

"For ourselves, planning next summer is problematic," Livingston admitted. "We want to make plans, but we don't want to sacrifice any more reservation money should we have to cancel due to breakdowns, fires, bad weather or any other situation." **RVE**



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Making Water Out of Air — Anywhere



The low-silhouette of the Watergen unit fits snugly atop an RV.

Boondocking may have just gotten a lot more interesting — and a lot more viable. Watergen Ltd., an Israel-based global leader in atmospheric water-generating technology, announced in October it had developed the world's first aftermarket water generator for RVs.

Scheduled for release early next

year through select Camping World locations, the "Watergen ON Board" system harnesses humidity in the air to provide up to 13.2 gallons (50 liters) per day of fresh, clean drinking water. Watergen's globally patented "GENius" system for water extraction is the first heat exchanger to be composed of



Using Watergen's award-winning GENius technology, the captured water meets all applicable quality standards.

food-grade polymers, while the multifunction filtration cascade combines with proprietary "high end treatment technologies" followed by a germicidal UV lamp; vital minerals balance the water PH to achieve both high purification and "tasty" drinking water that complies with EPA and Federal Drinking Water standards.

It also is said to offer a wide operating range — 59 to 113 degrees F and 20% to 99% humidity — and is powered by any 12-volt power source (480-watt power consumption). The two-part installation includes a roof unit and water dispenser mounted inside the RV. The company will also offer a Mobile Box unit that provides up to 20 liters daily. For more information, visit us.watergen.com and, as the company's motto suggests, "enjoy a sip of fresh air."

Goodyear ST Tires Alive and Well



The author Mark Twain reportedly replied, "The reports of my death are greatly exaggerated" when supposedly contacted once by a news reporter who asked him about rumors he was dying. We can subscribe the same retort to wild rumors of Goodyear pulling out of the trailer tire (ST) market.

A number of subscribers to various RV-related online forums had reported of late their difficulties with acquiring Goodyear rubber for their travel trailers and fifth wheels. In fact, one of RV Enthusiast magazine's own editors encountered the same environment when

shopping recently for replacement rubber for his Keystone Montana; he was told by both the tire tech and a regional sales rep that Goodyear was pulling out of the market. We did try to reach out to Goodyear representatives, to no avail.

However, during September's Open House program staged by various manufacturers in and around Elkhart County, Indiana, to showcase 2022 model-year RVs to visiting dealers, we learned that a number of OEMs will be offering Goodyear Endurance tires on certain popular brands as original equipment. When we asked one product manager about it, he replied succinctly: "If I couldn't get them, I wouldn't offer them." In October, Winnebago Towables announced it will be transitioning to Goodyear Endurance or Wrangler ST tires on all Winnebago travel trailers.

So, it would appear that the company is, indeed, continuing in the market. If anything, the dearth of Endurance-branded Goodyear rubber may in fact be due to the same supply-chain issues affecting other companies — although the tires, introduced in 2018, are made in Alabama and North Carolina, so any shortage may be due to components required — as well as RV OEMs gobbling up what product is out there.

If You Build It, They Will Come



Grand Design executives (L-R) Trevor Marsha, Don Clark, Lance Lees, Rob Groover and Cam Boyer.

Back in 2012, three respected RV executives — Ron and Bill Fenech and Don Clark — founded a new RV manufacturing company focused on innovation, qual-

ity and customer service. It wasn't long before Grand Design RV's models began showing up on — then topping — lists of the best-selling fifth wheels in the country. In 2013, Grand Design began building its first toy hauler, the Momentum.

In October, the Middlebury, Indiana, company announced it had surpassed 15,000 retail registrations (sales) of the luxury toy hauler, which has grown to include the Momentum, M-Class and G-Class fifth wheels and travel

trailers. That information was provided to the company by Statistical Surveys, a data-crunching firm that monitors retail registrations — as was the fact that Mo-

Tracking the Cost of Cruising

What does an ophthalmologist — an eye doctor — have to do with the price of gas? Usually, nothing. Let's face it: sometimes we don't want to see how much it costs to fill up. But when friends Dustin Coupal (an ophthalmologist) and Jason Toews (a

computer programmer) founded GasBuddy in June 2000, they changed how we could follow fuel prices — and, by consumers sharing gas-pricing information, even find the lowest sellers in a given locale. Ownership of the corporation has changed hands a

few times since then, but by acquiring information on 150,000+ stations, Gas Buddy remains the "go to" site for up-to-the-minute (almost) fuel cost data.

That's vital to travelers at a time of inflation (like now). If you haven't visited the site in a while, you might be surprised at the wealth of information you can find there. The home page, for example, shows a "live ticking average" of fuel costs across the U.S. (a 2021 high of \$3.387 when we checked on October 26), and the interactive map showing state costs can, when a state is clicked on, break things down even to individual counties.

As it's grown, Gas Buddy has also added features — it now offers cash awards with brand partners, a payment card with cashback awards and an app that, by virtue of being downloaded more than 100 million times, is one of the highest-rated apps in the history of the Apple App Store. Stay informed. Go here to sign up for the latest information or to sign up for email alerts (fuelinsights.gasbuddy.com/home) or here (gasbuddy.com) to sign up for the free forever gas card and/or download the app.

U.S. Average for Regular, October 26, 2021



Retail Fuel Prices

3.010 to 3.150 3.150 to 3.256 3.257 to 3.355 3.361 to 3.515 3.553 to 4.576

mentum is the Number One-ranked fifth wheel toy hauler in North America and the Momentum brand is likewise ranked Number One in its class.

While Grand Design is no longer a private company — it was purchased by

Winnebago Industries in 2016 — original partner Don Clark continues to run the company as president and CEO. And, he continues to ensure that the company builds innovative, quality RVs.

ATC Goes Solar in a Big Way



As seen on this Game Changer PRO Series fifth wheel, ATC Trailers also recently rebranded and updated its logo and color schemes.

When ATC Trailers was founded by Steve Brenneman in 1999, the company focused on building a better utility trailer — and the “ATC” in its name represents the company’s original moniker: Aluminum Trailer Company. And, while building specialty trailers fueled the company’s success, it’s moved into the RV market in recent years — bring with it ATC’s same commitment to quality. ATV builds a pair of toy haulers — Game Changer and Game Changer

PRO Series — in both fifth wheel and travel trailer floorplans.

In addition to its aluminum construction and industry-first configurable furniture track system, the 2022 models (introduced in October) offer a fresh look as ATV prioritizes mobile sustainability.

All 2022 models incorporate a 200-watt solar panel, with a 400-watt Solar Package and 800-watt Off-Grid Package available as options. All fifth wheels also will come with a large-capacity 12-volt DC refrigerator, with the 4023 Game Changer PRO now also including a loft and moveable/removeable partition wall, making it possible to have three floorplans in one unit. For more information, visit atctrailers.com.

Roadtrippers: 5 Million Members — & Counting

Driven by “the continued interest in road-based travel and Roadtrippers’ features that support a unique road travel experience,” Roadtrippers announced recently that it had surpassed five million members.

Called “the world’s Number One road trip planning tool,” Roadtrippers (roadtrippers.com) is part of the Togo Group family of brands that also includes Togo RV (togorv.com), RVillage (rvillage.com), Campendium (campendium.com) and Overnight RV Parking (overnightrvparking.com).

Recent feature additions said to contribute to Roadtrippers’ growth include the release of Roadpass, a universal secure account log that makes it easier for RVers and members from other Togo Group apps to easily launch their next adventure. RVers planning their next adventure also can take advantage of RV-friendly routing tools including vehicle dimensions, safety alerts and route avoidances. All-new map filters also highlight mix-and-match categories like offbeat attractions and campgrounds that can accommodate big rigs.

Roadtrippers apps are available for desktops as well as Apple iOS (through the Apple App Store) and Android (via Google Play) operating systems.



Arlie Gardens, Wilmington, North Carolina

Take a Tour of ‘Wilmywood’

While travelers might be attracted to Wilmington, North Carolina, for its beaches, during the past 40 years or so the area has quietly established a reputation among film location scouts and managers as being able to represent “Anywhere, U.S.A.” The catalog of movies and television series shot at least in part in Wilmington has earned the coastal city the unofficial titles of “Hollywood East” and “Wilmywood.”

It’s said that the local film industry was initially fueled by the horror genre of the 1980s, including a handful of Stephen King novels committed to celluloid including *Firestarter*, *Cat’s eye*, *Silver Bullet* and *Maximum Overdrive* as well as David Lynch’s *Blue Velvet*. Since then, Wilmington and its environs have racked up more than 400 film and TV credits, from *King Kong Lives* and the *Scream* franchise to popular TV shows including *Sleepy Hollow*, *Dawson’s Creek* and *One Tree Hill*. In fact, in 1985 EUE/Screen Gems Studios — the largest domestic television and movie production facility outside of California — was opened in Wilmington.

While we couldn’t locate any official tour site for the area that focuses on the town’s film history, there are a number of online resources available for anyone wanting to take a self-guided tour of Wilmywood.

•Arlie Gardens is a 76-acre public garden known mostly for its stunning botanical diversity — but this map (airliegardens.org/wp-content/uploads/2020/07/Film-Brochure-NEW-copy.pdf) highlights where parts of movies and shows were filmed, from *Black Knight* to *Well Wishes*.

•For the truly adventurous, here

(assets.simpleview-inc.com/simpleview/image/upload/v1/clients/wilmingtonnc/Wilmington_Film_and_TV_Location_Guide_c05317f1-7773-4694-a362-bd75d41b82c2.pdf) is an extensive list of various locations in the area, from the Wilmington Riverwalk to the Bellamy Mansion Museum, Cape Fear Club and Bellevue Cemetery, that have helped to make Wilmington famous with film fanatics.

continued on page 68

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Trailer Towing Angst

Does the anxiety of pulling a trailer ever get better? I'm just the passenger most of the time. I don't know how my husband does it. I think I drive him crazy.

— Jennifer Siebeck

There are a number of ways towing can cause anxiety — from hitching to towing and backing/parking. Today's vehicles are equipped with back-up cameras that can make hitching up a whole lot easier — and Ford offers an option to do it for you. But if your vehicle is older and/or does not these features, there are a number of aftermarket cameras on Amazon and etrailer.com that will do the job. If it's backing into campsites that freaks you out, go with a product like the Hopkins vueSMART wireless trailer camera, which will provide a view from the back of the trailer.

Towing a trailer is something that makes a lot of folks uneasy, but that's usually because the trailer hasn't been properly loaded, the hitch not correctly set up, or the trailer is too heavy for the truck. Travel trailers need at least 10% of the trailer's total weight over the hitch or they can suffer from instability. As mentioned above, we cover this topic in detail in the article, "Worth the Weight" in the May issue. Use a correctly rated weight-distributing hitch and make sure that it is properly set up (see *Travel Trailer Hitches and Hitch Ratings*, also in the May issue). Finally, get yourself a sway control if you don't already have

one — this will go a long way towards making your travels angst-free.

— Chris Hemer

Front Furnace on the Fritz

I have a Fleetwood Southwind Class A with two furnaces, and all of a sudden the front furnace and refrigerator won't light on LP-gas. The range and rear furnace are fine. They are trying to light — the furnace fan turns on and I can hear it click, and the fridge clicks — but nothing.

— Jerry Sanders

There are a number of possibilities to look at, but you should focus on a system issue rather than an appliance problem. Although the rear furnace and stove are working, troubleshooting any appliance starts with making sure the energy powering the appliance is functioning properly. Start by pressure-testing the LP-gas system using a manometer (a certified RV or propane gas technician can help with this) to make sure the regulator is providing adequate pressure (11 inches w.c.) and flow. If the malfunctioning appliances are in the same slideout, it could be a crimped hose.

Next, test the 12-volt DC electrical system for proper voltage at each of the appliances. Even though the affected appliances are turning on, low voltage can still cause them to malfunction.

Monitor LP-gas pressure and 12-volt DC power under load. Remember, static voltage or pressure (nothing operating) can look fine, but can drop off when appliances are operated.

Once the power systems have been verified, it's time to check the appliances. In this case, I think you'll find a problem in the LP-gas and/or 12-volt DC systems

— Chris Hemer

Frying the Electrical System



I bought an RV and had solar panels, a second RV battery and a 2,000-watt inverter installed. The problem is, when we run the air fryer (1,550 watts), everything shuts off after running the air fryer for about 15 minutes. Any idea what the problem could be?

— Tim Strathern

You didn't mention the battery type, so when you say "everything" shuts off, it sounds like the 12-volt DC system shuts down altogether, which may likely be a lithium battery management system (BMS) shutting down to protect against discharging too quickly. However, flooded lead acid (FLA) batteries can also cause a shutdown.

There are a couple of possibilities, so I wanted to bring in a colleague, electrical engineer Mike Sokol, to help sort this out:

"Most FLA batteries are rated at a C/20 discharge rate. That is, a 100 amp-hour battery is rated at 5 amps for 20 hours of discharge. It appears they're discharging this battery at a rate of C/2 or higher, which will cause all kinds of internal heating and increased impedance. That will cause a rapid drop in voltage, even though you might think there was amp-hour capacity left. Lithium-iron phosphate batteries don't exhibit these problems. A pair of lithium batteries will easily run this load, but attempting this with FLA batteries will be iffy. You might get it done with four 6-volt FLA batteries, but most 12-volt batteries aren't really deep-cycle and will exhibit this same shutdown effect. Once you discharge faster than C/5 (20 amps for a 100 amp-hour battery) all kinds of derating must be applied. I don't think what you're attempting will work with lead-acid batteries, and ev-

erything must be perfect to even allow lithium batteries to discharge at this rate. In any event, getting a voltmeter on the battery would show if the voltage is going below the inverter low-voltage cutoff point. You need to get meters on it to evaluate what's actually happening."

— Mike Sokol

So, a few things to check out. First, the batteries must be fully charged with no other loads on the system. Second, verify that the cable size and run are correct from the batteries to the inverter. Undersized cable and a heavy load can cause a lithium BMS to shut down and/or the inverter to overload and shut down. Cable size makes a huge difference. If you're using lithium batteries, check to see for the maximum current output rating, and that it's not being exceeded. A DC ammeter clamp on the cable coming off the battery bank can be helpful to establish load values. Monitoring the voltage at 1) the inverter, and 2) at the batteries while the load is applied will also be informative.

If you're not going with lithium batteries, more, bigger banks of 6-volt batteries and heavier cabling will help to ensure you can maintain power.

— Chris Dougherty

Sizing Up a New Travel Trailer

Hey guys, I'm looking into getting a travel trailer about 30 feet and I was wondering what's the best truck to get in order to pull one of those. Any help you can provide would be appreciated.

— Doug Morris

It's not just the size of the trailer you need to be concerned with, but the weight. By your letter, I'm going to assume that you haven't purchased the truck or the trailer yet. If that's the case, start shopping for the travel trailer first — find the one (or ones) you like, and then get the gross vehicle weight rating (GVWR) from the placard on/in the trailer. After you purchase the trailer, find a truck or SUV that can tow at least that figure (more is always better) and you should be fine. If you're getting the truck first, go with something that can tow at least 10,000 pounds—that should cover the bulk of travel trailers. Then, go shopping for a travel trailer with a GVWR not exceeding that figure. For more information, see the article "Worth the Weight" in the May issue of *RV Enthusiast*.

— Chris Hemer

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Part # 50050

Flickering Light



I have a 2019 Forest River Class C motorhome Sunseeker 3250 DELS. The light over the door is flickering when you open the door. I can turn it off but I would like to fix it. My dealer wants \$92 just to look at it. Can you help?

— Howard Harris

The first thing to look at is the door switch. Over time, these switches get corroded and don't make a good contact. Try manually wiggling the plunger to see if that makes the problem occur — it could be as simple as a loose solderless connector or the contact is dirty. Removing the switch is the best way to diagnose and clean it. Make sure the power is off before you remove it, so you don't short the switch on the door frame and blow a fuse, which you'll have to replace in that scenario.

You can either replace the switch or, as I like to do, try cleaning it. You can also spray a little electrical contact cleaner into the switch and work it around a repeatedly, which frequently works, at least, temporarily. If you see a lot of corrosion, replace the switch, which you should be able to find online. When you reinstall it, consider coating it with dielectric grease to prevent a recurrence of the corrosion.

If you don't discover an issue with the switch and the wiring connection, it's possible that the light is failing. I think you should have an LED version, and sometimes the LED board will go bad. The light can be tested using a multimeter or test light to confirm that the power feed is stable. If the power is good while opening the door, replace the lamp. If you have a magnetic switch, the connection may be possible cause, as well as the positioning of the magnet, or there can be an internal problem in the switch. The only other solution is to replace the switch if it's acting up

— Chris Dougherty



Wet Walls and Windows

I have severe condensation in my fifth-wheel that I can't seem to correct. We are full-timers, we're not using the propane heat, we have moisture bags hanging and fans running — but it's still a big issue, especially in my cupboards and closets. I'm afraid of mold and mildew developing.

— David and Sheila Samuals

Condensation is inevitable in an RV in cold conditions, just like it can be in a house, except the problem can be amplified due to the small space and the way it's built. Everything we do — from washing, to cooking to breathing — is adding significant humidity to the interior atmosphere of the RV. As this interacts with the cold walls and windows, these become dehumidifiers, converting the water vapor to liquid and even frost at times. It's not generally something you can just get rid of once and you're done. You have to keep on top of it throughout the colder seasons, but the drier you make the RV earlier in the season, the less chance of developing condensation.

The reason the problem seems to become less problematic later on in the season can be traced to the materials in the RV — including wood — than can swell with moisture content during the humid summer and give it up in the drier winter. But initially, it can be tough to "get it over the hump," as they say.

For full-timers, I really recommend an

electric dehumidifier — and run it pretty much all the time during cold weather. Get as much moisture out of the air possible and you really won't have to adjust your lifestyle at all — cook and clean to your heart's content!

Ventilation is important when a dehumidifier isn't an option. While the hanging bags and tubs are OK, they're not very efficient, are transient and need to be replaced/serviced. They work better when the RV is in storage. Venting the moist air out and replacing it with cooler, drier air from outside is the best bet. Keep windows and roof vents cracked open when possible.

An open burning propane flame, like on your stove, also creates moisture to the inside the rig; however, your furnace exhausts to the outside — it will not affect the humidity level inside. In fact, the air flow from the furnace helps keep the hidden areas of the RV warm and, paired with a dehumidifier, everything gets dried out more effectively. If you have dual-pane windows, that helps a great deal. If not, you can use inside window kits like those from Frost King to improve insulation and reduce condensation. Keeping cabinets and closets cracked open is also helpful in keeping the inside warmer. Some folks have even designed computer fan systems to circulate air in these spaces to help keep the plumbing warm.

— Chris Dougherty

RVE

THE GADGETEER

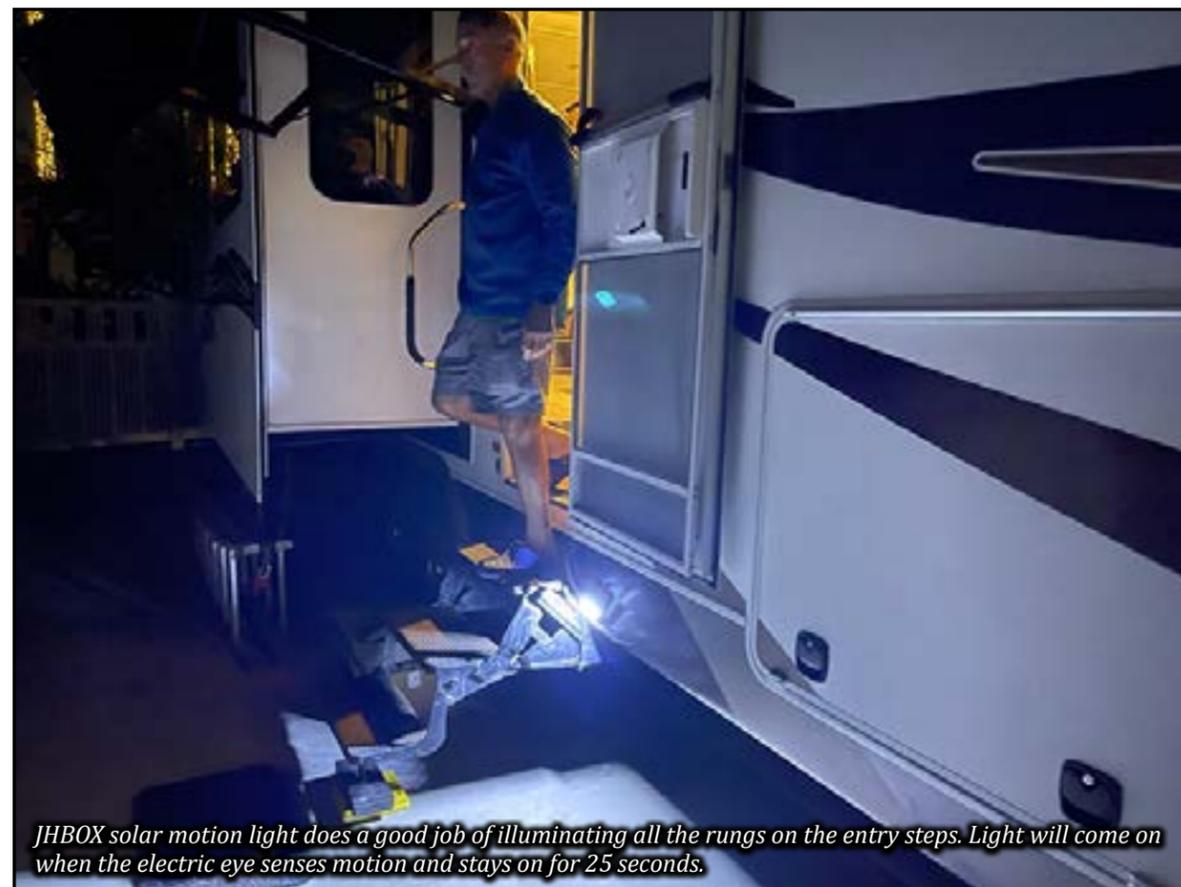
Out of the Darkness



Finding reliable LED fixtures to illuminate the patio, entry steps and storage cupboards takes some study. Here are three products that have proved to be reliable through years of testing. By Bob Livingston \ Photos by author

Ever since Thomas Edison invented the light bulb, people have been on a constant quest to find the best way to illuminate dark places. First came incandescent lights, which were hugely inefficient but lit up the world. Fluorescent fixtures, which produced less heat and could generate more light from less power, hit the market in 1934, though it wasn't until the 1980s when they began showing up anywhere but businesses and warehouses. And then came the light-emitting diode (LED).

To say the invention of LED lighting was a giant leap toward efficiency and cost effectiveness is an understatement. The fact that LED fixtures run cooler, are brighter, last a lot longer, are relatively inexpensive and can be purchased in a variety of color (light) temperatures makes it possible to identify a number of places where added lighting will improve livability and safety. For RVers, lighting up the patio, the entry steps and storage compartments (inside and out) are logical places for additional light — if you go on the Internet you'll find hundreds of imported products with wacky names that supposedly fit this bill. But not all are created equal; after years of testing under full time usage, we can recommend three products that perform as advertised, are reliable and inexpensive.



JHBOX solar motion light does a good job of illuminating all the rungs on the entry steps. Light will come on when the electric eye senses motion and stays on for 25 seconds.

Leap of Faith

RV entry steps are an obvious necessity, but reality suggests that they can be dangerous without proper illumination. The industry continues to make improvements in this department, but people still misstep when exiting the RV and are injured — usually caused by not holding on and a lack of lighting. JHBOX Solar Motion Sensor Outdoor Lights (<https://amzn.to/3aYbvmC>) may not be the most stylish on the market, but they provide uninterrupted function for a long time, plenty of light and are easy to mount — and let's not forget that you can buy four of them for \$22.99.

These odd-shaped fixtures are waterproof and have 30 LEDs that shine light over a 140-degree area. Mounted next to the entry steps, they bathe all



The housing is not very stylish but takes up little space when mounted on the sidewall near the steps. A push button next to the electric eye allows for manual activation of 30 LEDs. This fixture can also be used anywhere where extra light is needed.



Built-in solar panel charges internal lithium battery; exposure to the sun for eight hours provides enough energy for 8-10 hours of light.

the rungs with plenty of light, making it much safer to get in and out of the RV. An attached solar panel provides the internal lithium battery recharging with eight hours of exposure to the sun, and a motion sensor — which senses movement from 3-5 meters — turns the light on when it's needed and stays on for 25 seconds after it senses a lack of movement. A push-button switch next to the electric eye can manually turn the light on if desired. Working time is 8-10 hours, which is plenty since the light is usually used intermittently.

We mounted this light on the sidewall adjacent to the top entry step; one or more screws can be used to keep the fixture secure on the wall. It worked flawlessly for three years before needing replacement. Not bad for a little more than five bucks a light — and the safety angle is priceless.

Hiding in the Cupboard



Vyanlight LED Closet/Under Cabinet Light illuminates the inside of cupboards when it senses motion. Here, it's mounted on the inside of the door. It can also be mounted above a shelf or vertically on an interior wall. Activation of light is instantaneous.

We've all experienced a mysterious "disappearance" of a needed item in a storage cabinet or pantry. You know it's there, but the lack of light makes it difficult to find — especially if you pack these areas with too many foodstuffs. Fumbling through

dark shelves usually results in a few choice words before reaching for a flashlight. Well, tamp down the ex-



Light fixture is mounted using an adhesive-backed magnetic strip. This allows the housing to be removed from the mounting location without tools for charging via an USB outlet. The magnetic strip is a good idea, but the housing may let go when mounted under a cabinet or shelf. Small neodymium magnets were added to support the housing and defy gravity.

pletives; the motion-activated Vyanlight LED Closet/Under Cabinet Light (<https://amzn.to/3E443mm>) makes a cool addition to any cabinet/pantry interior. While the name suggests that it's primarily designed for mounting under a cabinet to illuminate a countertop, it's equally at home inside any storage cabinet, inside or outside.

The key is the motion activation, eliminating the need for a switch, and it's USB rechargeable, so replacing batteries is not necessary. The mostly metal body is a svelt 1 ¼ by 7 inches and it's mounted via an adhesive magnetic strip that is attracted to the metal in the light housing. While the mounting system makes it very convenient to install, hanging the light from a top shelf or under a cabinet presents a little too much weight for the magnetic strip. We elected to use a couple of small, round neodymium magnets (purchased at a local hardware store) in lieu of the strip

to hold the fixture in place more securely. (We found the magnetic strip worked better when the light was mounted on a sidewall that is less susceptible to movement.)

Attaching the light using magnets allows the housing to be pulled off the wall or shelf and plugged into a nearby USB cable for charging. It takes an hour or so to complete the charging, and because the light is used intermittently, the charge lasts for a very long time.

The 30 LEDs are dimmable and there are four modes for adjusting the amount of light projected inside a cabinet or on a countertop. These modes can be switched to provide light from 10, 20 or 30 LEDs, or be set to stay for any desired length of



Dream Lighting LED fixture was surface mounted and hard wired in the same location as the factory incandescent light. Its 720 lumens of light bathe the entire patio (and more) with a cool light; LEDs are also dimmable.

time. Once motion is sensed, the light is automatically turned on and stays on for 20 seconds after motion ceases; sensitivity reaches out to 10 feet.

These lights, mounted in a fifth

wheel, have been in full-time RV service for three years with no hiccups, which is pretty amazing for something that can be purchased for only \$23.99 (two units).



Light Up Your Life — On the Patio

Patio lights come in all shapes and sizes, and many are too anemic to illuminate a large area. Many RV manufacturers have transitioned to LED strip lights mounted to a track below the awning roll, but unless the awning is extended, some of the potential light is blocked by the rolled-up awning material. The Dream Lighting LED Heavy Duty Awning Light Bar (now that's a mouthful; <https://amzn.to/3vzltmM>) is compact and will illuminate the entire patio and more — and it sells for only \$28. While there are numerous fixtures floating around the Internet, this model passed muster (more than 1 ½ years of service) — so much so, that additional units were installed, replacing the round scare lights on the corners of the fifth wheel.

The metal body measures 8 x 1 5/8 inches and, when surface-mounted, only protrudes 1 ¼ inches from the sidewall. There's notable heft to this fixture, which contributes to its durability, and cooling fins built into the waterproof housing dissipate heat from the LEDs while providing a "techy" look. It must be hard wired into the RV's 12-volt DC system, an easy task if you're replacing an existing fixture. If this fixture is replacing the strip lighting, you can route new wire along the strip rail, which may not be pretty, or remove the strip light and use the space in the rail to conceal a two-wire cable. In both cases, power can be picked up from the source at one end of the strip light. If there is power on the other side of the wall where the light fixture will be mounted, wiring can be fished to that location and a new switch can be employed.

The LEDs in the fixture provide 720 lumens of cool light, projecting a 40-degree downcast beam — and the LEDs are dimmable, which is nice for after-dinner lounging when too much light spoils the ambiance. **RVE**



The stout metal body is waterproof and compact. This fixture has provided years of interrupted service and makes a viable replacement for the round scare lights commonly found on RVs.



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Peripheral Vision



The color monitor is only set up on the dash when a backing event is necessary (driver choice). The large screen makes it easy for the driver to glance at the image and decipher what may be in the way while maneuvering in reverse.

Adding side-mounted cameras to a rear-view safety back-up system mitigates blind spots and unpleasant surprises

By Bill Gehr / Photos by Bob Livingston

Backing an RV travel trailer or fifth wheel into a site, the side of a house or any other place where access is tight can be challenging. For some outdoor enthusiasts, just the thought of backing up sends shivers down their spine — sometimes to the point where they opt for a motorhome just to keep from making uncomfortable maneuvers. For years, driving experts have touted the importance of practicing backing maneuvers in an open lot to become acclimated to the task. It's great advice — but those inevitable blind spots can still take their toll on a driver's nerves. Relying on a partner to guide the driver helps mitigate the problem, but can sometimes lead to regrettable arguments and unexpected

contact with stationary obstacles. The situation is even more difficult when backing a big rig.

Fortunately, wireless cameras with advanced features have taken some of the edge off of RVing in reverse. The latest wave of large color monitors provides greater definition than products of just a few years ago. However, being able to see what's behind you doesn't mitigate the lack of vision when turning — especially on the blind side where vision via the mirror is compromised because of the articulation of the trailer in relation to the tow vehicle. There is a solution, though — and it's not trading up to a motorhome. Adding additional cameras is a game changer — and if you already have a back-up vision sys-

tem with provisions for side cameras, mounting the additional hardware can be achieved in just a few hours.

The owner of this 40-foot fifth wheel recently fitted it with a RVS-4Cam back up camera system (\$509) from Rear View Safety (RVS) that came with a sizable 7-inch monitor screen which displays up to four very sharp images (something that is critical when trying to decipher an image at a glance while also paying attention to your surroundings). It's also possible to view full-screen images for additional detail. The camera worked great — but because he often traveled solo, it didn't help much when backing up. Fortunately, RVS also offers side cameras that transmit images wirelessly to the mon-

itor, which is able to split the screen to view what's behind you and to the sides (providing two additional cameras are installed). As a rule of thumb, higher-quality systems will give you better resolution for identifying obstacles, even ones that are smaller in stature.

While the side cameras provide a wide view, we quickly determined that they needed to be mounted as low as possible on each side of the fifth wheel and about a foot from the rear bumper for the best view of low objects that may not be visible to the top center camera. Each camera comes with a wireless transmitter and an antenna that will need to be hard-wired into the fifth wheel marker light to provide 12-volt DC power. For this installation, a section of the underbelly, close to the rear of the fifth wheel, was peeled back to expose a raceway to a nearby marker light. The plan was to hide the transmitter in this location, leaving a hole for the antenna to protrude toward the ground.

After removing the marker light base, the wires from the transmitter were fished through the opening and butt-connected after identifying the polarity. Typically, moisture will not reach the marker light, but it's best to either



1 Marker lights on both sides of the fifth wheel were close to the locations where the cameras would be mounted for the best side views. Bases are removed to reveal wiring.

tape the connectors or cover them with heat-shrink tubing. (You will need to turn on your parking lights to activate the transmitter, the same process that's used to turn on the rear-view camera mounted on the back wall of the fifth wheel.) Once the wires were neatly bundled and attached, the transmitters

were placed in the underbelly openings and secured.

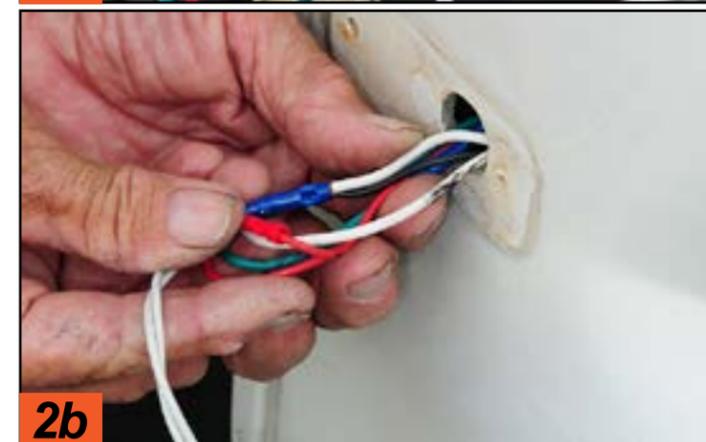
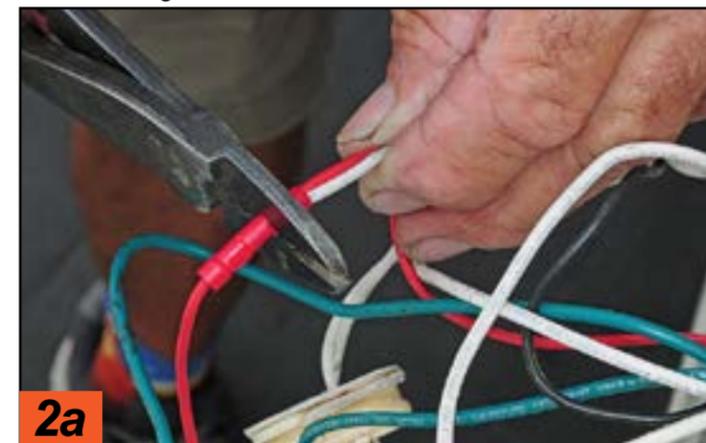
The underbelly must be sealed to prevent water intrusion, and that's the rub — most tapes will only stick to underbelly material for short periods of time. Mobile Home Flex Mend Belly Pan repair tape (4 inches by 45 feet; \$22.49 at Amazon) is designed to stick to polyethylene underbelly material and will ensure a secure seal. Failure to protect the transmitter from moisture can lead to failures that will not be protected by the one-year warranty.

It takes some experimentation to figure out the best locations for the side cam-

eras, which can be accomplished by duct-taping each camera in a spot that you think will give you the best view. Once you locate the best placement for the cameras — and you will have to do some backing to get there — the permanent mounting process can start. You'll have to hookup the 7-way umbilical cord to activate the side camera and transmit images to the monitor (and, again, turn on the marker lights from the tow vehicle). Toggle between the screens and adjust the cameras for optimal viewing position and mark the locations for the mounting brackets. The brackets are slotted to allow for fine adjustments after they are mounted.

Under real world testing, the images on the screen virtually eliminated blind spots—making it possible to back into tight RV sites without a spotter and the associated stress of not knowing what's in the way.

The cameras chosen for this project (RVS-DSS, right and left models; \$191 each) offer a 120-degree view via a 2.1mm lens that provides 250,000-pixel-image performance. Each has nine infrared lights for vision in total darkness up to 30 feet, a shock resistant rating of 20G, which should survive even the worst roads, and is waterproof (IP68 rating). Add the cost of the side cameras to the price of the initial RVS-4Cam system (\$509) and the needed tapes, and this entire project will set you back about \$900. Consider it cheap insurance — and an investment in your relationships. Not to put too fine a point on it, but it's a lot less expensive than divorce court. Once you rely on side-view cameras to mitigate blind spots, you'll be hooked — and the person



2a 2b Once the marker light base is removed, the wiring can be pulled out of the hole in the sidewall. Wiring polarity is determined by plugging in the 7-way power cord and turning on the marker lights. Butt connectors are used to hook up the side-view camera wires.

usually tasked with trying to guide you into a tight RV site will breathe a sigh of relief. **RVE**

Source:

Rear View Safety

(800) 764-1028

www.rearviewsafety.com



3

To prevent moisture intrusion, the connections are covered with good-quality electrical tape. Shrink tubing or sealing-type butt connectors are more effective, but tape works in a pinch.



5

Wiring is routed (using a fish tape) through an opening that was cut in the fiberglass underneath the rear of the fifth wheel.



7

The articulating rubber coated antenna is attached to the metal transmitter body. The transmitter is a little on the bulky side, so take your time in finding a suitable mounting location.



4

Silicone should be applied to the screw holes/screws when replacing the marker light bases.



6a



6b

An opening was cut in the underbelly material to mount the camera transmitter. Power leads from the marker light are butt connected to the transmitter. It's important to maintain the proper polarity.



8

The transmitter is secured with hook-and-loop tape inside the opening cut in the underbelly material. It's not waterproof, so placement away from potential moisture is critical.



9

Try to cut the hole to a minimum size that will allow the transmitter to be maneuvered in the opening — no sense having to patch up more underbelly material than necessary.



11

The mounting bracket for the camera is screwed into the flashing that extends below the fiberglass sidewalls. This location was determined after trial positioning using duct tape to secure the camera temporarily. Silicone is used to make the screw holes watertight.



12

The camera is attached to the mounting bracket with small screws, which are not fully tightened until after final aiming.



14a

Before sealing the cuts in the underbelly, the material is cleaned with rubbing alcohol to make sure the tape will hold. Mobile Home Flex Mend Belly Pan tape, designed for use on the polyethylene underbelly, is applied to the material and small area of fiberglass where holes were cut.



10a



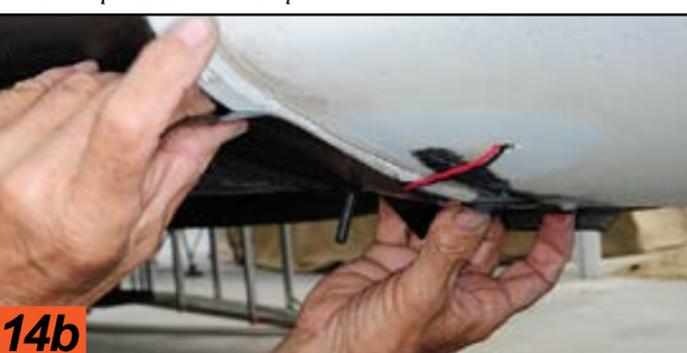
10b

The camera is connected to the transmitter using a barrel fitting that is very secure and resistant to moisture. After making all the connections, the loose wiring is bundled and stuffed into the opening cut in the underbelly material.



13

The cable from camera to transmitter is routed on the exterior to keep from making additional holes. It's barely visible and held in place with a clamp.



14b



15

The transmitter was mounted so that a portion of the antenna sticks out from the underbelly. Any gaps in the material were filled with silicone.



16

The red lens is snapped back on to the marker light base, completing the job.



17

Wireless cameras were placed strategically on both sides of the fifth wheel to provide the best possible views and eliminate blind spots. Camera is waterproof and shock resistant.



18a



18b

The monitor can be switched to display views of both sides of the fifth wheel and views to the rear. If desired, a full-screen image can be set to give the driver more detail. This comes in handy if obstacles are smaller or hard to decipher.

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Cover Up

One end of the telescoping pole (provided with the kit) is inserted into a pocket sewn into the fabric, which is positioned over its respective magnet stuck to the windshield. No ladder is required, and the process takes only minutes. (Photo courtesy Magne Shade)

Motorhome windshields offer great views — when you want them. A Magne Shade adds privacy without eliminating outside panoramas, plus it blocks 90% of the sun's UV rays and a lot of its heat in the process.

By Bob Livingston

Expansive motorhome windshields offer splendid views of the road and scenery. Unfortunately, they also let in a lot of sunlight and heat. It's just part of the deal; you can't have that open feeling without some compromises on comfort. Make-shift window covers and standard sun-

shade material can help — and you can always extend the front privacy shade — but any view to the outside will be completely blocked out, not to mention darkening the cabin.

Magne Shade has just about perfected a sunshade that covers the front windshield as well as applications for

the driver-, passenger and entry-door windows — without turning the interior as dark as a tomb. One key is the use of a high-quality PVC-coated polyester fabric that is "porous" in the sense that it's weaved with innumerable tiny holes that, when installed, diffuse the sunlight entering the RV, providing light without



1 The magnets will not stick to windows that have been treated with certain products. If masking tape sticks to the glass, the adhesive on the magnets will also stick. The inside glass must be thoroughly cleaned. We first cleaned the window with glass cleaner and then with 50/50 mix of isopropyl alcohol and water, which is specified in the instructions.

being uncomfortable. It also allows you to see out — but from the outside, passers-by can't really see in (except at night, when the interior is lighter than the exterior and you will draw your privacy curtains).

Beyond that, the fabric and its design combine to block 90-93% of the sun's harsh ultraviolet (UV) rays — protecting interior furnishings in the process — and, according to testing done by the company, will reduce heat inside the coach by about 15 degrees as measured at the dashboard. An interior shade, on the other hand, tends to trap the heat coming through the front glass inside the coach — between it and the windshield — creating what Magne Shade inventor and owner Roger Hunckler calls a "thermal bubble." Natural convection causes that bubble to rise to the ceiling, where it enters your ac vents and reduces the efficiency of the motorhome's air-conditioning system.

As we said, however, the high-end fabric and weave is one key to the Magne Shade. The other is the use of strategically placed Rare Earth magnets that make set-up and take down quick and easy — without having to climb on a ladder to reach upper sections of the window once it's installed the first time.

Magne Shade window covers are not off-the-shelf products. Each one is custom made to fit individual motorhomes, and the company has developed a precise ordering process that can be followed on its website. Company person-

nel can help you avoid mistakes, and although they have extensive knowledge of just about every motorhome model out there, they are sticklers for verification and will likely ask for accurate measurements to be compared with their numbers. Customers may also have to submit photos. For the project motorhome, the company sent its measurements to us prior to

ordering and we were required to physically measure the windows to ensure that the numbers matched. The system worked flawlessly, and the sunshades were a perfect fit.

Customers will also have to choose color and style. Most owners opt for the brown or black sunshade — the company's "go to" colors — because darker colors reduce glare and provide a better view out from inside the RV. They also stay cleaner because they don't show roof runoff, although the shades are easily cleaned with a mild detergent

and a soft brush. Dark colors also are better at reducing heat gain.

That said, there are other options available. Magne Shade can print the shade showing colorful scenes from stock providers or one's own photograph. Owners wanting a special scene printed on their sunshade can choose a stock design from www.bigstock.com or <https://www.dreamstime.com>, websites that are recommended by the company (both offer royalty-free images but require signing up for the service). There's a \$400 up-charge for a custom print (\$200 for Class B and C motorhomes) and the company provides clear instructions on cropping that will work for the dimensions of the sunshade. Just make sure the image is not copyright protected; the company will only accept images that are authorized for this type of usage. Personal photos must be accompanied by a written permission letter from the photographer.

These sunshades are made to last, and the PVC coating keeps it from drying out, stretching or cracking. Sunbrella UV binding not only looks good but is durable. Customers can choose from nine binding colors; marine-grade thread assures strength and customers should expect many years of service. In fact, after hanging a custom printed sunshade on a fifth wheel picture window (see sidebar) for six consecutive months during each of the last four years in the desert sun, the material —



2 Each magnet is pre-fitted with a 3M VHB adhesive disk. Magnets will be stacked, separated by a plastic disk, packed in boxes and clearly marked. These neodymium magnets are super strong, so use caution when handling. They can jump surprising far when metal is nearby.



3a



3b

Once the windshield is prepped, the sunshade is pre-fit to confirm that it will lay properly on the glass. This process takes two people and ladders.

and image — still look brand new.

It's a Stick Up

Installing the Magne Shade is not difficult, but it does require repetitive steps that can take a while to complete. The concept for attachment is brilliant: Extremely powerful magnets sewn into pockets on the perimeter of the sunshade are simply attracted to similar magnets that are mounted on inside of the window. Keep in mind that working with these strong neodymium magnets can get somewhat comical at times because they are attracted by other magnets and surrounding metal. If you remove the plastic divider and restack the magnets, they will be difficult to sep-

arate — to the point that you'll likely be giggling for being stupid enough not to pay attention. The magnets are clearly marked in boxes and correspond to the placement specified in the instructions. And be careful: These magnets can impact medical heart devices and will pinch your fingers if not handled correctly.

You'll need to enlist a helper to install the magnets; this will be the last time a helper and ladder are needed to mount the sunshade. Dry fit the sunshade first by stretching it across the window, while your helper places corresponding magnets inside the windshield. When all the magnets are placed temporarily, they should be adjusted at each

pocket to make sure that each magnet is scooted over closest to the window gasket and centered. This will allow you to "bump" the sunshade into position to remove any wrinkles when installed after a period of non-use.

Once the pre-fit is accomplished, the inside of the windshield (or window) must be cleaned with a 50/50 mix of isopropyl alcohol and water and allowed to fully dry. Then, one person holds the pocket from the outside while the person on the inside removes the film off the adhesive on the magnet — don't touch the adhesive — and sets the magnet in place. It's best to initially mount the shade on a warm day, with the coach facing into the sun, to relax the fabric. Depending on the motorhome windshield configuration, slight alterations in magnet size and placement may be required, but Magne Shade will handle all those details and provide the proper materials with the kit. Windshield wiper covers also are provided with the sunshade.

When it's time to install the sunshades while parked, the end of the telescoping pole (provided with the kit) is inserted into one pocket at a time and lifted so that the material is positioned against the attracting magnet. It takes only a few minutes while standing on the ground. Reverse the process to remove the sunshade. The same procedure is followed to install and remove the driver's side and entry door window sunshades.

Installing sunshades on the driver's side and entry door windows (if added) uses a similar magnet-placement procedure. Figure on one to two hours to install the sunshades for the first time, which should not be removed for 72 hours. The company also provides an excellent installation video and offers superb customer service.

Care must be taken when storing



4

In some cases, a larger magnet will be required and marked precisely for proper mounting location in the instructions.

the sunshades. Never fold the shades; that creates a point that will stretch the polyester fiber. We found that rolling the fabric around a swim noodle — yes, yet another way to use the noodle — works well, while storing in a flat section of an exterior compartment will help keep the sunshade looking nice. Just don't throw other items on top of the rolled sunshade and make sure there is no metal nearby to attract the magnets.

Cost for the Magne Shade windshield cover starts at about \$625, but prices vary among different motorhome models and years. The entry door sunshade goes for around \$210, while the driver's



5

As part of the pre-fitting process, one person will hold the sunshade on the glass while the other person temporarily "sticks" the magnet to the corresponding location on the inside of the glass. Magnets should be placed close to the window gasket and centered on the sunshade pocket (with the corresponding magnet). Once the locations are confirmed and the glass is clean, the protective film is removed and the magnet is applied to the glass.



6

On the exterior, a provided silane primer is applied to the location where the magnet will adhere to the glass. A clean cloth, moved in only one direction, is used to dry the solution.

Yes, They are Made for Trailers, Too

While Magne Shade is best known for its motorhome windshield sunshades, it also offers custom products for any size window — which means trailer owners are not left out. Pricing for the shade is dependent on size and image choice (if any) and will be quoted by the company.

Years ago, we had some fun with this concept and had a wine-glass scene printed on a sunshade made for the picture window adjacent to the dinette. The wine glass scene printed on a 46- x 46-inch shade, installed on a fifth wheel, retails for \$450 (\$250 for the fabric and \$200 for the digital printing; prices will vary), plus shipping. The wine glass scene (Dreamstime No.19781468) we chose for the test was an instant hit in the RV park.

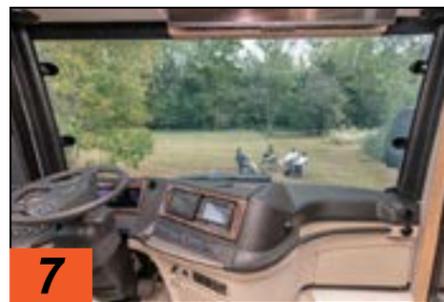
Beyond the attention it at-

tracts, the sunshade reduced heat dramatically, and kept the glaring hot sun off the adjacent dining table and hutch without pulling down the inside window shade. The difference in heat soak on the countertop was dramatic — and the wood was protected from sun.

Ordering Magne Shade products for a travel trailer or fifth wheel takes a little more time because the company will rely more heavily on your measurements and photographs. But don't worry: the company is very thorough in verifying that the dimensions and cropping are correct. Installation follows the same sequence as the motorhome windshield, except that the magnets are attached to the outside of the window. Placing the sunshade in camp requires a stepstool, but that's no big deal.



A 46- x 46-inch sunshade with a custom scene was made for the picture window adjacent to the dinette in a fifth wheel. Not only does the scene make a statement, the protection from harsh UV light and heat is impressive.



7

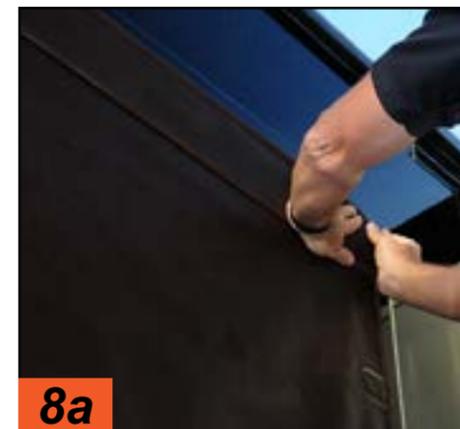
The Magne Shade significantly reduces UV rays and heat from entering the cabin of the motorhome, but the weave of the polyester fabric allows anyone inside the coach to see outside. (Photo courtesy Magne Shade)

door model has a \$165 price tag, but that also depends on the type and size of window. Magne Shade will quote exact prices when requested.

Magna Shade sunshades not only look good while helping to maintain your privacy, they protect interior woodwork and furniture upholstery from UV rays. And, when properly installed and tight on glass, they can withstand winds of up to 60 mph. Add a custom image and you'll be sure to attract a stream of gawkers. **RVE**

Source:

Magne Shade
(336) 753-0905
www.magneshade.com



8a



8b

Sunshade for the driver's window is pre-fit in the same manner as the windshield cover. In some cases, depending on window style and operation, longer magnets will be needed to compensate for a recessed glass pane.



9

The sunshade fits nicely on the driver's window, keeping the sun off the seat and dashboard.



10a



10b

Magne Shade's stock colors are black and brown, which fit nicely with virtually any exterior color scheme. Customers also can opt for a custom printed shade, which carries an additional cost but definitely makes a statement.

The Right Connection

How to install a 50-amp shore power outlet for your RV at home

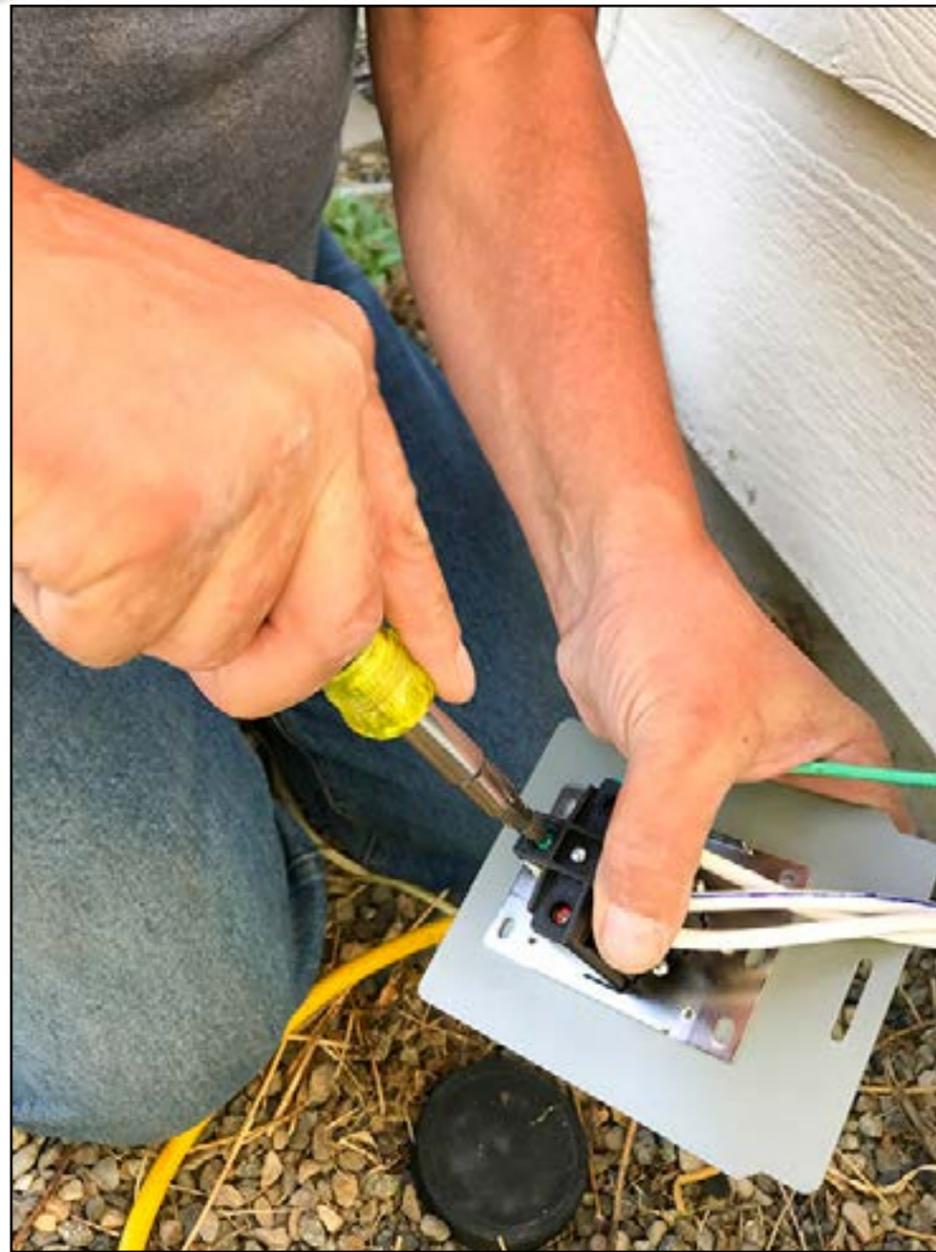
By Bruce W. Smith
(Photos by the author and
Larry D. Walton)

Given the wealth of factory-installed and aftermarket solar power systems available to today's RVs, living off the grid is becoming a lot more commonplace. That said, with all but the most potent systems — or more powerful AC generators — most boondockers still need to forego the comfort of an air conditioner and will need to carefully monitor what appliances are used at any one time to monitor amp draw and prevent overloading their power supply.

If you want all the bells and whistles while camping or using the RV in your driveway when guests arrive, you'll still need a major power source — in other words, hookups. Shore power, that source of 120/220-volt AC (alternating current) from a campground pedestal or your home's electrical system, allows you the ability to run all the "home" AC electrical gear as well as larger RV electricity hogs like A/C units, residential appliances, heaters and microwaves.

Typically, small- to medium-sized RVs are equipped with a 30-amp shore power connection, while larger RVs require a 50-amp power supply to keep things inside operating smoothly because they usually have higher amp-draw residential appliances and a pair of roof-mounted A/C units.

What's the difference between these two electrical systems? A 30-amp RV service is a 120-volt AC, single-pole supply that uses a NEMA (National Electrical Manufacturer's Association) TT-30 plug and receptacle. A 50-amp RV service is a 120/240-volt AC, two-pole supply that uses a NEMA 14-50R plug and receptacle. With a 30-amp service, your RV is supplied with 30 amps total at 120-volts AC. With a 50-amp service, the distribution system in the RV is split into two 50-amp legs, which means you have 100 amps total — in theory.



Some very small RVs from the old days would have a 15-amp 5-15 type plug on them; this is the residential receptacle we're all familiar with. There may be the occasional tiny trailer that still has a 5-15, but most start with the TT-30.

Why Add an RV Connection at Home?

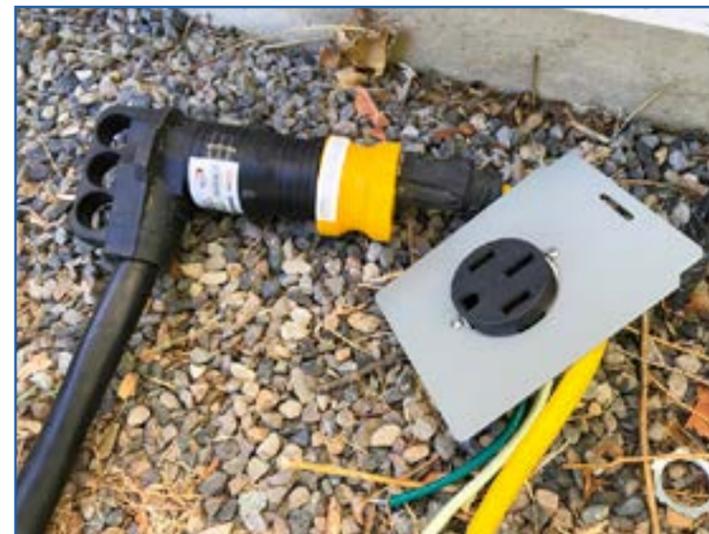
If you mentally picture wiring like a hose and electricity like water, it's easy to understand the conundrum. Simply stated, the bigger the hose, the more water that can flow through it. A typical household 15-amp receptacle can, at

most, handle 15 amps — but household receptacles are on a circuit with a number of other receptacles plugged into them. Plugging the RV into a household receptacle can "over-amp" the circuit — and, at the very least, lead to a tripped breaker. If the house wiring is questionable, however, the increase in amps needed can overheat the receptacle and/or wiring, which can cause a fire. Then there's the issue of reduced voltage, which can negatively impact RV systems.

Many folks rely on a "dogbone" adapter, as they're frequently called, to provide power to their RV in the



Installing a 50-amp RV outlet box at home is a convenient way to provide adequate shore power to larger RVs so roof A/Cs and other appliances can be run without fear of overloading the typical 15-amp home wall outlet circuits.



Replacing a 50-amp-to-15-amp step-down adapter with a dedicated 50-amp outlet (right) makes full use of larger RV's power needs, especially in high-electrical-demand situations such as full-time RVers experience.

driveway. For a 50-amp RV, that often means using two adapters (50- to 30-amp and 30- to 15-amp). Less than ideal.

adapter. Also, if you purchase a new RV down the road that has a 50-amp service you'll be all set.

One important point to remember: If

Besides over-amping the household circuit, many older homes have had receptacles and circuits converted from ungrounded to grounded 3-prong 5-15 receptacles using bootleg grounds, which can cause hot-skin conditions and other anomalies on the RV. (See more at www.rvelectricity.com.)

Because air-conditioners can easily draw up to 14 amps each (running, more to start), keeping the RV cool while watching TV, operating the microwave, a hair dryer or other appliances — not to mention the battery charging system — would easily overburden a typical 15-amp system.

The best and safest way to power your RV at home is to install an RV receptacle — they're not that expensive — while the solution to having enough electrical juice for a larger RV parked at home to operate at full capacity is to install a 50-amp service. A four-prong 50-amp service also allows you to plug in a three-prong 30-amp power cord to meet the needs of smaller RVs by using a "dogbone" step-down power

you're installing a 30-amp TT-30 receptacle, make sure the electrician chosen to run the wiring and make the needed upgrades at the house's distribution board (fuse box) is familiar with RV connections, and that he/she wires it for 120 volts AC, not 240. The receptacle looks similar to a NEMA 10-30, which is a 240-volt AC receptacle for a residential dryer. Many electricians have made this mistake, causing the RV to have "magic smoke" come out of everything.

According to Scott Barker, the master electrician selected to help us run a correct home hookup, installing a 50-amp RV outlet at home is an easy job for a qualified electrician. However, he also stressed that even though the job is easy, it's not something an amateur should try to do themselves due to all the safety and building code issues related to home wiring. "Always call a pro to do the electrical work behind the circuit breaker panel," said Barker.

Where a homeowner/RVer can save money is by doing a lot of the prep work, such as installing the cable and/or conduit that protects the wiring between the shore power outlet box and the home circuit breaker panel and running the wiring in the conduits. Those are labor-intensive tasks that don't require any electrical expertise.

Those little jobs are what we handled in setting up a 50-amp shore power plug-in to accommodate a 39-foot Keystone Sprinter fifth wheel parked at our house and being lived in full time. We also handled the shopping of parts needed for the job.

What You Need to Install an RV Shore Power Outlet

Barker provided a laundry list of parts to gather at our local home improvement center to install a 50-amp shore power plug-in located 45 feet from our home's main electrical panel:

- 50 feet of 10-gauge (green) for the ground wire
- 50 feet 8-gauge white (neutral)
- 100 feet 8-gauge (black) for the hot leads
- (5) 10-foot sections of rigid EMT 3/4-inch aluminum conduit
- A 3/4-inch threaded EMT conduit body
- (6) 3/4-inch EMT Compression Couplings
- 50-amp RV Power Outlet Box
- 50-amp 2-Pole circuit breaker

(Note: The store we used to source all of the above items was out of 8-gauge black wire, so we purchased 150 feet of white and used a felt marker to mark which one of the three 50-foot sections we cut was "neutral" so our electrician

didn't have to spend extra time using a circuit tester.)

Before Barker arrived to wire in the 50-amp service, we laid out the conduit, fished the four wires through them, connected the conduit and used a 1-inch spade bit so the wiring could be routed through the exterior wall and into the circuit breaker panel.

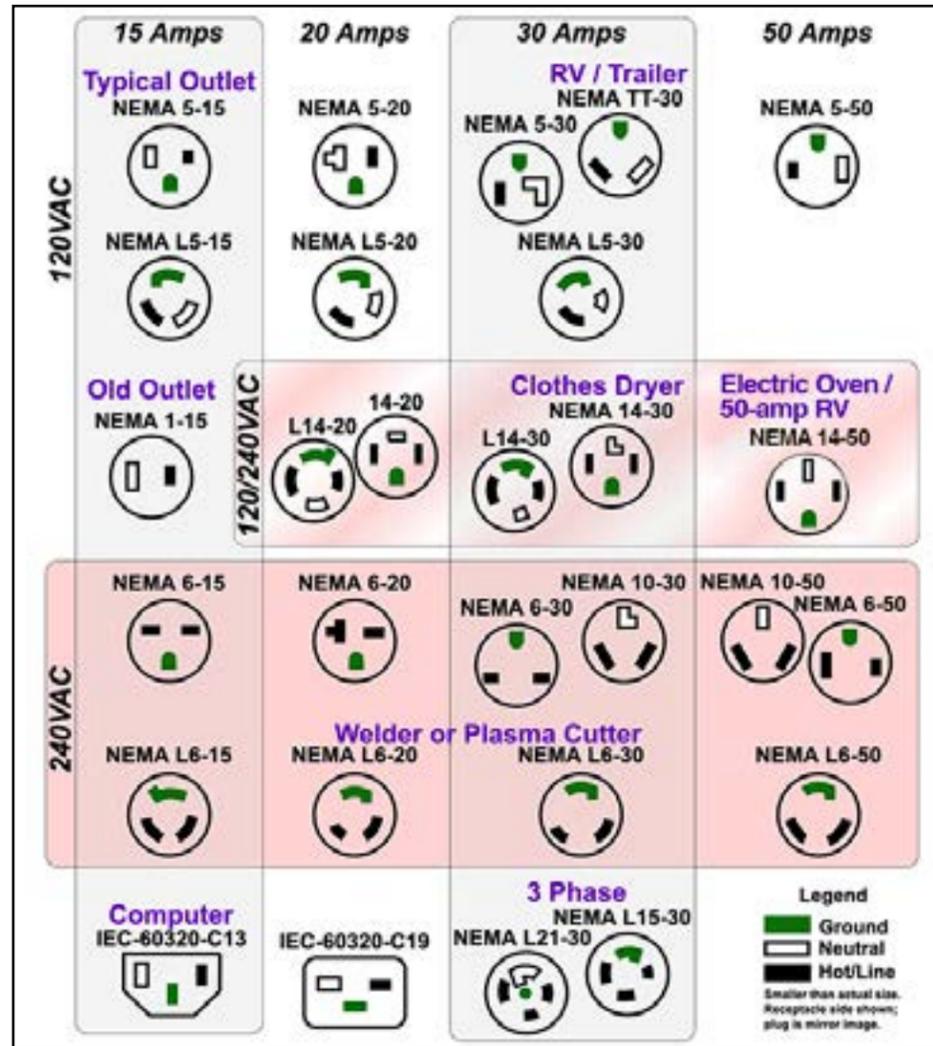
We left the four wires at both ends of the conduit exposed so all Barker had to do was make the connections at the RV outlet box and at the home's service panel. Doing this prep work helped reduce the labor cost.

Installing our 50-amp RV outlet only took about four hours. When it was complete, we had a convenient, dedicated, secure and waterproof shore power source to plug in our RV's 50-amp power cord — and it'll come in handy over the ensuing years when visiting friends and relatives drop by with their RVs.

Note: As with any electrical-related project, go over all the details with a licensed electrician prior to undertaking the work to make sure everyone is on the same page as to local codes and what part of the prep work you are allowed to do. Regulations and permits can vary widely, depending on where you live. RVE

Source:

Scott's Electric
(208) 440-6666
scottsele.com



An illustration of NEMA receptacles, showing ground, neutral and hot/line pins. Illustration courtesy Orion Lawlor, CC BY-SA 3.0 <<https://creativecommons.org/licenses/by-sa/3.0/>>, via Wikimedia Commons



1a



1b

Braided 20-pound fishing line attached to a weight makes it easy to "fish" the line through 10-foot sections of aluminum electrical conduit. Once the fishing line is passed through all the conduit we attached it to a small cord and pulled that through going the other direction. Then we attached the cord to the four electrical wires and pulled them through the 45-feet of conduit used in our install.



2a



2b

Be sure the conduit compression couplers are in place when fishing the line through each section. You don't want to retrace your "fishing" steps. These special compression couplers make it easy to put the sections of conduit together so they are watertight and rigid.



3

We used a 3/4-inch spade bit to bore a hole through the exterior wall inline with the knockout in the circuit breaker box. This allows the Conduit LB fitting to be installed.



4

A conduit "LB" wall fitting feeds the wiring directly from the exterior into the circuit breaker box located on the home's interior wall. Our setup required a 3/4-inch x 2 1/2-inch pipe nipple as the wiring portal to the circuit breaker panel.



5

Barker attached the 10-gauge ground wire (green) and the three 8-gauge wires to the back of the new RV outlet plug. Note the middle white wire has blue marks, indicating that's the "neutral" wire. We used the same markings on the wires exiting at the circuit breaker panel end.



6

The RV outlet plug ready for operation. The four-pin design of the outlet is typical of 50-amp RV design.



7

Barker of Scott's secured the new wiring for the 50-amp service to the house main circuit breaker panel. This is a job best left to professional electricians for both safety and building code requirements.



8

Our home-based 50-amp RV shore power outlet is capable of supplying the electrical demands of a 39-foot fifth wheel sporting with dual A/C units and other watt-loving electrical components. The door on the outlet box is watertight when closed and it can be padlocked for extra security.

P-Chassis Performance

A few bolt-on additions to GM's popular Class A gas underpinnings make a world of difference to ride and handling

By Chris Hemer
Photos by the author

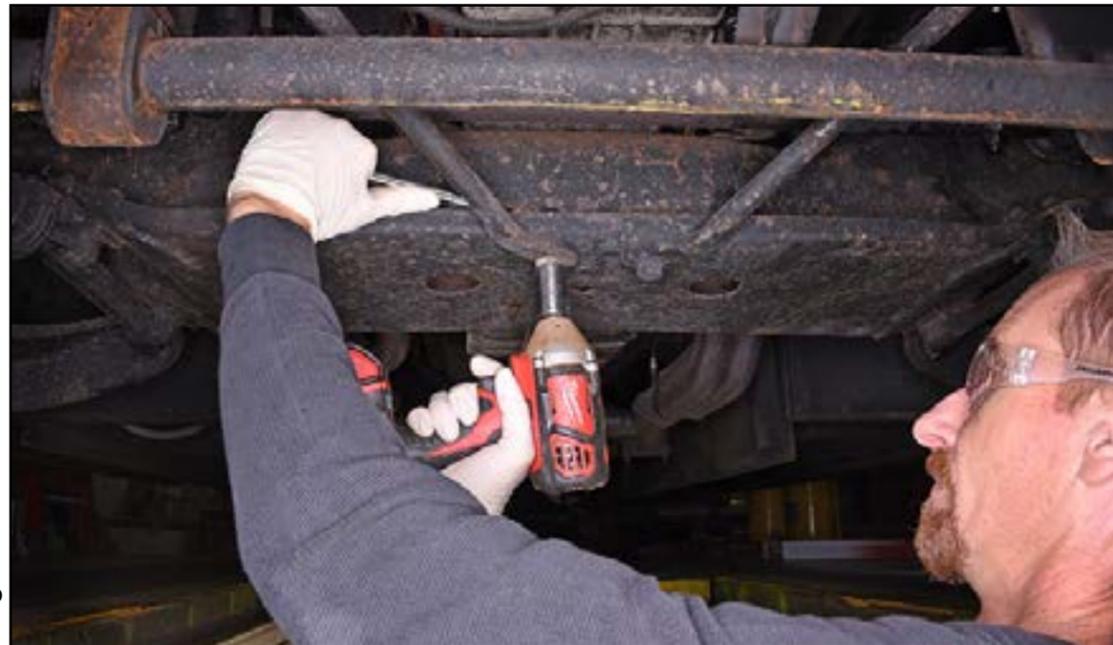
Once upon a time, there was more than just one Class A gas chassis to choose from. Long before Ford established dominance with its venerable F-53 chassis, General Motors (GM) offered an alternative with its wildly popular P32 chassis — featuring big-block Chevrolet power and front coil springs that offered a smoother ride than what the Ford could provide. Workhorse Custom Chassis picked up where GM left off with its W-Series chassis, but the company suffered several setbacks in the early 2000s that eventually led to the demise of a GM-powered Class A motorhome chassis.

The good news is, there are still tens of thousands of P32-chassis motorhomes on the road and parts are plenti-

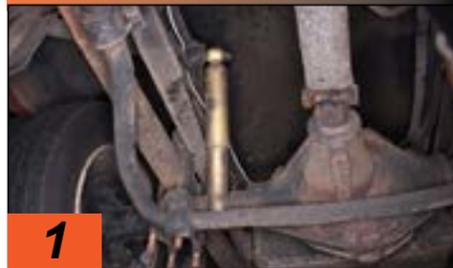
ful, making a P32 chassis motorhome a good used RV choice. However, these motorhomes were never known for their handling; in particular, the rear leaf packs allowed the rear axle to “walk” from side to side, contributing to that queasy “tail wagging the dog” sensation. And the suspension, while offering

a softer ride than the Ford, was often too squishy, leading to white-knuckle handling in high winds or when being passed by semi-trucks.

Ultra RV Products (URVP) a division of Brazel's RV Performance in Centralia, Washington, offers a number of solutions to restore driver control to the P32 chassis. One of the more popular combinations is the addition of its TigerTrak rear track bar, Roadmaster front spreader bar, Koni FSD shock absorbers, Roadmaster polyurethane anti-sway bar bushings and Safe-T-Plus steering control — all of which can be bolted on by a competent do-it-your-



Koni FSD Rear Shocks



This 2003 Safari Trek motorhome was purchased used and although it had relatively few miles, its home on the Oregon coast took its toll on the Koni shock absorbers the previous owner had installed. While these shocks will be replaced with newer models, the installation procedure is the same for any shock — original or otherwise. Koni's FSD (Frequency Selective Damping) shock absorbers feature special internal valving that filters out small bumps like highway expansion joints, while at the same time controlling swaying, pitching and bouncing.



The first step is to loosen and remove the lower shock mounting bolt, followed by the upper mount, which is a stud-and-nut arrangement. The shock can then be pulled free.



On the passenger side, the shock was difficult to remove from its lower mount. A prybar or, in a pinch, even a large flat-blade screwdriver can be employed to pry it out.

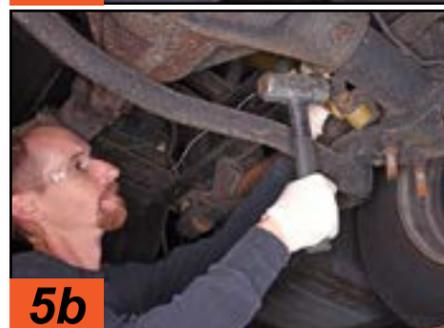
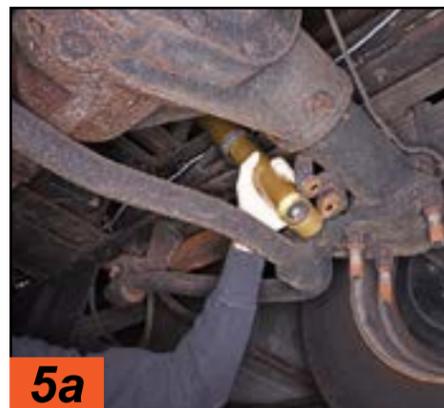


At the factory, the shocks were installed and then an impact gun used to compress the mounting ears around lower shock bushing. Because the bushings will likely be wider on the new shocks, it may be necessary to use a sledgehammer to widen the lower bracket ears so that the new shock will fit in the lower mount.

self.

Though URVP does not ordinarily perform installations, the company invited us to see how these components are installed on an employee's 2003 Safari Trek. The motorhome had been well cared for, but its suspension was becoming worn — and, as luck would have it, URVP was planning to install these components anyway. The entire

was completed, we noticed a dramatic improvement in handling; instead of a wallowing whale, the Trek now handles much like a large van. It's not a sports car by any means, but the additional control will be welcome for P32 owners who are fearful of sidewinds and are tired of making constant steering adjustments while driving. Let's see how it's done.



With the ears widened sufficiently, the new shock is attached to the upper mounting stud and the nut loosely attached. The shock is then swung into its lower mount; sometimes it may be necessary to tap the bolt through with a hammer.

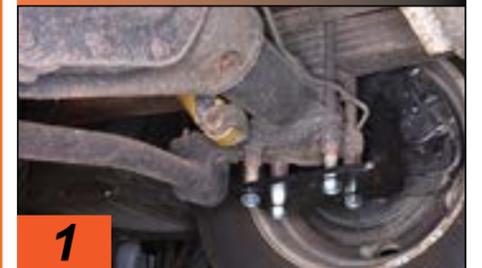


The upper shock and mounting hardware can then be tightened. Once the lower mount is snugged down, the ears will conform with the new shock.

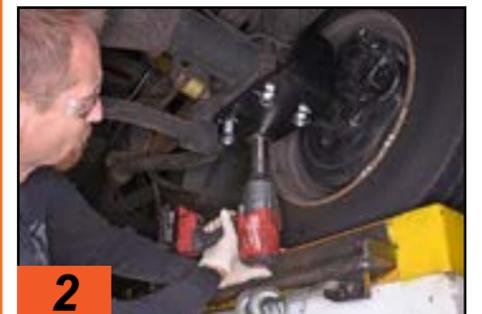


The completed shock installation as viewed from the front of the coach, facing rearward.

TigerTrak Rear Trac Bar



The TigerTrak rear trac bar gets its inspiration from a Panhard rod used on performance and racing cars. It connects to the rear axle and the frame to prevent axle lateral movement, which greatly improves stability. The first step toward mounting the TigerTrak bar is the passenger side mounting plate, which attaches to the U-bolts, underneath the axle, as shown. URVP notes that some motorhomes may have plenty of extra length underneath the nuts, in which case the plate may be slid over the U-bolt ends and held in place with the supplied nuts, as shown. In cases where there is not enough material at the end of the U-bolts for the plate, new, longer U-bolts will need to be installed.



While the threads on the U-bolts should be cleaned with a wire brush, sometimes the nuts are difficult to turn on the studs due to corrosion/oxidation. Rather than force them, anti-seize lubricant was applied to the U-bolt threads. The nuts then ran up the threads much more easily.



The installed plate. Note that there is still plenty of threads showing beneath the nuts. Also, note that lower axle plate is round on the bottom while the trac bar plate is flat; the original U-bolt nuts serve to provide clearance between the axle and the rounded axle plate.

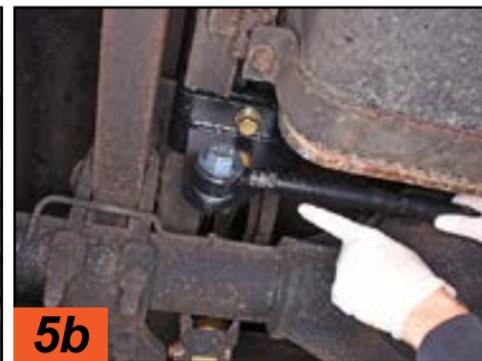


4

The driver's side bracket is attached to the C-channel frame section. The lower bolts clamp the bracket in place, while the upper bolts are used to force the bracket toward the frame rail, removing any gaps between the frame and bracket. The bolts will be snugged down to set the bracket in place, then the top bolts tightened.



5a



5b

The TigerTrak rod attaches to the top of the passenger's side bracket, followed by the driver's side. The bar is then rotated by hand to achieve the correct length, after which the adjustment nut (where the technician is pointing) is tightened.



6

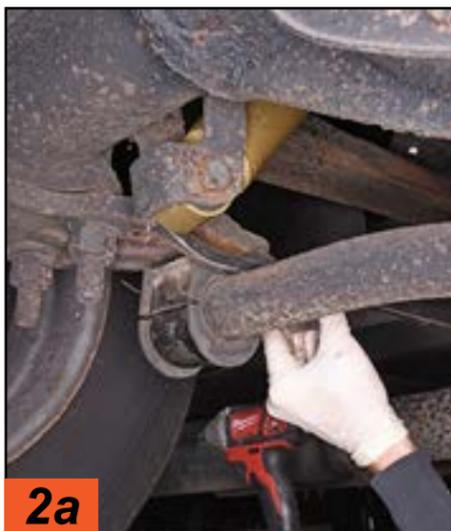
The completed TigerTrak installation. With the rear axle securely attached to the frame, it can no longer move from side-to-side, which virtually eliminates the "tail wagging the dog" sensation and greatly improves overall stability and handling.

Roadmaster Polyurethane Anti-sway Bar Bushings

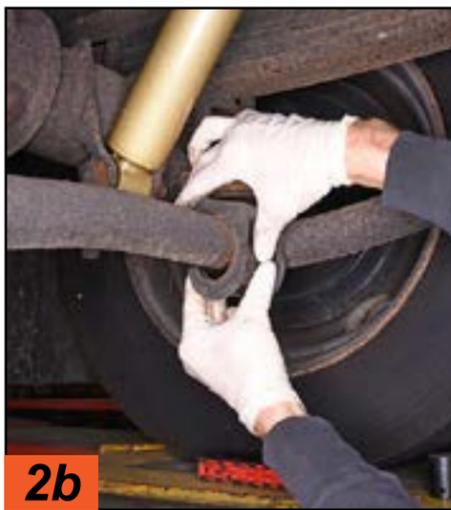


1

The P32 chassis comes equipped with a substantial rear anti-sway bar, but its rubber bushings can wear out over time, creating play that can affect handling. Replacing these with Roadmaster polyurethane bushings is the logical choice. The first step is to unbolt and remove the strap that secures the bushing, as shown here.

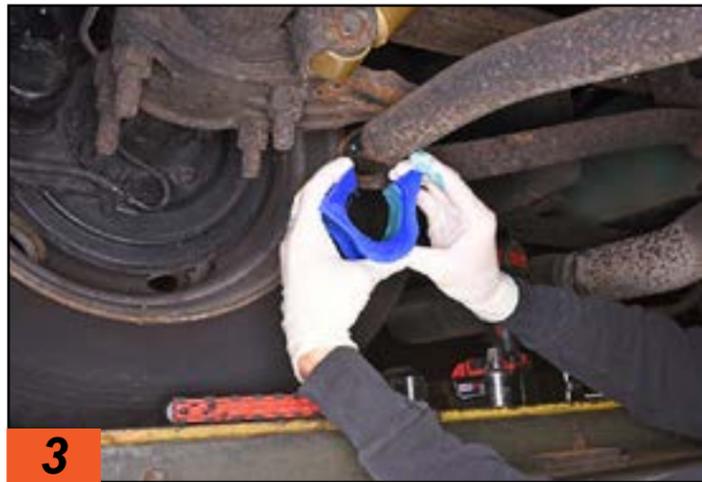


2a



2b

If the bushing is difficult to remove, once again a pry bar or long screwdriver can be employed to separate the bushing halves. The rubber bushings can then be separated and peeled away from the bar.



3

The Roadmaster bushings are made from polyurethane, which is much more durable than rubber and allows less movement (deflection). Roadmaster includes a special grease to reduce wear and prevent squeaking, which is applied liberally before the bushings are installed.



5



4

The Roadmaster bushing kit also includes new straps and hardware.

The bushing installation took less than an hour to complete — and will contribute to a tangible improvement in stability.

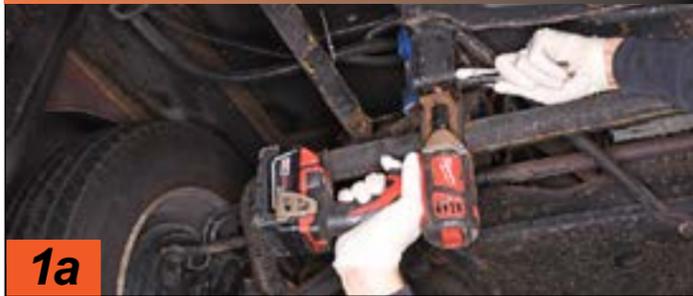


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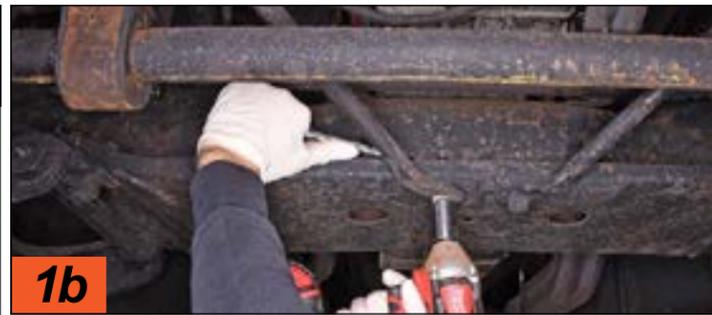


Roadmaster Front Spreader Bar



1a

This makes the bar less effective and can even break mounting bolts and brackets. The Roadmaster spreader bar (part number 1109-200) moves the mounts out to a wider location and has the added benefit of two more bushings. The spreader bar installs from the passenger side, so the first step is to remove the front anti-sway bar bushings, followed by the front cross member support struts.



1b

When Workhorse widened the front cross member on the late-model P-Series chassis, the intent was to provide better handling; unfortunately, the company left the narrow anti-sway bar mounts in place. This makes the bar less effective and can even break mounting bolts and brackets. The Roadmaster spreader bar (part number 1109-200) moves the mounts out to a wider location and has the added benefit of two more bushings. The spreader bar installs from the passenger side, so the first step is to remove the front anti-sway bar bushings, followed by the front cross member support struts.



2

New Roadmaster urethane bushings are installed in the same manner as the rear; this is done before the spreader bar is installed.



3

Installing the spreader bar requires some patience; it may be necessary to turn it back and forth to clear obstacles as it is worked into place.



4a

The spreader bar is lined up with the front anti-sway bar brackets (on both sides) and the hardware inserted through the mounting holes.



4b



5

New Roadmaster bushings are installed in the stock locations. Note that the Roadmaster spreader bar allows for additional bushings on the outer ends of the anti-sway bar, which reduces deflection so the anti-sway bar can work more effectively.



6

The completed spreader bar and front bushing installation.

Safe-T-Plus Steering Control



1a



1b

The Safe-T-Plus steering control is a large steering stabilizer that offers a number of benefits, including better steering control on uneven road surfaces, during high winds, or when being passed by 18-wheelers. The Roadmaster spreader bar incorporates mounts for the Safe-T-Plus, so installation in this application is a breeze. One end bolts to the ear on the spreader bar, while the other end clamps to the center link with the supplied bracket. RVE

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Sources:

Koni North America
(859) 586-4100
koni-na.com/en-US/NorthAmerica/Home

Roadmaster, Inc.
(800) 669-9690
roadmasterinc.com

Safe-T-Plus
(800) USA-SAFE
safe-t-plus.com

Ultra RV Products
(800) 417-4559
ultrarvproducts.com

Magnificent 7



Ride and handling problems in popular gas motorhome chassis can usually be improved — or even solved — with one of these bolt-on items

By Chris Hemer

It's often said that life is a journey, not a destination. This is particularly true for those who travel by motorhome. We all know where we want to go and what we want to see, but it's the mountain vistas, verdant meadows and roadside attractions along the way that make driving across America so enjoyable.

Unless your motorhome is plagued by ride and handling issues.

When freeway expansion joints sound like muffled explosions reverberating through the chassis, 18 wheelers nearly push you out of your lane or the steering wheel requires constant adjustment just to stay in a straight line, the journey loses some of its cachet. Now, instead of enjoying the passing scenery you're focused on just getting to your destination so you can put this stretch of highway behind you.

You're certainly not alone. In fact, poor ride and handling are among the

most common complaints RVers have about their gas motorhomes which, unlike their diesel counterparts, don't benefit from things like air suspensions. Fortunately, the aftermarket has come up with very effective solutions that can improve or even eliminate the issues

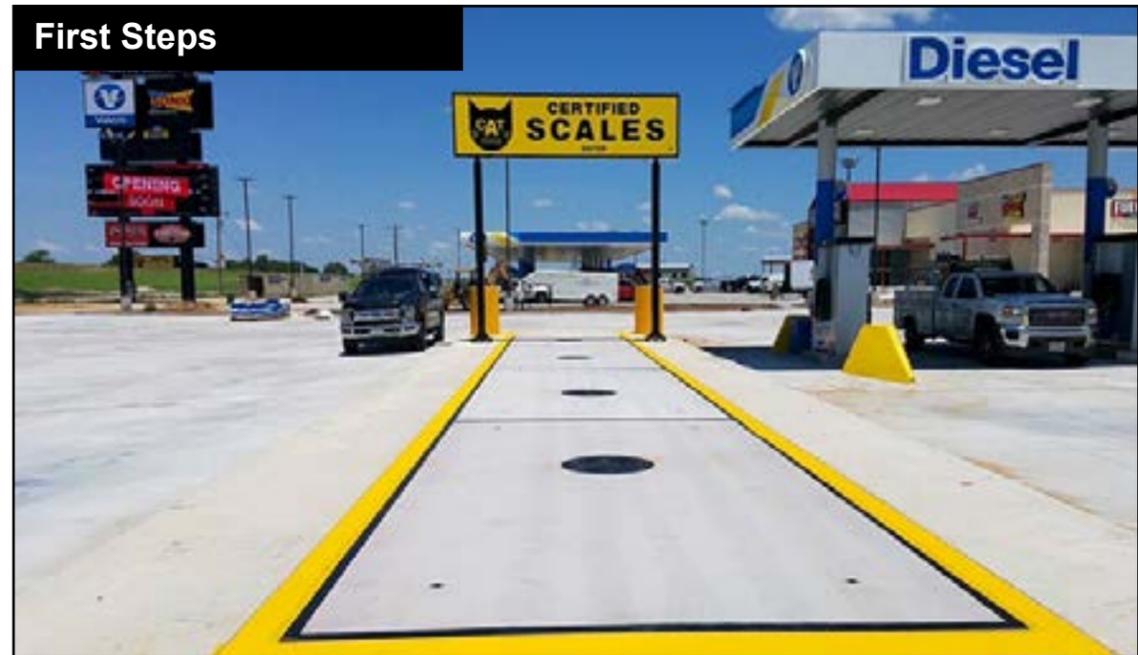
you're experiencing. Obviously, there are different chassis types on the road today, and some solutions are application-specific, so for the purpose of this article, we're going to focus on the most common gas chassis — Ford and GM — and the "Top 7" products you can install (or have installed) to make your RV manageable

again. These are unscientifically ranked based on popularity, effectiveness and cost (not necessarily in that order). Of course, your own motorhome may have issues that shift your suspension priorities.



There are tens of thousands of gas-chassis motorhomes on the road — and they all suffer, in varying degrees, from poor ride and handling

First Steps



CAT offers a nationwide network of three-platform scales. The company's website (catscale.com) offers a scale locator to find one near you, and has helpful instructions on how to weigh a tow vehicle/trailer and a motorhome.

In order to solve your suspension/handling woes, it's helpful to know exactly what is causing them. That may sound obvious, but unlike a car or truck where you probably can "feel" what's wrong, the origin of a motorhome problem may not be so plain. For example, excessive weight over the front or rear

may cause sagging, which may be a problem with improper weight distribution and overloading rather than the suspension itself. Similarly, bad handling response may not be caused by the shocks or springs, but by a problem with the steering — or even the rear suspension.

furniture and holding tank size/location can all have an effect on weight and balance.

A CAT or other public scale will provide front, rear and total weight, which is a good start. Better yet, seek a suspension and alignment shop that handles truck/RV chassis, and ask them if it has individual wheel scales, which will help ascertain weight at each wheel position. Too much weight, or improperly distributed weight, should be addressed first before selecting chassis components. And with that said, let's take a look at the possible upgrades.

Shock Absorbers

We rank shock absorbers as the Number One chassis update for three reasons: One, the factory shock absorbers usually aren't adequate even when new; two, shock absorbers are a relatively inexpensive addition; and three, they're easy to install. Depending on a car and the way it is driven, a set of shocks may not make that much of a difference, but on a heavier vehicle that requires a robust suspension, the addition of quality shock absorbers can really make a difference, reducing bounce and restoring ride comfort. Bilstein and Koni shocks are available for both GM and Ford motorhome chassis and are a fairly economical solution with a price range of around \$140-\$175 per shock.

Bilstein shocks are OEM equipment on many vehicles, but are available through the aftermarket as well. Bil-



Weighing by wheel position is the most accurate way to not only determine axle weight, but the weight on each individual wheel. This is important because while an axle may not be overloaded as a whole, one side of the axle may be overloaded if the RV is not correctly balanced. A scale is placed underneath each wheel and the weight is recorded on a worksheet, which is provided to the customer.



Bilstein shocks



Koni FSD shocks

stein was the first company to offer the monotube, high-pressure gas shock, which incorporates a separate, high-pressure gas chamber that exerts compression on the hydraulic fluid inside the shock absorber to prevent cavitation or shock fade. Each shock is tuned specifically for the application, resulting in improved ride quality, comfort and handling — and most Bilstein products available in the North American aftermarket are backed by a Limited Lifetime Warranty to the original owner. You can conduct a quick search to find out the correct shock absorbers for your application at cart.bilsteinus.com/

Koni is one of the most widely recognized shock brands in motorsports, and its Frequency Selective Damper (FSD) shock is a popular choice on Ford and GM motorhome chassis. The FSD employs a special valve that stays open while driving over expansion joints and other small impacts, allowing the oil to pass freely around the piston without generating much force — but if you hit a larger bump or start to sway, the small valve closes, forcing the fluid to pass through the piston itself and dramatically increasing rebound force. Put simply,

the FSD feature acts like a hydraulic amplifier that delays the build-up of pressure, according to the company. Since the FSD is mechanically self-adjusting, it doesn't require any wires, sensors or other equipment — just bolt them in and go. koni-na.com/en-US/NorthAmerica/Products/Motorhome/

Panhard Bar



SuperSteer 402 Trac Bar



TigerTrak Rear Trac Bar for Ford E-450 chassis

For as long as cars have been in existence, controlling axle side-to-side (lateral) movement has been an essential step in chassis tuning. In vehicles with coil springs in particular, there is nothing to stop the rear axle from “walking” from side to side under lateral loads (like sharp corners), which creates instability. Cars and trucks with leaf spring suspensions generally don't require a Panhard bar, because the leaf spring packs bolted to either end of the rear axle prevent it from walking. However, large Class A and C motorhomes, with their substantial weight and high center of gravity, can still suffer from rear axle lateral movement, which contributes to that uneasy tail happy feeling.

A Panhard bar is, arguably, the single best thing you can add to a Class A or Class C motorhome (right up there with good shocks) — particularly those with a lot of rear overhang. The Panhard bar bolts to the rear axle at one end (the mounting point depends on the application) and to the frame at the other along the same plane, preventing the axle from moving from side-to-side. With the rear axle rigidly located, steering input is dramatically improved.

SuperSteer Parts (supersteerparts.com) and Ultra RV Products (ultrarvproducts.com/) both offer kits for a wide range of GM and Ford gas-powered motorhome chassis, and pricing is usually in the \$500-\$600 range.

Anti-sway Bar



Roadmaster RSS Anti-Sway Bar

Often referred to simply as “sway bars,” an anti-sway bar works by resisting the force applied to it when weight is transferred from one side of the vehicle to the other, as when entering a turn. As you may well imagine, a motorhome can impose a lot of such force — and if your motorhome doesn't have one or more anti-sway bars, you're likely accustomed to excessive sway and body roll that can make for unpredictable handling. Depending on the chassis, your motorhome may already have an anti-sway bar, but its handling could be improved with a larger replacement bar, an auxiliary bar (which bolts on in addition to the existing anti-sway bar) and/or a front anti-sway bar kit. Roadmaster (roadmasterinc.com/) and SuperSteer Parts offer several kits for a variety of applications, from pick-ups and vans to large Class A motorhomes. Check out their websites for more information, available kits, and pricing.

Steering Stabilizer

Some motorhomes can make you wonder if the steering wheel is actually attached to *anything* as you drive down

the road; you feel like you constantly have to saw at the wheel just to keep the motorhome in its own lane, and on-center feel is practically non-existent. That's bad enough — but if one wheel drops off the pavement, you get



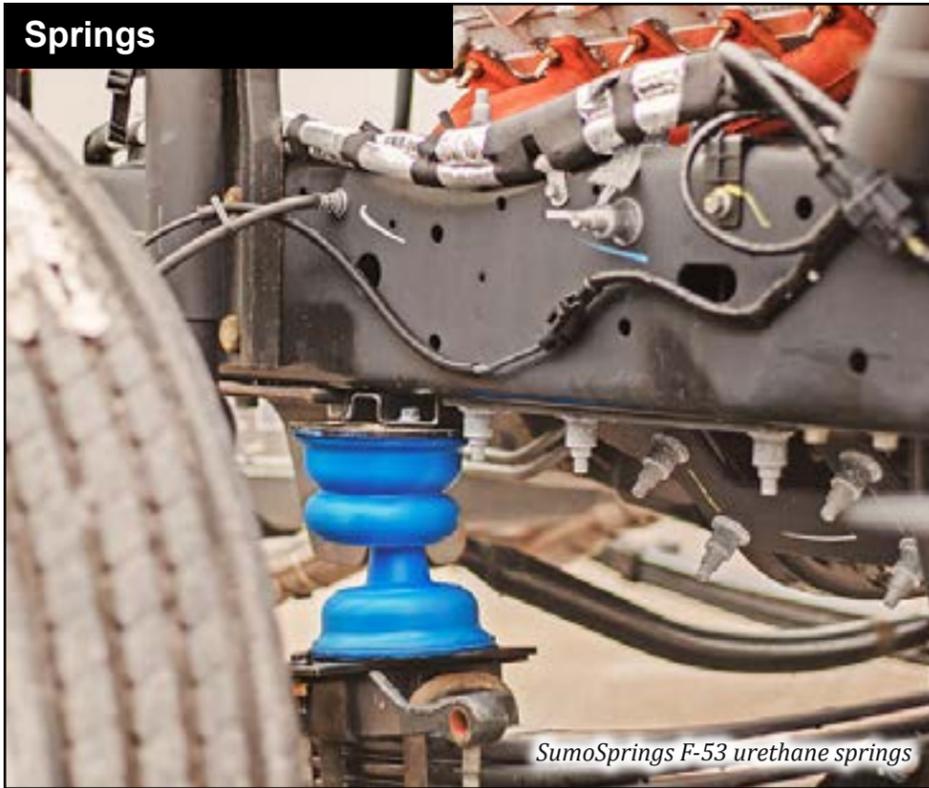
Safe-T-Plus 41-230 Steering Control



Roadmaster RSSA Reflex

pushed by a side wind or experience a blowout, the negative characteristics of the steering system will be compounded in a hurry. That's why a steering stabilizer should be considered a must-have in your motorhome. A steering stabilizer like the Safe-T-Plus (safe-t-plus.com/) or Roadmaster Reflex (roadmasterinc.com/products/rss/reflex.php) help solve steering issues by applying increasing force as the steering center link goes off center (either by the driver's steering input or due to unexpected conditions), encouraging the steering wheel to always return to center. These stabilizers can be installed in an hour or less with common hand tools and yield a tangible difference in steering control.

Springs



SumoSprings F-53 urethane springs

We ranked springs in fifth place simply because not all motorhomes need help in this area — but depending on the situation, springs may rank higher on your wish list. For example, if the front of your GM P30-P32 chassis bottoms out, sags or the chassis appears to lean to one side, it could be that one or both front springs are worn out and in need of replacement. SuperSteer Parts offers its own coil springs based on the motorhome's front axle weight: Up to 4,300 pounds; 4,400-4,900 pounds; 5,000-5300 pounds; 5,400-5,900 pounds; and 6,000 pounds or more. You *must* have the actual front axle weight before ordering. The right

springs will not only correct the aforementioned issues but also can improve handling and ride quality.

For the rear of the P30-P32, SuperSprings International (superspringsinternational.com) offers its SSR-290-54 SumoSpring kit, which consists of a pair patented, micro-cellular progressive urethane springs designed to enhance (or restore) load carrying capability, reduce sway and improve driver control, according to the company. These SumoSprings boast 2,800 pounds of load capacity at 50% compression and install easily in place of the jounce bumper, over the center of the leaf spring pack.



SuperSteer coil springs

The Ford F-53 Class A chassis utilizes leaf springs for the front axle, not coils, but SuperSprings offers SumoSprings kits for both ends, as well as its original SuperSprings, a type of overload or "helper" spring that features dual-roller shackles to help facilitate movement. Like the SumoSprings, these SuperSprings are designed for easy bolt-in installation in about an hour and do not require the disassembly of the rear leaf springs.

Bushing Kit

From the factory, motorhome chassis come equipped with rubber bushings on the anti-sway bar(s), which do a satisfactory job when the chassis is new — but over time, they wear out and allow deflection (movement under load), which reduces the effectiveness of the anti-sway bar. Replacing the rubber bushings with a polyurethane bushing kit from Roadmaster is an inexpensive way to optimize the performance of your existing anti-sway bar(s) on Ford and GM motorhome chassis, and retail in the \$120 range, depending on the application.



Anti-sway bushings

Bell Crank/Bell Crank Arm (GM chassis)

The GM P30-P32 chassis, in particular, can suffer from sloppy steering, so in addition to a steering stabilizer, you should consider a SuperSteer Bell Crank, also known as the steering support assembly or "idler." The factory bell crank bears a considerable load while turning, causing the bushings to wear out, resulting in sloppy steering. The SuperSteer Bell Crank is a bolt-in replacement for the factory part, featuring a high-strength cast body, steel spindle and tapered roller bearings. The SuperSteer Bell Crank retails for \$285. While you're at it, you may as well replace the factory bell crank arm with a stronger SuperSteer replacement, for \$332. **RVE**



SuperSteer Bell Crank and replacement bell crank arm

Inside Job



good news is that it only takes a few hours and a few common household and RV-specific solutions to make your RV sparkle like new inside.

Rather than an overview of cleaning in general, we've broken it up into categories to make finding the solution easier and faster. While we can't cover every possible cleaning scenario (that could be a book in itself) we've done our best to present effective ways to solve the cleaning issues you're likely to find. And don't forget, the Internet is a great resource when it comes to finding solutions to specific stains on various materials/surfaces.



Keeping your RV's interior clean is as simple as applying the right products and techniques

By Chris Hemer

As the travel season comes to a close, now is a good time to think about detailing the interior of your RV before Old Man Winter comes rolling in. None of us particularly like the idea of housework, but cleaning the RV's living space before putting the rig away for the season means you'll return to a clean, fresh interior come spring-

time. Besides, keeping your carpet/floors, furniture and cabinets clean will keep them looking newer, longer.

RV interiors are different from many homes in that they can consist of multiple materials and surfaces, like carpet, fabric upholstery, leather/Ultraleather, tile, stone, fiberglass and wood — and each has its own cleaning regimen. The



When an RV is new, most components/surfaces will be fitted with a tag or sticker that tells you how to clean the without causing damage. If not, contact the manufacturer if you are uncertain about cleaning; most of the time a non-abrasive cleanser will do the job without scratching the finish. If you have the owner's manual, it should also contain cleaning instructions.



Odds are good you don't have a ton of storage space for cleaning products in your RV, but you don't need much. A few different products can handle all your cleaning needs.



While canned food isn't rodent dining fare, they can expire; it's a good idea to empty your cabinets and pantry for the winter. (Photo courtesy Wikipedia)

Cabinets

While keeping your RV stocked up and ready for the next trip is certainly convenient during travel season, leftover food stuffs should be removed from the cabinets and pantry before winter. Quite apart from the fact that food and supplies will probably expire during storage, they invite insects and rodents in to dine on your leftovers. Rats and mice, in particular, have been known to chew through pipes, plumbing and wiring to get to your goodies — and once inside, will likely find your RV an inviting place to spend the winter. Either throw your food items out or place them in plastic containers and take them home. Then, vacuum the inside of the cabinets and clean them with an all-purpose cleaner, or just soap and warm water. Use caution when using cleaning products that are only designed for real wood. Some laminates or photo-printed surfaces can become damaged by using chemicals instead of a damp cloth. Lysol or Clorox wipes work well to clean up any remaining food or stains.

Carpet

Most common stains can be removed with a spot carpet cleaner, but beware: They're not all created equal. In fact, some carpet cleaning products can actually make stains worse, as their residue can actually attract dirt.

So how do you know what's best for you and your RV? Look for products that have been awarded the Carpet and



Spills can happen whether in your home or RV. The important thing is to address them immediately — the longer it sits, the harder the stain will be to remove. To clean carpet, first blot the stain with clean white paper towel or a clean white cloth. Keep blotting until you've soaked up as much of the offending liquid as possible.

Rug Institute (CRI) Seal of Approval (SOA). The CRI tests an assortment of carpet cleaning solutions and equipment and has found a big difference in how well these products work. According to the organization's website, the CRI is the carpet industry's only scientific program designed to test and measure the effectiveness of cleaning products and equipment, helping consumers make informed decisions about the product(s) they use. Products are evaluated on seven performance



Spray the stain with your chosen cleaner, per the product's instructions. If this is your first time using the product, make sure to test it on an inconspicuous area first. We've had good results with Spot Shot, which has very positive reviews online and is approved by the Carpet and Rug Institute.

attributes, which include soil removal efficacy, resoiling, residual moisture, surface appearance change, pH level and optical brighteners.

In addition, products that have passed the SOA testing protocol have also earned certification as "green" products, which is an important, considering that an RV interior is a relatively small space and some chemicals can cause health problems for sensitive individuals.

Spot Shot, a product of the WD-40 company, is one carpet cleaning product that is a recipient of the CRI SOA and has received rave reviews on the Internet. We've tried and continue to use this product ourselves on both carpet and fabric upholstery (always test any product in an inconspicuous area first before using as directed). Spot Shot has a mild scent and is non-toxic and biodegradable, so it's safe for you, your pets and your kids. For pet stains, consider Spot Shot Pet Instant Stain and Odor Eliminator, or Nature's Miracle.

Whatever carpet you have or product you choose, the CRI offers these general spot cleaning tips:

- Act quickly — delaying may cause the spill to become a permanent stain. Blot liquids with a dry, white absorbent cloth or white paper towels. Gently scrape up semi-solids with a rounded spoon. Break up solids and vacuum.
- Pretest any spot removal solution (for color transfer to the cloth or damage to the carpet) in an inconspicuous area. If a change occurs, select another solution.
- Apply a small amount of the solution to a white cloth and work in gently (don't rub), working from the edges of the spill to the center to prevent spreading. Allow to remain on the spill a few minutes. Be patient. Blot.

• Continue to use the first agent as long as there is a transfer of the spill to the cloth. Complete removal may require repeating the same step several times.

- When the spill is completely removed, rinse the area with cold water; blot with a

dry cloth until all moisture is removed.

For tips on removing specific types of stains, the CRI's Spot Solver page can help: <https://carpet-rug.org/resources/spot-solver/>. For a list of approved cleaning products and equipment, visit <https://carpet-rug.org/testing/seal-of-approval-program/>



Blot the stain, moving from the outside to the inside of the area. This will help prevent spreading the spill and making it larger. Once it appears that all the stain has been removed (no more of liquid is visible on your cleaning cloth), use another clean cloth dipped in water to rinse the area. Blot as dry as you can, then leave a dry piece of paper towel or cloth on the area until completely dry. This will help wick more moisture from the fibers and prevent you (or others) from stepping on the area.



Many surfaces, such as laminate and vinyl, don't have specific instructions on cleaning. In these instances, a good multi-purpose cleaner like Voom! RV Cleaner from Roadmaster can solve most of your problems (dilute as directed). We use this stuff all the time in our home and RV.

Countertops

While laminate was once the sole choice for RV countertops, there is now a full range of products for RV use, up to and including natural stone. Depending on the surface, the cleaning procedures are different; laminate, for example, cleans up easily with soap and



Thetford makes fiberglass products, so you can be sure that its Aqua Clean Kitchen and Bath Cleaner is safe for use on porcelain, countertops and stainless-steel. The product removes soap scum, iron stains and hard water deposits, is bleach-free and 100% biodegradable. It can also be used on fiberglass sinks, showers and toilets.

water and/or an "all purpose" product like Roadmaster's Voom! RV Cleaner.

There are also a number of different companies manufacturing so-called "solid surface" products, which is pretty much any surface made from polyester, acrylic or, in some instances, a combination of both. These counters are

easy to clean but can scratch easily if an abrasive is applied. Use only a non-abrasive cleanser like Bar Keepers Friend and a non-scratching scrub sponge on countertops to avoid damage (that goes for the solid-surface sink, too, if applicable). The good news is, solid surface products are all easy to repair, so if you do scratch it, the damage can usually be buffed out.

The last category is natural stone and engineered stone surfaces. The only thing to be aware of here is that natural stone is porous, even if a coating has been applied. That means there are tiny nooks and crannies in the surface that can allow bacteria to grow (which is why it's not used in restaurant kitchens)

— make sure you use an anti-bacterial cleaner on these counters, like the aforementioned Lysol or Clorox wipes, to be safe, and use non-scratching pads to remove tough stains. Engineered stone products look and feel like natural stone but are non-porous. If in doubt, ask your dealer/manufacturer what material was used in your RV, and recommendations for cleaning it.



The Dremel Versa is one of the most versatile tools for cleaning bathrooms and other areas in an RV. It's also perfect for cleaning barbecue grills, wheels and patio furniture. The kit comes with three cleaning pads for specific purposes, a base for the pad, bristle brush and rubber splash guard.

Fiberglass

Whether it's in your sinks, toilet, shower or all of the above, fiberglass is a fact of life in an RV — so learning to clean it effectively and safely is crucial. Above all, it is important to remember that, while fiberglass is strong, its surface is delicate and can be damaged easily. In sinks, use a store-bought, non-abrasive cleanser, a specialty product like Thetford's Aqua Clean, or a home remedy like baking soda and a sponge dipped in white vinegar.

If you want to dial back on the elbow grease, one product we've used with a great deal of success is the Dremel Versa, a handheld, wireless cleaning device that makes easy work of removing grime and stains from various surfaces — and really works well in the bathroom with all its crevices. The Versa fits ergonomically in your hand, is lightweight and can be fully charged in around two hours. It typically sells for \$40 on Amazon (<https://amzn.to/3xCSIvW>) and comes with an eraser pad, non-scratch pad, heavy duty pad, bristle brush, rubber splash guard (which sometimes gets in the way when working in tight areas) and the base for attaching the pads. Replacement pads are available in kit form or individually online and at home improvement stores.

The eraser pad is non-scratch and designed for cleaning showers, sinks and other similar surfaces; we've found



The Versa's bristle brush works well around soap dishes, diverter valves and any other areas too hard to reach with a towel. Those with hand/arm issues related to repetitive motion will love the Dremel Versa.

the bristle brush to be the most versatile for bathroom cleaning. For years, folks have struggled to remove debris and stains (mostly from hard water and rust) from tiny channels and hardware obstacles using a microfiber towel and a wooden chopstick — yes, a chopstick is a great “tool” for getting into grooves and channels — but the Dremel Versa really improves the process.

Cleaning the shower pan and walls takes about 30 minutes using the bristle brush and Voom! RV Cleaner. Once the surface grime is broken up, a microfiber cloth removes all residue. The Versa is small, lightweight and requires little effort to guide. It's best not to bear down on the brush or pad because the motor will slow down; just let the brush and pads do all the work.

While on the subject of showers, you can make your life a lot easier by using a shower squeegee on the walls and door after every shower, and by drying with your bath or microfiber towel. This simple habit will prevent hard water spots from forming (which can be difficult to remove). If you've already got them, try the same cleansing methods mentioned above.



A shower squeegee like this one is invaluable at preventing hard water spots that can be very difficult to remove. Squeegee the walls and door after showering, then dry all surfaces with a microfiber or bath towel. You'll never have to worry about hard water deposits again.



A good cleanser is essential for removing hardwater spots and other stubborn stains. Choose a mild product like Bar Keepers Friend or Bon Ami, which have no bleach and won't scratch. A sponge with a non-scratching scrubbing pad is a great applicator.

Plumbing Fixtures and Stainless-Steel

For touch-ups, use a common glass cleaner or white vinegar and a paper towel — but for hard deposits, soap scum and the like, it's hard to beat a non-abrasive cleanser like Bon Ami or Bar Keepers Friend. And keep in mind that stainless-steel actually has a “grain” (directional lines in the surface), so it's easier and more effective to

clean it with the grain, rather than against it.

Floors

Obviously, sweeping regularly is the best way to protect your floor from scratches, regardless of whether the surface is vinyl, laminate or tile. Even so, you're still going to have to mop once in a while — and who

wants to deal with a heavy bucket of water and a wet mop? The Swiffer Wet-Jet is a great solution for light mopping: Squeeze the trigger, and the multi-purpose cleaning solution sprays in front of the mop head. A textured pad collects dirt, while a large scrubbing strip up front makes it easy to remove tough or dried stains. The WetJet is safe for all types of floors — and when you're done mopping, simply tear off the textured pad and throw it away.



The Swiffer WetJet is a compact, lightweight and effective way to clean wood, laminate and tile floors.

Furniture & Woodwork

The “wood” part of this is easy: Real or fake, we like Pledge for wood care, as it brightens the finish and protects it from water stains. It works on sealed wood and laminates, which is what you'll find in most RV interiors.

Upholstery, though, is quite a different matter. As with carpet, there are dozens (perhaps hundreds) of different fabrics on the market today, not to mention leather, synthetic leather (aka Ultraleather) and synthetic suede (aka microsuede). Generally speaking, most of the techniques used to clean carpet will also work on fabric furniture, but it's a good idea to find out how to clean your specific furniture — and what product to use — before an accident happens. For example, Ultraleather and microsuede have a reputation for easy clean up — but where the former cleans up with a sponge, mild detergent and water, the same isn't necessarily true for the latter. There are actually different types of microsuede — some that clean up with water, some that don't — and if you use water on the wrong type, you can cause a permanent stain.

Some microsuede materials repel liquid, while others can be stained by it — so the first step is to determine the type of microsuede used. Underneath the seat cushion or elsewhere, there should be a label that identifies the type of fabric, and how it should be cleaned. Furniture labeled “W” should be



For wood surfaces (both real and fake), it's hard to beat good 'ole Pledge. Spray it on, wipe it off—it removes dust and leaves a protective film behind.

cleaned with a water-based solution, or just water. “S”-labeled furniture, on the other hand, will be stained by water and must be cleaned with a water-free dry cleaning solvent. There are consumer products designed for dry-cleaning, such as Woolite Carpet and Upholstery Cleaner, but it is probably best to seek professional help with this type of product. An “X” label means that you should vacuum clean only. For this type of fabric, make sure you attend to the spill right away — dab it lightly with white paper towel or cloth so that it won't soak in, and sprinkle baking soda over larger spills. When it dries, use a vacuum on the area. In general, it's always a good idea to vacuum before cleaning and perform a “spot test” with any cleaning product in an inconspicuous area (like the back of the furniture, for instance) to make sure it does not discolor the fabric.

a number of stubborn messes, such as tar, stickers, tape residue and Crayon marks — but the company also claims it can remove oil, blood, lipstick, mascara and shoe polish. It's environmentally friendly and has a pleasant citrus scent.

•**Dirty Fingerprints and Smudges:** We have found that the original Mr. Clean Magic Eraser really does work like magic on a variety of surfaces. Made from melamine resin foam, these pads require only water to clean walls, doors, light switch panels and more — just be sure to test first on an inconspicuous spot to make sure it won't cause scratch marks. There are also bath and kitchen variants available that make cleaning specific surfaces easier.

•**Windows:** Take your pick from any of the dozens of window-cleaning products out there and hope the one you choose really works. We found Invisible Glass (invisibleglass.com) to be one

A Few Other Cleaning Tips

•**Dust:** A Swiffer duster is great for getting in between mini blinds; the California Dash Duster is perfect for removing dust from flat surfaces.

•**Pet Fur:** Using a vacuum to remove pet hair from furniture and bedding is almost futile. The best method we've found is to use a silicone pet hairbrush, or even a common rubber dishwashing glove, to rub the fur out of the fabric. Then you can vacuum it up. For smaller accumulations of pet hair, Scotch Brite 50% Stickier Large Surface Lint Rollers (<https://amzn.to/3pkS5kb>) work great on upholstery and other cloth materials.

•**Sticky Stuff:** In our opinion, it's hard to beat original Goo Gone. We've used it on

of the best window cleaners out there. Or, you can take a tip from old pros and use plain 'ole white vinegar and newspaper.



Sticky stuff, like this glue residue on a laminate counter, can be murder to remove. We applied a small amount of Goo Gone, let the product sit for about five minutes, then simply wiped it away. This product really works, has a nice citrus fragrance and is safe for use on most surfaces.



As an alternative, a popular home remedy for many cleaning jobs — including water spots and even stain eradication — is white vinegar, baking soda and a sponge. Soak the sponge in vinegar, and use the baking soda as a cleanser. White vinegar is also great for cleaning windows when used with wadded-up newspaper. **RVE**

Sources:

Roadmaster, Inc.
(800) 669-9690
roadmasterinc.com

Thetford Corporation
(734) 769-6000
thetford.com

Other products mentioned in this article are readily available at most grocery stores and home improvement centers.

PLANES, TRAINS and AUTOMOBILES



All images throughout courtesy of the specific museums featured

Planning a vacation? Museums are a great addition to any trip — and here's a lineup of the best transportation museums in every state you can drive to.

By Bruce Hampson

It's said that Americans have a love affair with their cars, but that's only partially true. What we have is a love affair with personal transportation — and with the freedom to point those machines in any direction we choose, whenever we choose. Americans love to travel — and when it comes to travel, mostly we love to drive to where we're going.

That was just as true before the pandemic as it is today. There's a reason for that: The United States is a big place. The lower 48 states occupy more

than 3,119,884 square miles, and more than 2.95 million square miles of that is contiguous land. Add in Alaska — which we can also drive to and through — and the numbers grow another 20% or so. That's a lot of real estate.

That's really the biggest difference between RVers in America and our European counterparts. Stateside, we think nothing of traveling from, say, San Diego, California, to Yellowstone National Park for a vacation; it's a trip of roughly 1,100 miles in each direction. Put another way, it's about the same distance as Rome, Italy, is to Madrid,

Spain. That's not a drive many Europeans take.

In fact, the sheer size of America is something most European RVers can't wrap their arms around. Heck, the state of Oregon, all by itself, is larger in area than the United Kingdom. The state of Montana is 9,000 square miles larger than Germany. *It's a big place.* And that's also why we like big vehicles, from sedans and SUVs to pickup trucks and RVs — because when you travel for long distances, you like to do it in comfort.

So, yea, we love our vehicles. Cars



Pedal car collection at the Gilmore Car Museum, Michigan.

and motorcycles may not have been invented in America, but people like Henry Ford, William Harley and three guys with the last name of Davidson — Walter, Arthur and William — put them in people's garages. As for flight, the birthplace of aviation is Kitty Hawk, North Carolina, while railroads did more in their era for moving people than any other conveyance. America's rail and highway systems are second to none.

Given all that, the staff of *RV Enthusiast* wondered just how many states paid homage to transportation with museums and vehicle collections. The answer, as we discovered, was quickly evident: all of them, in one fashion or another.

So, we decided to put together a lineup of the best.

The rules were simple: identify the best automotive, air and rail museums, state by state. Then, of course, we broke the rules, because some *RVE* staffers are just as enamored with motorcycles as they are with four-wheeled vehicles. You'll also find a firefighting museum in here, along with a repository of John Deere tractors, because, well, we thought they were cool. We did manage to hold the line on space and maritime museums, because adding them to the mix would have made a difficult task completely unmanageable. Either or both may show up in a future

state — so a lot of interesting places were left on the cutting-room floor. This was especially a problem with a state like Florida, home to such historical automotive repositories as the Sarasota Classic Car Museum, the Fort Lauderdale Antique Car Museum and even Don Garlits' Museum of Drag Racing. All are places we'd visit in a New York minute — and none are included here. And, since this list trends towards overlooked jewels, we sometimes ignored the obvious for the understated.

We also shied away from museums focusing on the exploits of just one person. Hence, we bypassed stockcar hotshoe Mark Martin's museum in Batesville, Arkansas, the Evel Knievel museum in Topeka, Kansas, the Penske Racing Museum in Phoenix, Arizona...and a lot of others. This is not, by the way, a travelogue. *RV Enthusiast* leaves the fluffy trav-

el stories to the other guys, so don't expect to see page upon page memorializing where we went, what we did and what we ate and drank. This list simply provides a short overview of what we feel are the top transportation museums across this huge country, interesting places that should be on your radar when outlining your next vacation. The roads you take to get there, what you see, what else you do — it's all up to you. And, while we've also included a possible RV park to stay at near the primary museum for each state, we haven't vetted any of them. While each tends to own exemplary reviews, they — like the museums — are only suggestions. We just planted the seed; it's up to you as to whether it grows into anything.

Hopefully, it will. While few new transportation museums have opened of late, a number have been shut-

tered, from the Yanke Motor Museum in Boise, Idaho, to the Arizona Open Wheel Racing Museum in Phoenix and the once-amazing Tupelo (Mississippi) Automobile Museum with its 174 cars. We're all the poorer for it when these historical machines are taken off public display. Visit as many as you can, while you can.



The National WWII Museum, Louisiana.

Just be sure to call ahead to ensure the museum is open. Exhibits often change and museums sometimes close temporarily if the transition requires more than simply moving vehicles; others have adjusted their hours due to the pandemic. Also, prices noted are for adult admission; most museums have lower fees for younger enthusiasts and may offer family passes.

Be sure to tune in next month for part two of Planes, Trains and Automobiles — we still have literally half of America yet to explore!



The Petersen Automotive Museum, California.

Alabama

Barber Vintage Motorsports Museum, Birmingham

barbermuseum.org



You'll find plenty of vintage automobiles at the Barber Vintage Motorsports Museum — including the world's largest collection of Lotus racecars — but the multi-level museum's true attraction is its dedication to the international history of the motorcycle. Founded by racer George Barber and now run as a tax-exempt foundation, the museum has more than 1,600 motorcycles in its collection

that span more than 100 years. Some 200 different manufacturers from 20 countries are represented, with more than 900 motorcycles on display at any time. Restored to original condition, it's said 99% of them can be run within an hour's time. \$16.50.

• Also worth a visit: **The International Motorsports Hall of Fame, Talladega** (motorsportshalloffame.com): This six-building campus is home to more than 100 historic vehicles from various worlds of racing; it also includes the 14,000-volume McCaig-Wellborn Motorsports Research Library, said to be the most comprehensive collection of motorsports information on Earth. \$12.

•Where to stay: **Hoover Met Complex RV Park, Hoover** (hoovermetcomplex.com/rv-park/).

Alaska

Fountainhead Antique Auto Museum, Fairbanks

fountainheadmuseum.com



If all the Fountainhead Antique Auto Museum offered was its world-class collection of vintage automobiles, it would be well worth a visit — but the museum also includes exhibits of period fashions plus photos, accessories and videos heralding back to the golden age of

personal transportation, from Victorian times through the Art Deco era. Nearly 100 rare and historical vehicles are on display, including several that are said to be the only surviving models of their kind ever built. Part of the Wedgewood Resort. \$15.

• Also worth a visit: **Pioneer Air Museum, Fairbanks** (pioneerair.museum): Devoted to preserving the heritage of aviation in interior and arctic Alaska aviation. \$5.

•Where to stay: **River's Edge Resort, Fairbanks** (riversedge.net).

Arizona

Pima Air & Space Museum, Tucson

pimaair.org



Spanning 80 acres — including an amazing outdoor display of dozens of vintage and modern aircraft and six indoor hanger exhibits (three dedicated to WWII) that, together, encompass more than 250,000 square feet of space — the Pima Air & Space Museum is the largest air museum in America. Want to view a B-29 Superfortress, the heralded bomber of WWII, or the SR-

71 Blackbird, the world's fastest spy plane? More than 400 aircraft are on display, along with galleries centered upon aircraft carriers, women in flight, various bomb groups and dozens of others. There's also an aerospace gallery, with a capsule from the Apollo 13 movie, a moon rock and more. \$16.50.

• Also worth a visit: **Hall of Flame Museum of Firefighting, Phoenix** (hallofflame.org): The world's largest firefighting museum has more than 100 fully restored piece of fire apparatus on display, dating from 1725 to 2004. \$15.

Where to stay: **Tucson/Lazydays KOA Resort, Tucson** (koa.com/campgrounds/tucson-lazydays)

Arkansas

Arkansas Air & Military Museum, Fayetteville

arkansasairandmilitary.com



Housed in three hangars — one of which is a wooden hanger from the 1940s and listed on the Arkansas Register of Historic Places — the Arkansas Air & Military Museum's collection of about two dozen machines includes military aircraft from WWI, WWII and Vietnam. And, many of them still fly. Beyond the aircraft, the museum stages displays of support vehicles, engines,

uniforms and patches, artifacts and even weapons. \$10.

• Also worth a visit: **The Museum of Automobiles, Morrilton** (museumofautos.com): First started in 1964 by Wintrop Rockefeller, the original collection was later sold to Bill Harrah. A non-profit reopened the museum in 1976 and today it houses more than 50 vehicles dating from 1904 to 1967, along with an antique gun display, antique arcade exhibit, gas pumps, pedal cars and more. \$10.

Where to stay: **Hog Valley RV and Treehouse Resort, Fayetteville** (hogvalleyrv.com)

California

Petersen Automotive Museum, Los Angeles

petersen.org



Founded by Robert E. Petersen, who came up with the idea for *Hot Rod* magazine in 1948 and went on to create a publishing empire, "The Petersen" is considered the most important automotive museum in America. Specializing in automotive history, the recently renovated museum continually changes its exhibits — in early October, for example, the museum featured "Bond in Motion," the official collection of original

James Bond vehicles; Supercars: a century of spectacle and speed; Pole Position: the Juan Gonzalez Formula One Collection; and Reclaimed Rust: the James Hetfield Collection. Be sure to tour The Vault, as well — featuring 250 vehicles from around the world. \$17.

• Also worth a visit: **Nethercutt Museum, Sylmar** (nethercuttcollection.org): J.B. Nethercutt was a founder of Merle Norman Cosmetics and had a love of automobiles; more than 250 American and European autos from his collection, dating from 1898 to 1997, are on display — including the 1933 Duesenberg Model SJ Arlington Torpedo Sedan named "Most Elegant" at the 2021 Pebble Beach Concours d'Elegance. Free.

•Where to stay: **Hollywood RV Park, Van Nuys** (hollywoodrvpark.com).

Colorado

Forney Museum of Transportation, Denver

forneymuseum.org



Begun by J.D. Forney 60 years ago with a 1921 Kissel, the Forney Museum now encompasses more than 600 artifacts relating to transportation — and includes everything from a Union Pacific "Big Boy" steam locomotive to a 1988 Denver Cable Car, a Stutz fire engine, buggies, aircraft and even Amelia Ear-

hardt's 1923 Kissel "Gold Bug." Housed in a 70,000-square-foot facility, the museum also features an Indian motorcycle collection, 1923 Case steam tractor and, in a special gallery, transportation art and a 500-piece Matchbox collection. \$14.

• Also worth a visit: **The Cussler Museum, Arvada** (cusslermuseum.com): Anyone who's ever read a Clive Cussler novel knows the writer appreciates fine automobiles, and this museum started by Cussler features more than 100 significant automobiles of 1906-1965 vintage. \$10.

•Where to stay: **River's Edge Resort, Fairbanks** (riversedge.net)

Connecticut

New England Air Museum, Windsor Locks neam.org/home.php



Few museums can boast of surviving a tornado, but the New England Air Museum did in 1979. Now housed in six buildings (including three large exhibit hangars) and an outdoor display area, its more than 100 aircraft range from early flying machines to jets and include the last remaining four-engine American flying Sikorsky VS-44A (donated by actress Maureen O'Hara), a restored B-29 Superfortress and what are said to be the oldest surviving

Sikorsky- and Kaman-built aircraft — even an 1870 Silas Brooks balloon basket. The museum also boasts extensive collections of engines, instruments, aircraft parts, uniforms and personal memorabilia. Adjacent to Bradley International Airport. \$16.

• Also worth a visit: **Connecticut Trolley Museum, East Windsor** (ct-trolley.org): The oldest incorporated museum dedicated to electric railroading in the U.S., the museum features more than 70 pieces of equipment dating back to 1869. \$10.

Where to stay: **Wilderness Lake Campground, Willington** (wilderness-lakect.com)

Delaware

Air Mobility Command Museum, Dover

amcmuseum.org



Located on the Dover Air Force Base, the Air Mobility Command Museum focuses on an overlooked but critical aspect of U.S. Air Force history: humanitarian airlifts, cargo and air refueling. As such, many of its more than 30 aircraft (housed within one hanger and outdoors) are transport aircraft and include huge machines such as the C-130 Hercules, C-141A and C-141B

Starlifter and the KC-97L Stratofreighter. Military fighters include the F-101B Voodoo and B-17G Flying Fortress, among others. The museum also features video and panoramic tours, simulators and exhibits of airlifts during the Korean war and Vietnam. Free.

• Also worth a visit: **Marshall Steam Museum, Hockessin** (test.auburnheights.org): The museum features the world's largest operating collection of Stanley steam cars as well as gas- and electric-powered vintage automobiles and scaled-down reproductions of steam locomotives. \$8.

Where to stay: **Killens Pond State Park, Felton** (destateparks.com/Ponds-Rivers/KillensPond).

Florida

Tallahassee Automobile Museum, Tallahassee

tacm.com



Housed in a 100,000-square-foot building, the Tallahassee Automobile Museum houses more than 160 vehicles ranging from a 1900 Snell to a 2010 Chevrolet Camaro customized to look like a Pontiac Trans Am. And while the focus is on American musclecars, it also boasts three Batmobiles. There's an amazing array of oth-

er collections, as well, including one of the largest assemblages of Case knives in existence, outboard motors dating back to 1908, boats, adding machines and antique brass cash registers, pedal cars — even a fascinating collection of Steinway pianos. More than just a car museum, the Tallahassee Automobile Museum celebrates Americana. \$17.50.

• Also worth a visit: **Tampa Bay Automobile Museum, Pinellas Park** (tbauto.org): This 18,000-square-foot facility is home to 75 cars, mostly from the 1920s and '30s, that were specifically chosen for their innovation and engineering. \$12.

Where to stay: **Tallahassee RV Park, Tallahassee** (tallahasseeervpark.com)

Georgia

Museum of Aviation, Warner-Robbins

museumofaviation.org



Opened in 1984 with 20 aircraft displayed on a field, the Museum of Aviation has grown to be the second-largest museum in the U.S. Air Force. Located adjacent to Robins Air Force Base, it encompasses several hangars and outdoor displays, home to about 90 aircraft including the SR-71A Blackbird that set records for speed (2,193 mph)

and horizontal flight (86,069 feet), a P-40N Warhawk, F-4D Phantom II and many more. Popular exhibits include the 14th AF Flying Tigers, the Tuskegee Airmen and the 483rd Bomb Group. Plus, housed in the Century of Flight hanger is the Georgia Aviation Hall of Fame. Free.

• Also worth a visit: **Old Car City USA, White** (oldcarcityusa.com): This is a place only a gearhead could love — billed as “the world's largest known classic car junkyard,” it offers 4,000 vehicles in various states of disrepair spread across 34 acres. Bring a camera. \$30.

Where to stay: **Fair Harbor RV Park, Perry** (fairharborrvpark.com)

Idaho

Warhawk Air Museum, Nampa

warhawkairmuseum.org



When John and Sue Paul moved to Boise, Idaho, in 1986, they brought with them two WWII-era planes. As John began restoring a third plane in a local hanger, people gathered to watch — and began leaving boxes of memorabilia. The museum began in that hanger before moving to Nampa in 2000 due to its size. Among its permanent collection are warbirds from WWI through the cold war, including such iconic machines as a P-51C Mustang, P-40E Kittyhawk and F-104 Starfighter. There also are a pair of

restored MIGs, and displays also include a half-dozen “visiting” aircraft, along with memorabilia from WWI, WWII, Korea and Vietnam. \$14.

• Also worth a visit: **Bird Aviation Museum and Invention Center, Hayden** (<http://www.birdaviationmuseum.com>): Founded by Dr. Forrest Bird, an inventor and aviation enthusiast, the museum features a rotating number of about 20 aircraft and memorabilia exhibits. The museum stresses the historic achievements of aviators and innovators who helped create modern technology. Free.

Where to stay: **Center Point RV Park, Nampa** (centerpointrv.com).

Illinois

Volvo Auto Museum, Volvo

volocars.com



It's called the Volo Auto Museum, but it's more than cars, which comprise only about half of the 33 unique exhibits. There's also a display of vintage campers, music machines, vintage snowmobiles — even playable antique arcades. Who doesn't want to get a fortune from Zoltar (remember the movie Big?). As for the cars, there's a Duesenberg room, a Batmobile collection, TV and movie cars, special-interest cars, vintage cars and tractors, cars of the rich and famous...the galleries go on and on, including one for finned boats of the '50s to vintage bicycles and a half-do-

zen jets in the aviation exhibit. And be sure to tour Jurassic Gardens. \$19.95.

• Also worth a visit: **Historic Auto Attractions, Roscoe** (historicautoattractions.com/m/index.asp): “Eclectic” is the only way to describe this repository which brands itself as “the place where history meets entertainment” — such as the movie car the duo Bonnie and Clyde (played by Faye Dunaway and Warren Beatty) were killed in to the actual hats the gangsters wore the day they died. There's also a wealth of unusual memorabilia housed in exhibit rooms including Gangsterland, Movieland and TVLand. \$15.

Where to stay: **River's Edge Resort, Fairbanks** (riversedge.net)

Indiana

Auburn Cord Duesenberg Automobile Museum and The National Automotive and Truck Museum, Auburn
automobilemuseum.org and natmus.org



without touring the other. Housed inside the Auburn Automobile Co.'s historic 1929 Art Deco building, the Auburn Cord Duesenberg museum honors its namesake cars considered to be works of art — particularly those built during the 1930s — along with other noteworthy machines. More than 120 vehicles are on display, along with related and limited-time exhibits. \$12.50. The National Automotive and Truck Museum is likewise housed in an historic structure: the Service & New Parts building and L-29 building where E.L. Cord expanded his automotive empire. Included within the numerous galleries is a recreated Auburn dealership, a Hudson gal-

lery, pedal cars and the Gallery of the American Truck Driver — and among the amazing vehicles on display is the 1953 GM Futurliner #10, one of only 12 built. \$10.
 • Also worth a visit: **The RV/MH Hall of Fame and Museum, Elkhart** (rvmhhalloffame.org): Even non-RVers will enjoy this glimpse into the history of recreational vehicles, with exhibits including actress Mae West's 1931 Chevrolet Housecar, a 1937 Hunt Housecar, a 1915 Model T with 1916 "Telescope apartment and dozens more. \$12.

• Where to stay: **Elkhart Campground, Elkhart** (elkhartcampground.com)

These two world-class museums are located right next to each other in northeast Indiana, and we can't imagine touring one

Kentucky

National Corvette Museum, Bowling Green
corvettemuseum.org



Filled with classic Corvettes, racecars and prototypes, the 115,000-square-foot Corvette Museum showcases more than 80 Corvettes on permanent display from every era since its inception in 1953, as well as ongoing special exhibits. It also features interactive hands-on displays — including a KidZone geared to those age 8 and younger — a C6 Corvette simulator, a viewable maintenance and preservation area and even an exhibit titled "Corvette Cave-in" which tells the story of the sinkhole that opened beneath the museum in

2014 and swallowed eight Corvettes. You can also eat at the Corvette Grill and, if it's reopened for tours, check out the Corvette assembly plant just a quarter mile away. \$15.
 • Also worth a visit: **Swope Cars of Yesterday Museum, Elizabethtown** (swopemuseum.com): Owned and operated by the Swope Family of Dealerships begun by Bill and Betty Swope, this collection covers 60 years of history with displays of everything from a 1910 Brush to a 1970 Ford Cobra Torino SCJ. Nearly 60 restored vehicles are on display. Free.

Where to stay: **Bowling Green KOA Holiday, Bowling Green** (koa.com/campgrounds/bowling-green/)

Iowa

National Motorcycle Museum, Anamosa
nationalmcmuseum.org



Founded in 1989, the National Motorcycle Museum has grown from 40 vehicles on display to more than 450. Featured bikes range from a 1909 Royal Pioneer to a Harley-Davidson XR750 "cut-away" bike — considered the most dominant production racer ever built — and even Evel Knievel's X2 Rocket Bike. Many of the galleries also feature four-wheeled and winged machines, in-

cluding the STECO Aerohydroplane tucked in amongst pre-1915 motorcycles within the Early American Transportation Innovation exhibit. Other galleries include "Barn Find," with dusty, rusty and crusty motorcycles set among agricultural and automotive iron, and a 1920s-era gas station. \$15.
 • Also worth a visit: **The John Deere Tractor & Engine Museum, Waterloo** (deere.com/en/connect-with-john-deere/visit-john-deere-tractor-and-engine-museum/): Located at the site of its first factory, this museum and exhibits trace the company's evolution from horse-drawn to horsepower. Free.

• Where to stay: **Yogi Bear's Jellystone Park, Monticello** (jellystonemonticello.com)

Louisiana

The National WWII Museum, New Orleans
nationalww2museum.org



The National WWII Museum features immersive exhibits, multimedia experiences and an expansive collection of artifacts to take visitors inside the story of the war. The Road to Berlin, within the European theater galleries, recreates actual battle settings and villages with crumbling walls, bomb-torn rooftops and a realistic soundscape, retracing the grueling path to victory by way of New Guinea and Southeast Asia through the Pacific. The two realistic

exhibitions include 19 immersive galleries covering 19,000 square feet of space. The museum also includes the John E. Kushner Restoration Pavilion, the Louisiana Memorial Pavilion, the Hall of Democracy and more. \$29.50.
 • Also worth a visit: **DeQuincy Railroad Museum, DeQuincy** (dequincyrailroadmuseum.com): Featuring artifacts from the Kansas City Southern, Missouri Pacific and Union Pacific railroads in the original 1923 Kansas City Southern depot. Outside displays include a 1913 steam locomotive; inside, the passenger waiting rooms are filled with displays. Free.

• Where to stay: **French Quarter RV Resort, New Orleans** (fqrv.com)

Kansas

Mid-America Air Museum, Liberal
kansastravel.org/airmuseum.htm



Between its huge hanger and the tarmac behind it, the Mid-America Air Museum is home to more than 100 aircraft across 80,000 square feet of exhibits, from jet fighters to the smallest-ever aircraft to carry Air Force One designation, a twin-prop Aero Commander L-26 used by President Dwight D. Eisenhower. The dis-

plays cover more than 90 years of aviation of both fixed-wing aircraft and helicopters. The museum is located at the Liberal Mid-America Regional Airport, a former B-24 Liberator pilot training base during WWII. \$7.
 • Also worth a visit: **The Kansas City Automotive Museum, Olathe** (kansascityautomuseum.com): The museum rotates through more than 100 vehicles each year, with nearly 40 on display at any time. Each month also features a special gallery. \$9.

• Where to stay: **Western Star RV Ranch, Liberal** (travelks.com/listing/western-star-rv-ranch/1645/)

Maine

Owls Head Transportation Museum, Owls Head
owlshead.org



Said to be the largest operational fleet of its kind in New England, the machines in the Owls Head Transportation Museum aren't just static displays — these rare originals and historical replicas are maintained and demonstrated year-round. Grouped within various exhibits, the collection of more than 60 ground vehicles (automobiles), aircraft, motorcycles and bicycles include such rarities as an 1898 Leon Bolee Tri-car and 1938 Eliot Cricket

III (cars), a 1910 Clark Bi-wing Ornithopter (aircraft), 1922 Royal Enfield (motorcycle) and 1868 Velocipede Boneshaker bicycle. The museum also includes the Lang Education Center of 6,000 books, 3,000 magazines and 10,000 photographs and negatives. \$14.
 • Also worth a visit: **Seal Cove Auto Museum, Mount Desert Island** (sealcoveautomuseum.org): If your pleasure is early Brass-Era cars, this is one for you. The museum has more than 50 of these 1890-1919 era cars on display, along with nearly a dozen motorcycles and motorized bicycles from the same period. \$10.

• Where to stay: **Sennebec Lake Campground** (sennebeclake.com)

Maryland

B & O Railroad Museum, Baltimore

borail.org



Established at the original site where the Baltimore and Ohio Railroad began building America's first commercial railroad in 1829, the 40-acre B&O Railroad Museum's collection of locomotives and rolling stock is said to represent "the first, last, best or only of their kind in existence." They include the B&O No. 5300 "President Washington," No. 25 "William Mason" and No. 57 steam locomotives, and the B&O No. 51 and CNJ No. 1000 diesel locomotives. You can also take a short trip on the One Mile Express to the museum's restoration facility or ride the historic 1948 Royal Blue lounge car. The museum includes more than 6,000 historic rail-

roading artifacts as well as the Hays T. Watkins Research Library. \$20.

• Also worth a visit: **College Park Aviation Museum, College Park** (mncppc.org/1593/College-Park-Aviation-Museum): The "birthplace" of military aviation, College Park Airport was established in 1909 so Wilbur Wright could instruct the first military pilots. The museum, an official affiliate of the Smithsonian Institution, preserves local history with 10 aircraft relating to the area's early aviation as well as hosting traveling exhibits and displays. \$3.

Where to stay: **Ramblin' Pines Campground, Woodbine** (ramblinpinescampground.com)

Massachusetts

American Heritage Museum, Stow

americanheritagemuseum.org



Most museums focus on one segment of transportation. The American Heritage Museum, on the other hand, not only features nearly 30 automobiles — ranging from the Brass Era to the classics of the 1930s — but also boasts nearly two dozen aircraft, from a 1909 Curtiss Pusher to a Lockheed T-33 Shooting Star jet fighter from the Korean War. And, the facility also is the largest military tank museum in the U.S. In fact, it was the donation of the massive collection of tanks, armored vehicles and military artifacts from the family of Jacques M. Littlefield to the

Collings Foundation that laid the groundwork for the 65,000-square-foot museum. For an additional cost, you can ride in — or drive — one of several of them. \$20.

• Also worth a visit: **The Larz Anderson Auto Museum, Brookline** (larzanderson.org): Home to "America's oldest car collection" started by Larz Anderson more than 85 years ago, the museum is located in the original Anderson Carriage House and currently showcases 18 vintage autos from 1899-1959. Two special galleries run through April: Hidden Treasures (seldom seen vehicles) and Born of Necessity, an exhibit of pickup trucks. \$12.

Where to stay: **Minuteman Campground, Littleton** (campatminuteman.com)

Michigan

The Gilmore Car Museum, Hickory Corners

gilmorecarmuseum.org



The Gilmore Car Museum started in the early 1960s when Donald Gilmore began collecting vintage automobiles; when it opened in 1966, it had 35 cars on display. Today, the 90-acre complex features more than 400 vehicles across 190,000 square feet of exhibit space and also includes six onsite partner museums, a restored and fully functioning diner, a recreated 1930s Shell Station, an 1890s train depot and several recreated automotive dealerships. There are even

more than 100 vintage pedal cars on display and one of the largest collections of hood ornaments and automotive mascots ever assembled. Small wonder it's considered North America's largest auto museum. \$16.

• Also worth a visit: **Henry Ford Museum of American Innovation, Dearborn** (thehenryford.org): Of course, it has cars — Henry Ford created the automobile assembly line and put a car in every garage — but there's so much more to this museum, from race cars to freedom rides, modular houses to microprocessors. \$25.

Where to stay: **Mountain Glen Park, Kalamazoo** (kalamazoo.com/parks/markinglen/)

Minnesota

Veit Automotive Foundation Museum, Buffalo

veitauto.org



Located on a 500-acre campus, the Veit Automotive Foundation Museum arranges and displays its collection of more than 70 cars and 200-plus rare and unusual gas pumps in vintage-looking barns built to house the vehicles on display. The 4,000-square-foot Long Hay Barn Showroom, for example, shows the museum's Chevy 1955-, '56- and '57 "Tri-Five" collection and about 70 pumps and advertising memorabilia, while the 6,200-square-foot Round Barn Showroom — modeled after a round barn found on Route 66 — is home to a collection of restored 1933 Ford Model 40's, including the original prototype 1932 Ford Model Y used to develop the

Model 40's, plus vintage fuel pumps, pop coolers and an extensive oil can collection. The 21,000-square-foot Dairy Barn showroom houses a variety of cars plus the museum's pedal car and scooter collections.

• Also worth a visit: **The Shed Automotive Museum, Warroad** (theshedwarroad.com): The private collection of Bob Martin, The Shed is a 24,000-square-foot museum that houses about 100 restored cars — mostly musclecars of the '60s and '70s, from Yenko Camaros to Superbirds. It doesn't have set hours, so call first. Free.

Where to stay: **Minneapolis Northwest KOA Journey, Maple Grove** (koa.com/campgrounds/minneapolis-northwest/)

Mississippi

Mississippi Aviation Heritage Museum, Gulfport

msaviationmuseum.org



Opened in the fall of 2020, the Mississippi Aviation Heritage Museum traces the state's impact upon aviation, including local aviators such as Col. John C. Brown and Apollo and Space Shuttle astronauts. The museum features 33,000 square feet of exhibits in 22 galleries, including homages to the Tuskegee Airmen, Hurricane Hunters, Crop

Dusting and the Mississippi Aviation Hall of Fame. The museum also includes a number of hands-on displays and several flight simulators. \$14.

• Also worth a visit: **McComb Railroad Museum, McComb** (mccrrmuseum.com): Called "the best rail museum south of Chicago," the McComb museum includes several historic rail cars and a 200-ton steam locomotive, one of the largest ever built. The city, in fact, grew out of the railroad maintenance shops Col. Henry S. McComb established north of New Orleans, and the museum preserves its heritage. Free.

Where to stay: **Baywood Campground & RV Park** (southernrvparks.com)

Missouri

National Museum of Transportation, St. Louis

tnmot.org



Said to be "the largest collection of transportation vehicles in the world," the 42-acre National Museum of Transportation's rail and transit collections encompass more than 190 major exhibits. Train

exhibits include the Union Pacific #4006 "Big Boy" — the largest successful steam engine ever built — and the 6,600-hp, two-engine Union Pacific diesel #6944. The museum owns more than 150 streetcars, locomotives and rail cars. It's 60-strong transit collection includes buses, trucks, vintage automobiles and such rarities as

"Fire Bug," a car-sized firetruck created by legendary customizer George Barris, a 1923 Stanley Steamer, singer Bobby Darin's custom "Dream Car" and a 1963 Chrysler Turbine Car. Did we tell you

there's also a towboat, several U.S. Air Force aircraft and a few vintage wagons? \$15.

• Also worth a visit: **Route 66 Car Museum, Springfield** (66carmuseum.com): Guy Mace started collecting cars in 1990 when he bought a Jaguar. Now, his collection of more than 75 classic and vintage cars ranges from roadsters to station wagons and includes a 1933 Auburn 12 and 1927 Kissel Brougham — both former national first prize winners of the Antique Automobile Club of America. \$15. **RVE**

Where to stay: **DraftKings at Casino Queen RV Park** (draftkingsatcasinoqueen.com/stay/rv-park/)

ICE BREAKER

Winterizing your RV plumbing system correctly is essential to preventing some very costly damage

By Chris Dougherty

Winter. If you enjoy traveling, it sucks — at least, in the northern part of the country.

I'm probably not alone in that sentiment. There's no denying that traveling in an RV during winter where very cold weather (think snow) prevails — especially for New Englanders like myself — can be difficult. The popularity of "four-season" RVs has led more folks to take their RVs out in the snow, but for most of us, plummeting temperatures are Mother Nature's reminder that it's time to put the toys — and the toy haulers, including those without garages — away.

Whether you store the RV all winter or use it for snowbirding or skiing trips, it still needs to be protected from the elements — and understanding the limitations of its water system and pushing back against the freezing cold is essential.

The primary problem doesn't lie with the PEX, or crosslinked polybutylene, pipe that is used in all new RVs since the new millennium. PEX can withstand freeze damage and high pressure very well. The problem stems from the plumbing connections, water-fed appliances/hardware (faucets, valves, ice makers, shower heads, etc.) and holding tanks.

Many RVs utilize lighter-weight components, which are not as heavy-duty as their residential or commercial counterparts — and when they freeze, they are much more susceptible to fracture. These components include various plumbing unions, connectors, faucet parts, pump bodies and valves.

It's not the cold that damages these parts, though — it's the water left in them, which expands when it freezes.

The key, then, is to make certain that no water is left in any of the plumbing or appliances/accessories in the RV when it will be exposed to below freezing temperatures. This is especially important when the RV will be cold-soaked below



Master technician Bernie Roy winterizes an RV at Diamond RV Center (now Camping World) in West Hatfield, Massachusetts.

freezing for an extended period of time. For example, when traveling in winter and the heating system fails, there is only a brief amount of time to winterize the plumbing before it freezes.

Yes, RVs come with drains to empty the system. Unfortunately, there are a number of places where simply draining the water system using the low-point

drains will not be completely effective in evacuating enough water to prevent damage. Components like water heaters, the toilet and ice maker valves can hold excess water, as can some bends and low points in plumbing are just as susceptible.

At a minimum, the plumbing should be evacuated with compressed air, at



1a



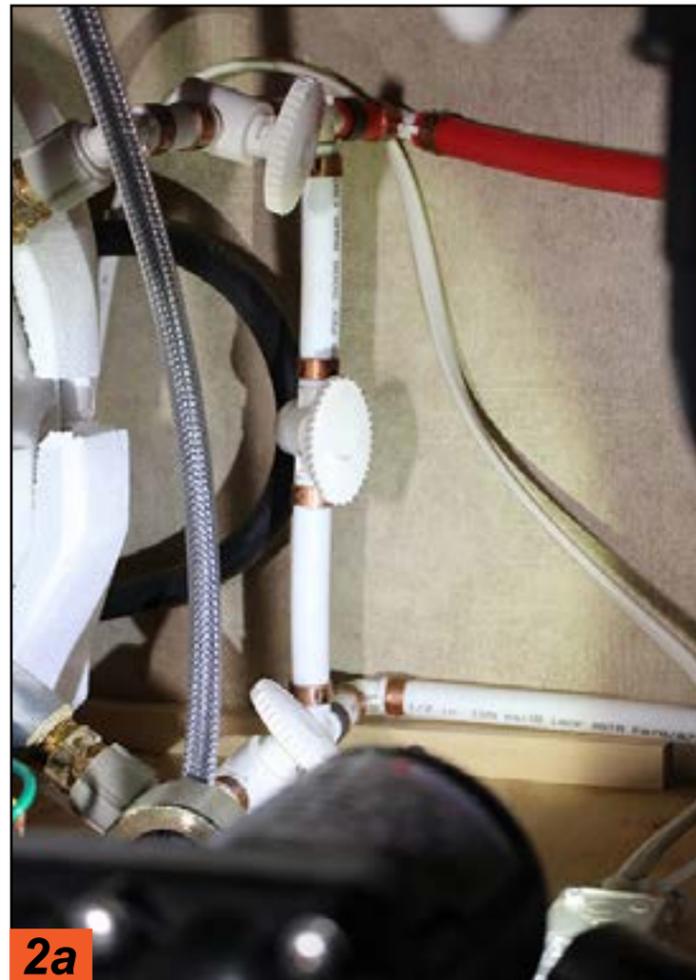
1b

Blowing out the plumbing system will require an adaptor for the city water inlet, a hose and air compressor. This adaptor allows direct, hands-free connection of a standard air fitting, freeing up the service person (owner) to move around and bleed down the system.

no more than 40 psi. Special adaptors are commercially available to connect a compressor hose to the city water inlet to blow air through the freshwater system. It is essential that every part of the system is cleared of as much water as possible, including the city inlet and low point drains. Drain the freshwater

tank and let the water pump run dry for a short duration. The pre-filter on the pump may hold some water, and should be cleared by opening the housing and dumping, or it can be blown out.

The preferred way to protect the water system is to add RV/Marine antifreeze after blowing out the system.



2a

Available in two concentrations — one for down to -50F, and another for -100F — the non-toxic antifreeze displaces the water in the system and prevents a hard freeze. Do not use automotive antifreeze, which is toxic and can lead to death. Most new RVs come with a winterizing valve

and hose connected to the freshwater pump; however, kits are readily available from Camco, among others.

Here are a few trouble spots to pay particular attention to:

- Clothes Washer — Your clothes washer has two water inlets: one for cold and one for hot water. It also features a pump for removing water from the washer tub and sending it down the drain. It's essential to make sure antifreeze passes through both the hot and cold valves, and then is processed through the ejection pump. Failure to do so would lead to damage to the hot- and cold-water lines into the machine, the internal valves and the pump. If the drain has a P-trap, it too would likely be damaged.

- Dishwasher — If you have a dishwasher, it's basically the same as the clothes washer, except it will be connected to only a hot water connection. As with the clothes washer, it must be run through a fill and pump out cycle to ensure antifreeze gets through the



2b

Water heater bypass kits come in a number of variations, with one, two or three valves on the back of the water heater or at a remote valve control panel. The idea, of course, is to isolate the water heater so you don't have to fill it with antifreeze. Demand heaters must not be cleared with compressed air. They should be allowed to gravity drain.

whole unit.

•Ice Maker — Whether a standalone model like those from U-Matic, or the more common built in refrigerator type, all ice makers in RVs need to be winterized. The most basic models will have one 120-Volt AC valve for filling

the ice trays. However, some refrigerators have ice and/or water in the door, which will have additional valves and possibly a cold-water chilling bladder. In this case, all will have to be carefully winterized. Refer to the manufacturer's instructions for instructions. In all cases,

the ice makers will have to be run with antifreeze in the plumbing system until antifreeze is in the ice trays and discharged from the door dispenser if equipped.

If you don't have a washer, dishwasher or ice maker, check to see if the RV

is plumbed for them; if so, those lines must be winterized as well.

Water heaters, too, must be drained and bypassed before winterizing. Tank-style units are drained using the drain plug and opening the relief valve to let air in. A small tube or hose can be inserted in the drain to siphon the last bit of water out of the tank (which will also help remove scale in the tank). If your water heater doesn't have a bypass kit, again, Camco and others have an

aftermarket version you can install.

There are a number of variations on the design of water heater bypass valves, including one-, two- and three-valve models. The three-valve version is most often confusing to folks. The oval handles on the valves indicate whether the valve is open or closed; the long length in line with the pipe means that valve is open, while if across or perpendicular to the pipe means it's shut. In bypass, the top and bottom valves are closed and the middle valve is left open, completing the loop or connection between the hot- and cold-water sides. In the spring, after flushing the system with fresh water, the bypass kit is reversed; top and bottom valves are opened and middle valve is closed.

On-demand water heaters, like the Truma AquaGo, should not be subjected to compressed air or antifreeze. Once bypassed, the drain flap is opened and the screen removed, allowing the system to drain naturally. That's all it needs. Leave the screen out until spring. Follow the directions for other models of demand water heaters. Likewise, hydronic heating systems use special antifreeze for heating and don't require attention. Simply winterize the plumbing system as directed and you're set.

And don't forget the drains. Plumbing P-traps hold water, and that water must be displaced with antifreeze. Flushing the toilet until you see the antifreeze through to protect the flush valve, even if you have a macerator toilet.

Once the plumbing system and drains are winterized, it's time to service the holding tanks. Rinse the black tank thoroughly so it's clean in the spring and lubricate the fullway dump valves if possible. Don't forget the freshwater tank; if antifreeze is added, it's a pain to get out. Once the tank is drained it's fine.

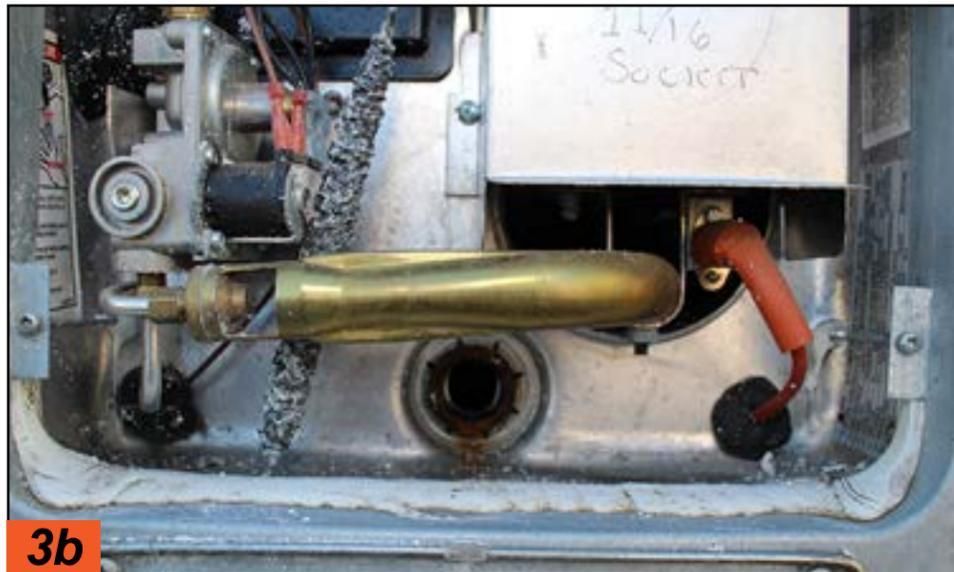
With a bit of work, your RV's entire system can easily be protected and ready for Old Man Winter's wrath. On smaller RVs and trailers, this process goes very quickly; larger trailers and motorhomes obviously require more time — but it's time well spent. It's no fun to make repairs in the spring when the travel bug bites again.

For more information on winterizing your RV, Camco has published an interesting and colorful guide:

<https://www.camco.net/medias/Winterization%20Booklet%202020.pdf>. The owner's manual for your RV may also have specific information on how to winterize your particular rig.



3a



3b

Removing the water heater's drain plug (or anode rod in the Suburban model) and opening the relief valve will allow the tank to drain quickly. A small tube can be used to siphon extra water from the bottom of the tank, as well as scale that might have accumulated during use. The anode rod here has been "consumed" to a point where it should be thrown away and replaced.

What About Batteries?

RVers who live in the North must also pay attention to their batteries — and for good reason. It's not unusual for owners to return in the spring to dead batteries because they failed to take care of them and prevent them from freezing.

Flooded lead acid, (FLA) batteries, should be disconnected and stored fully charged, preferably in a climate-controlled environment. As the battery discharges, (about 10-12% per month) the temperature at which the electrolyte can freeze increases from approximately -80F to 20F. If the battery isn't fully charged and disconnected, or left on a maintenance charger, it will discharge more quickly and possibly freeze, destroying any usefulness.

Can you leave the RV plugged in? If your RV has a multi-stage charger, yes. FLA, absorbed glass mat (AGM) and Gel batteries can be left on a smart float/trickle charger. Lithium iron

phosphate (LiFePO4) batteries must be heated; they will not charge when temperatures are below freezing. That said, unlike their lead counterparts, lithium batteries will not lose much charge while sitting. Once switched off from the system, lithium batteries are fine stay-

ing right in the RV until spring. (Solar is obviously largely useless for keeping the batteries charged once they're covered with snow and if you cover your RV, the effect is the same.) There are portable maintenance chargers, like those from Battery Tender, Redarc, NOCO and Pulse Tech, that can work if you can keep it plugged in.



Whether you can leave your house batteries on a charger for the winter depends upon their chemistry. FLA, AGM and Gel batteries can, Lithium iron phosphate cannot.



4

Once the system, including the low-point drains and appliances, has been blown out with compressed air, close all valves and faucets and siphon antifreeze into the system. The water pump will suck the antifreeze from the bottle, either by using a winterizing kit (built in or aftermarket) or you can make your own suction tube using 1/2" tubing and a PEX 1/2-inch threaded female fitting. Just unscrew the freshwater tank feed into the pump (with the tank drained, of course), insert the other end into the antifreeze container, turn on the pump and start opening faucets one at a time.



5

Open the hot and cold valves on each faucet until you see the antifreeze. It may be necessary to change containers after running out of antifreeze. When done, turn off the pump and return it to its original configuration, then go through and make sure all P-traps and the toilet have been treated with antifreeze.



Where some RVers get into trouble is when they forget or overlook certain parts of their unit's plumbing system. Don't forget dead-end plumbing (for washer option, etc.), low-point drains and outside showers.



Every RV has low point drains. The valves in motorhomes and four-season RVs may be inside the rig. Others, like this one, have caps or 1/4-turn valves under the rig. These pipes have water in them and will freeze unless winterized.



Don't put antifreeze in the freshwater tank; flushing out antifreeze come springtime will be difficult and waste a lot of water. However, once you empty the tank, leave the drain open. **RVE**

Go with the Flow

Lippert's Floe 636 Induratec allows winterizing on-the-go

By Chris Dougherty

Winterizing the plumbing in an RV involves blowing out the system with low-pressure compressed air, then — especially on larger RVs in very cold areas — drafting antifreeze into the system. That said, blowing out the system requires an adaptor fitting, air hose and compressor, which can be difficult for some people to carry in their RV — not to mention a pain to do.

Lippert's Floe 636 automatic winterizing system simplifies the process — a lot. First designed and distributed in Ireland for caravans, the system is basically a small air compressor system with a pressure switch and isolation valve that is permanently built into the RV's plumbing system.

The benefit to the system is obvious; open a valve, flip on the switch, then walk around and open each valve one at a time,



including low point drains. The pump turns on and pressurizes the plumbing, then shuts off until a valve is opened. This pushes all the water from the system.

If you're in a more moderate climate and only plan to blow out the system, you're done (except for P-traps and tanks). However, if you're in a much colder climate



The Floe 636 Induratec kit includes just about everything you need to install the system.

and/or you have powered valves for washer drains, ice makers and the like to protect, then you'll want to follow up with RV antifreeze. The water heater should be bypassed and drained externally before you blow out the system. If the water pump is fitted with the plumbing to route antifreeze and a Floe 636 is installed, you have everything on board for winterizing.

Installation is straightforward with a few changes in the procedure depending on the RV, so we won't go into all the details of installing it in our 2015 Montana. However, it's simple, and there are videos online that demonstrate how it's done (including this one by Lippert: support.lci1.com/videos/floe-integrated-water-drain-owners-video). It's entirely up to you how sophisticated you get with the installation, but the basics include a 12-volt DC connection and a plumbing fitting. Everything you need is included in

the kit.

We installed the unit in the Montana's passthrough rear wall near the back of the plumbing center. This gives us access to the switch and valve, but it is possible to mount the unit in a concealed location. Theoretically, you could have a dedicated switch and valve installed on the plumbing panel for a complete custom, out-of-sight installation.

The system, which retails for about \$200, works as advertised and is quite a convenience. It can be found at your favorite RV store or on Amazon (<https://amzn.to/2ZiQy1S>). Northerners who drive South to flee winter's cold weather will appreciate the ability to dewinterize on the road, and then when returning, continue to use plumbing normally until they get closer to winter weather. If you're into winter RVing, the ability to winterize on a moment's notice is comforting in the rare case that the furnace was to fail or, in the case of snowbirds, as they return to still-cold weather. For instance, when I was last in Florida returning to New England, I stopped at a



Locating where to install the system is the first step. The injector fitting should be installed in a cold-water feed pipe. In this case, the city water inlet on the Montana's utility panel was located and then opened up the space to access the plumbing.

Flying J in New England and winterized right there. No muss, no fuss.



For this installation, the Floe 636 was located on the wall of the passthrough, and carefully marked so holes could be drilled where the tubing and wiring would pass through. The switch on top of the unit operates the unit and there's good access to the valve. An optional remote switch on the power lead allows the unit to be installed in a hidden space, but it is still necessary to reach the valve, which prevents pressurized water from entering the Floe unit.



The pipe connector between the city water inlet and the fresh tank fill valve was removed to make way to cut the pipe precisely and put the pieces together so they would fit behind the panel.

Source:

Lippert
(432) 547-7378
lci1.com

continued from page 13

Top Trucks for Towing

In the market for a new tow vehicle for your travel trailer or fifth wheel? Respected automotive writer Scott Oldham took to the pages of *Car and Driver* magazine to look at the best trucks on the market for maximum towing capability — because, as he noted, “that’s what matters in the real world.”

“We’re in the age of the personal luxury pickup. Today’s trucks, big and small, are more luxurious, more comfortable, and feature more gizmos and

fancy technology than ever. But none of that really matters when there’s a job that needs gettin’ done,” he wrote.

To read *Car and Driver*’s list of the top 20 new pickups with the highest towing capacity as measured by maximum conventional towing ratings (gooseneck or fifth wheels ratings are mentioned when appropriate), [click here](#). Where did your favorite pickup rank?



2021 Nissan Titan XD



Solar-Powered Campervan Driven Across Europe

Solar Team Eindhoven — a group of 22 students from Eindhoven University of Technology in Eindhoven, Netherlands — have created what’s said to be “the world’s first solar-powered mobile home.” Designed and built between November 2020 to July of this year, the vehicle generates enough solar energy to live and drive on — and, in September and early October, the students demonstrated the viability of their technology by driving nearly 2,000 kilometers (1,242 miles) across Europe without ever stopping for fuel or a charge.

Called a “self-sustaining house on wheels,” the vehicle employs enough roof-mounted solar panels to generate enough energy to drive, shower, watch TV, charge laptops and make coffee.

Stella Vita employs unique design features, including a roof that slides up when stationary, making it possible to stand inside the unit. And, while designed to be as light as possible,

the solar cruiser is fully equipped with a double bed, sofa, kitchen area and bathroom with shower, toilet and sink and can accommodate two persons.

When the roof is raised, extra solar panels deploy to double the solar surface (from 8.8 square meters to 17.5

square meters). The panels charge a 60-kWh battery and the vehicle includes onboard technology to allow passengers to track energy consumption while stationary. It’s said that Stella Vita can travel up to 730 kilometers (453 miles) on a sunny day and has a top speed of 75 miles per hour.



2021 Wholesale RV Shipments Up 50% Through September

While retail registrations fell off a bit during the summer — Grand Rapids, Michigan-based data analytical firm Statistical Surveys reported year-over-year registrations were down 12% in June, 25.3% in July and 24.87% in August — June and July numbers still ranked as second-best ever for their time periods (August 2021 data is fifth-best ever for the month).

The falloff, however, may just be a case of RV dealers not having enough stock on hand. According to a recent report from the RV Industry Association, manufacturers continue to ship record numbers of RVs to meet demand.

Through September, OEMs have shipped more units to dealers than they did in every comparable month in 2020. In fact, through September, wholesale shipment numbers are up 50.8%, to 452,637 towable and motorized RVs. The September numbers — 55,014 — represent a historical high-water mark for monthly shipments. **RVE**

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MAKING MEMORIES

By Sue Strauss photos by author

Cruising Vermont

The Green Mountain state is known for its rich maple syrup, wonderful cheeses and eye-popping fall scenery — but it also offers travelers a plethora of little-known historical landmarks



Image credit: Hildene.org

Hildene, the summer home of Mary Harlan Lincoln and Todd Lincoln (Abraham Lincoln’s son), is visited by thousands of visitors each year.

Living in eastern New York for many years presented many opportunities for me to visit nearby Vermont, a state that boasts a wide variety of exciting travel destinations. Rather than focusing on just one city, a driving tour through Vermont will give visitors a much bigger picture of what this state has to offer. This driving tour through the Green Mountain state covers approximately 170 miles and would make a nice day trip for those staying in nearby RV parks — and provide memorable material for more extensive journeys into this popular region.

Manchester, Vermont

Our driving tour through Vermont begins in Manchester, near the southwest corner of the state about 60 miles northeast of Albany, New York. The city, which lies between the Green Mountains to the east and the Taconic Range to the west, with the Battenkill River flowing through the town, was chartered in 1761 and was primarily an agricultural or farming area for almost a hundred

years. Farmers struggled to grow crops in this area, and eventually found that the land was best suited as a grazing area for cows or sheep.

In 1856, Charles Orvis opened a high-end fly-fishing shop in Manchester, which was the beginning of The Orvis Shop. The American Museum of Fly Fishing was established in close proximity to The Orvis Shop, and is an interesting museum on angling history with more than 40,000 artifacts on display. This fly-fishing museum is housed in an 1800s era farmhouse, located on Main Street in Manchester, and is open Tuesday through Sunday, 10 a.m.-4 p.m. Admission is \$5 for adults.

Another historical site to visit in Manchester is Hildene, the estate of Robert Todd Lincoln (son of President Abraham Lincoln and his wife, Mary Todd Lincoln). Hildene was the summer home of Robert Todd and Mary Harlan Lincoln, and among its 412 acres encompasses the Lincoln’s Georgian revival mansion and 14 historic buildings. The estate is open to the public for self-guided tours, Thursday-Monday, 10 a.m.-4:30 p.m.

Admission is \$23 for adults.

If you are an outdoors enthusiast, consider stopping at the Equinox Preserve in Manchester. This 900-acre preserve is on the slope of Mount Equinox (the highest summit in the Taconic Mountains at 3,850 feet). Some of the best walking and hiking trails can be found here. Be sure, too, to check out Mt. Equinox Skyline Drive, the longest privately owned, paved toll road in the United States, ascending 3,248 feet to the top of Mount Equinox. The cost to



A typical scene in Vermont, this dairy farm in Manchester is more than a hundred years old.



Isaac Underhill opened the first marble quarry in 1785 near Mt. Aeolus. This is the oldest marble quarry in the U.S. Dorset quarries were most active in the early 1800s. This site is now a Vermont Historic Site.

drive up Skyline Drive is a bit steep at \$10 per car plus \$2 per passenger, but the spectacular views are well worth the cost. And be sure to fish the Battenkill River in Manchester, which offers some of the best trout fishing in the world.

Dorset, Vermont

From Manchester, continue your drive just 7 miles north to the little town of Dorset, a small town nestled in the hills which was also established in 1761. Dorset is known for being the home of America's oldest marble quarry. In 1785, Isaac Underhill and Reuben Bloomer harvested marble from the side of Mount Aeolus, located southeast of the city. At this time, the marble was produced for hearths and cemetery headstones.

With the advancement of mining techniques, miners could reach deeper into the mountain, harvesting thicker, more compact marble, which could be transported over longer distances. The arrival of the Bennington-Rutland Railroad in 1852 in Dorset allowed marble to be shipped across the U.S. By 1900, the marble mill was operating 24 hours per day, six days a week, and employed hundreds of laborers to quarry, transport, cut, polish and finish the marble. The town of East Dorset grew to include a hotel, schoolhouse, two churches, two general stores, a post office and a train depot. Additional businesses came to East Dorset, including a lumber mill, sawmill, blacksmith shops, a doctor's office and an attorney. The town was thriving for about 20 years until the introduction of cement in the 1920s.

Cement took the place of marble in building materials, and the marble quarries shut down and were abandoned. Within 10 years, all of the businesses in East Dorset closed down and the workers moved away. Today, these quarries have become a popular swimming spot in the town.

The Bill Wilson House is a historic 19th-century hotel located in East Dorset. Built in 1852, it is the birthplace and living memorial to Bill Wilson, co-founder of Alcoholics Anonymous. The building is listed on the National Register of Historic Places and is open to the public daily. The Griffith Library, located at the Bill Wilson House, houses artifacts and documents about Bill Wilson's life and the history of alcoholism and its effect on families over the years. This historic house draws thousands of visitors each year from around the world.

Dorset includes thousands of acres of public and conserved lands and is an excellent location for outdoor activities including hiking, fishing, swimming, horseback riding, mountain- and road bicycling and skiing.

Middlebury, Vermont

The next stop on the driving tour is Middlebury, approximately 58 miles north of Dorset. Middlebury was originally part of New Hampshire but was granted to Vermont by Colonial Governor Sir John Wentworth in November 1761. Because of the town's location between Salisbury and New Haven, the town was named Middlebury. The town was burned during the Revolutionary War in 1778 but was rebuilt five years

later. At this time, the major industries in Middlebury included grain and hay farms, a cotton factory, sawmill and gristmill, a woolen factory and a marble quarry.

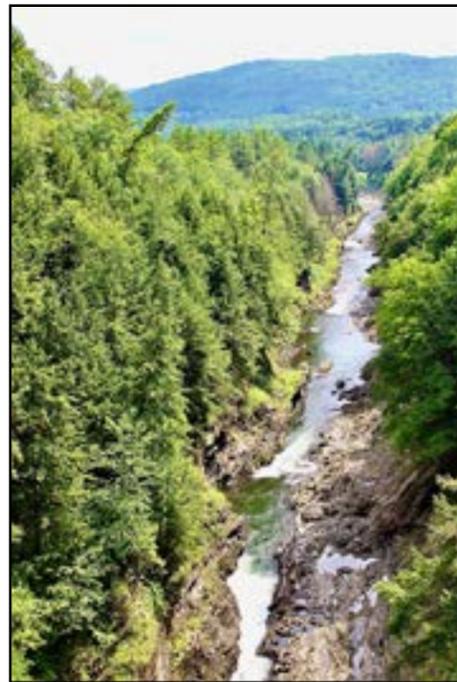
In 1800, an elite liberal arts institution was established and named Middlebury College. The town of Middlebury was also the birthplace of some famous people, including Emma Willard who was a founder of schools for women and an activist for women's rights. Poet and author Robert Frost also grew up in Middlebury.

Today, people visit Middlebury to shop in the downtown Marble Works District and to dine in its many restaurants. The Vermont Folklife Center is another popular attraction, located at 88 Main Street. This nationally known facility studies the cultural fabric of Vermont communities and provides exhibits that depict the legends and lore of the area. The center is currently open to the public Tuesday-Thursday, 11 a.m.-4 p.m.

Quechee, Vermont

From Middlebury, continue the drive east across the state to the town of Quechee, best known for Quechee Gorge, at 165 feet deep the deepest gorge in Vermont. Carved out by a glacier thousands of years ago, the gorge can be viewed from the U.S. Route 4 bridge and is a popular tourist attraction.

The Vermont Institute of Natural



Quechee Gorge is a 165-foot-deep gorge that was carved out by glaciers. The Ottauquechee River flows through this gorge and is a popular tourist attraction in Vermont.



Covered bridges, like this one near the town of Quechee, are iconic in Vermont. It is popularly believed that the purpose of the roof on these bridges was to keep snow off the road and to provide shelter for travelers during storms; however, the roofs were actually designed to protect the bridge itself.

Science (VINS), located in Quechee, was created to educate individuals and communities to care for the environment. VINS operates New England's premier avian wildlife rehabilitation clinic and also promotes environmental science field research. The Nature Center is open to the public 10 a.m. to 5 p.m. daily. Admission fees are \$17.50 for adults; \$16.50 for seniors. VINS is a great place to visit and you could easily spend several hours touring this facility.

Weston, Vermont

From Quechee, the driving tour will take you south about 45 miles to its last stop in Weston. This small town was incorporated in 1799 and was originally the western settlement, or "west town" of Andover — thus the name of Weston. This small town is best known as the home of Vermont's oldest professional theater. The Weston Playhouse Theatre Co. opened its doors in 1935 and expanded its offerings to include



Wildlife is, as you can imagine, plentiful in this heavily wooded state. This bald eagle and the pair of barred owls are residents of the Avian Wildlife Rehabilitation Center at the Vermont Institute of Natural Science.

cabaret shows and musicals. Lloyd Bridges began his acting career at this community theater, which continues to provide shows to the community.

The Vermont Country Store, a catalogue and retail business located in Weston, was opened by Vrest Orton in 1946 and became the first restored rural general store in Vermont. Orton was inspired by memories of his father's general store that once operated in North Calais. The Vermont Country Store continues to do business today — it's owned and operated by Lyman Orton and sons, fourth- and fifth-generation storekeepers — and is a purveyor of the practical and hard-to-find merchandise.

One lesser-known site is the Weston Priory, a community of Benedictine monks. This priory was established in 1953 and the Benedictines are best known for songs that they have contributed to Roman Catholic worship.

Because this driving tour covers almost 170 miles and many sites to see along the route, you might want to park your RV for a night or two along the way to give yourselves enough time to see all the sites you are interested in. There are several nice RV parks in the area:

- Dorset RV Park, Dorset (dorse-trvpark.com): This RV Park is open May through October and offers full hook-up sites with 50-amp electric at \$49 per night. Full hook-up sites with 30-amp electric are \$45 per night and sites with no hook-ups are \$28 per night. Pull-through sites are available; free Wi-Fi and cable TV are provided.

- Branbury State Park, Brandon (vtstateparks.com/branbury.html): The park offers RV sites with no hook-ups for \$20 per night. The sites are gravel and there are clean bathrooms and



The Vermont Country Store in Weston has been owned and managed by the Orton family for five generations. It is a popular stop for tour buses each weekend of the year.

showers. Branbury State Park is approximately 11 miles from the town of Middlebury.

- Camping on the Battenkill, Arlington (campingonthebattenkill.com): Approximately eight miles from Manchester, this park offers RV sites with full hook-ups for \$48 per night. Open April through October.

- Horseshoe Acres Campground, Andover (horseshoeacrescampground.com): The campground offers full hook-up sites with 50-amp electric for \$53 per night and full hook-up sites with 30-amp electric at \$47 per night. This campground is located about six miles to Weston.

Vermont is well-known for its beautiful fall foliage and is the largest producer of maple syrup in the United States. There is a lot to see in this small state, so it's best to spread this driving tour over several days. Give yourselves lots of time to explore the sites, take in the colorful scenery, and make memories of your own in the Green Mountain State.

RVE

Suzanne Strauss



Suzanne Strauss and her husband, Rich, have been full-time RVers for about four years.

They started out camping on weekends in a pup tent; eventually, they bought a small single-axle travel trailer to "test the waters" and fell in love with RVing. Now living full-time in a motorhome, they ply the roadways in search of interesting and "off the beaten path" places. She can be reached at: RStrauss22@gmail.com

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