DIY UPGRADES

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Ford Transit + Jayco Octane Super Lite

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Essential Tips for Generator Maintenance

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Niagara Falls straddles the U.S.-Canada border, where the Niagara River cascades into a deep gorge. Page 38

On the cover: The 2015 Ford Transit and Jayco Octane Super Lite make their way to California’s high desert. Photo by Scott Hirko.
RVing is a great way to kindle a passion for family activities like fishing. Relying on a Cummins Onan installed generator is another tradition worth passing on to the next generation. It makes all your adventures even more enjoyable, with comfort and convenience at the push of a button.

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Learn more about the benefits of a Cummins Onan installed generator at [http://powertotrailers.com](http://powertotrailers.com). And pass on what’s important.
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Progressive Insurance, Circle 142 on Reader Service Card
The Next Generation of Vans Is Buzzing the RV Community

Ford’s discontinuation of the venerable E-Series makes way for the Transit and new competition for the Sprinter

At one time, full-size vans were coveted among the best vehicles for towing travel trailers. A long wheelbase and short rear-axle-to-hitch-point contributed greatly to overall towing stability. The dynamics between the van and trailer kept lateral sway at bay, a towing trait that can be disconcerting. But for the most part, vans ended up being relegated to commercial service and hauling lots of people.

So when Ford mothballed the venerable full-size E-Series van, leaving only the Chevy in play, there was not much of a memorial service among trailer enthusiasts. The introduction of the Ford Transit, replacing the E-Series, was not one of the more lively debates around the fire in camp, but after spending time with two iterations latey, I believe these vans are destined to be significant players in the RV field.

Our first eye-opener came as we assembled this year’s Guide to Towing that was packaged with the February issue. Obviously, Ford spent considerable time determining tow ratings for the Transit because the length of the listings is humongous. Itty-bitty details drive small differences in tow ratings, but the intention is clear: Ford wants the Transit to be noticed.

The options are also plentiful. For example, there are three roof heights and a number of seating arrangements — or you can buy one without any seats and use the space for cargo. We ordered up a cargo van with the high roof to tow the Jayco Octane toy hauler featured on page 58.

The extra space in the Transit’s cargo hold was perfect for loading the motorcycles that could not be stashed in the Octane. It’s a win-win situation for those who like the agility of a compact toy hauler like the Octane but still need space to handle machines for the whole family. The Transit’s 7,100-pound rating made easy work out of towing the Octane.

We also checked out the feasibility of transporting 10 people in another version of the Transit, and I can report assuredly that the seating positions and comfort are among the best ever designed. Hook this baby up to a family-style lightweight trailer and you have a great traveling combo that’s easy to handle and fun to drive.

Ford’s Transit will likely steal some of the Sprinter’s thunder, and van fans will have lots to talk about as the competition heats up. 

— Bob Livingston, publisher

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INDEPENDENCE DAY
Many RVers use laptops these days, but did you know that Thomas Jefferson drafted the Declaration of Independence on his own "laptop"? It was a small desk that was held on one’s lap. Jefferson’s laptop is on display at the Smithsonian’s National Museum of American History in Washington, D.C.
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Keep on Truckin’
I was very interested in Chris Hemer’s May article, “Family Time,” pairing the 2015 F-150 with a Wildwood travel trailer. I have been researching that truck to replace my 2004 F-150. The tips on the Smart Trailer module and Blind Spot Information System were helpful, because those are options I will want. I am trying to decide if I need a three-quarter-ton truck or if I can stay with a half-ton. My current truck, fitted with a 5.4-liter Triton, struggles in the North Carolina mountains. My trailer, a Keystone Bullet, weighs 5,050 pounds dry, which is lighter than the 8,300-pound capacity of the truck. If you revisit the F-150, please include a climbing scenario.
Martin Meaders, Jefferson, Georgia

We own a 2011 Toyota Tundra with the towing package and tow a 2012 Wildwood 23RKS trailer that weighs 5,350 pounds unloaded. It was fun to compare my setup with the 2015 Ford F-150 mated to the Wildwood that Chris Hemer tested in the May issue. I liked his comment that Ford should include extendable side mirrors with towing packages, and I think Ford should also include larger fuel tanks. My Tundra has a 25-gallon fuel tank, and the Ford has a 23-gallon tank. The Tundra’s small V-8 easily pulls my Wildwood at posted highway speeds up and over the California Sierra. However, the mileage drops from 20 MPG to 10 MPG when towing. With these small fuel tanks, we have a range of about 200 miles.

Gone but Not Forgotten
My wife and I were saddened to receive news that the 50 years of manufacturing Peterson Excel fifth-wheels and other RVs has come to an end (“Peterson Industries Shuts Down,” June 2015). We are being told the recession is over and the economy is on the rebound. That was not true for Peterson Industries.

After owning two motorhomes, a year ago we went looking for an RV to live in full time. My son, who owns a fifth-wheel, suggested we choose the same. We found a beautiful, well-kept 39-foot Excel with three slideouts. We contacted Peterson regarding several needs, including manuals, and found them very cooperative and helpful. We will miss Peterson but expect to enjoy the next years in the comfort of their quality construction.
Barton and Beverly Buhtz, Castaic, California

I love reading your test reports and accompanying data. I am a mechanical engineer, and we engineers just love data. Keep campaigning for extended side mirrors and larger fuel tanks with OEM towing packages.
Martin Torres, Rio Del Mar, California

Big E-Go
Great to see Kevin Livingston’s article on the E-Go remote trailer mover in the May issue. I had seen the trailer mover in Europe and was so glad to see that we can now get them from Purple Line. I just installed the two-motor system on my Starcraft Comet trailer. I had all the right tools, and it was easy to install, including a second battery that powers the trailer mover. I replaced the A-frame jack wheel with dual pneumatic tires. The typical U.S. A-frame wheel does not track the same as the European style.
Bill Hendrix, Elk Grove, California

Them’s the Brakes
In his May Driver’s Seat column, Bob Livingston was absolutely right about the trailer brake situation. It needs to be addressed by the industry. Shortly after we stopped at MORryde in Elkhart and had a suspension system, pin box and disc brakes installed, a Ford pickup pulled out right in front of us with the bed of the truck full of little kids. My wife screamed, and I stomped on the brakes and missed the truck by maybe an inch. If I’d still had the drum brakes, I would have hit them broadside and probably injured or killed some kids. We stopped to recover our nerves, and I saw four streaks of rubber from the truck and four more from the trailer, which weighs in at about 13,000 pounds. Lesson learned. I will never pull another rig without disc brakes.
Thomas C. Hurd, Port Charlotte, Florida

Oregon Trails
Emily Fagan’s May article, “The Sunny Side of Oregon,” referred to the McKenzie Pass Highway, Route 242, in central Oregon, but I didn’t see any mention that there is a 35-foot overall length limit on that highway, which I have confirmed with the Oregon Department of Transportation.
Paul Wilcox, Troutdale, Oregon

Having grown up on the McKenzie River, I was amused to learn that “the McKenzie River flows on the west side of Bend.” While that is true, you could also say that the Pacific Ocean sits on the west side of Bend, but to be
LETTERS

accurate, they are both a fair distance to the west. Also the McKenzie Pass does not follow the shores of the McKenzie River. While the geography may have been a bit off, Emily Fagan’s article as a whole was well written and enjoyable.

Pat Farley, Truckee, California

Emily Fagan replies: The naming conventions in this region can be confusing. I was describing the McKenzie Pass–Santiam Pass Scenic Byway, which is the combination of two roads: Route 242, which goes over McKenzie Pass, and Route 126, which goes over Santiam Pass and follows the McKenzie River. If you own a longer trailer, you will definitely want to leave it at the campground before taking the scenic drive over McKenzie Pass.

Charmer in the Dells
In regard to Jack Ballard’s “Wisconsin Charmer” article in the May issue, if you’re going to Wisconsin Dells, check out Country Roads Motorhome and RV Park. It’s about a half mile off the interstate and close to everything to do in the Dells and Baraboo, with level campsites and lots of nice shade trees. Another benefit is that it is a playground for the older folks. No pool, no swings, no slides — just peace and quiet.

Gary Lewis, Brooklyn, Wisconsin

Riding the Rails
Terrific article on the Ozark Zephyr in America’s Outback in May. It looks like a really fun ride. You may want to add the Great Smoky Mountains Railroad out of Bryson City, North Carolina, to your itinerary. It’s a spectacularly scenic ride through the Nantahala River gorge.

Keith Engelmeier, Rockville, Maryland

Less Is More
My wife and I really enjoyed Kristopher Bunker’s April article “Little Big Trailers.” We are the proud owners of a T@B teardrop trailer, and we love it! We really enjoy Trailer Life, but we’re not interested in the big trailers anymore.

Jerry Paine, West Farmington, Ohio

We own a 16-foot Scamp that we tow with a six-cylinder 2012 Ford Escape and just love it! Don’t forget about us “little guys” out there. We feel we belong beside the huge fifth-wheels with slideouts.

Doug Allen, St. Charles, Missouri

Fan Club
I purchased a SAM-1 range hood fan from Fabulous Operating Products based on Bill and Jenn Gehr’s great article, “Overhead Overhaul,” in the April issue. The pictures were a valuable reference, along with the instruction manual that came with the fan. The fan works wonderfully — better than the noisy old one that was factory installed in our 2011 Jayco Jay Flight travel trailer. Thank you for the detailed article.

Athena Sabala, Gooding, Idaho

Take Your Meds
I read the “Prescription for Travel” letter in the April issue regarding a couple having great difficulty getting the wife’s
prescription for narcotic pain relievers filled while traveling. I have the same problem when we travel to Florida each winter in our fifth-wheel trailer. I solved it by working with my doctor and my neighborhood pharmacist.

My doctor writes the prescriptions in advance for each month I will be away. I hand-deliver these to my neighborhood pharmacist before I leave. Each of these prescriptions is written so it can be filled only on the specified date. When this date approaches, I call the pharmacy and give them the shipping address of the park I am staying at along with my campsite number and cell phone number. They, in turn, overnight the medication to me via FedEx with a signature required. When it arrives, someone in the park office signs for the package or they call me to sign for it.

I have never had a problem doing this. I do believe it is imperative that you work not only with your doctor but also with a neighborhood pharmacist you know well enough to help you.

_name withheld, River Falls, Wisconsin_

Happy Campers

Forest River, we would like to thank your Rockwood warranty department for its diligent and competent attention to detail on the repair of our travel trailer. We are very pleased with our trailer now, look forward to many years of service and will highly recommend the quality that Forest River Rockwood represents.

_Jack and Rana Anderson, Snyder, Texas_

We purchased a 2014 Outdoors RV Black Stone travel trailer from Cordelia RV in Fairfield, California. The first year we owned the trailer, it was at Cordelia RV for six months and the Outdoors RV factory for two months for warranty repairs. I felt that not being able to use our trailer for eight months out of 12 was excessive, and I wrote a letter saying so. Outdoors RV agreed to provide compensation for what I believe to be a fair amount. In today’s business atmosphere of ignoring the customer once the trailer is sold, Outdoors RV has shown a commitment to the customers who buy their trailers.

_Mahlon Pringle, Paradise, California_

Finally, somebody got it right! After many years and much advice, the battery-drain-while-driving problem has finally been solved.

After driving to Manteca, just south of Stockton, California, our brand-new trailer batteries were drained. We took the trailer to California RV at 477 E. Wetmore Street and talked to Tommy. He found the problem, fixed it and did not charge us “an arm and a leg.” The batteries held up just fine during our 10 days of dry camping.

I encourage anyone with an electrical problem or other RV repair need to visit Tommy at California RV — a small shop with a good man.

_David R. Boldt, Monmouth, Oregon_
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Summertime in Steamboat Springs

Although best known as a winter destination, Colorado’s Steamboat Springs offers unique and fun things to do all summer long.

From a gondola ride up Mount Werner overlooking the Yampa Valley with wildflowers in bloom, to hiking trails, bike paths, fly-fishing, historical tours, water activities, music on the green and the weekly farmer’s market, there is something for everyone in Steamboat Springs, Colorado.

Among the more than 150 hot springs in and around Steamboat Springs, Old Town Steamboat Hot Springs boasts a family-friendly facility with hot-springs-fed pools. A visit to Strawberry Park Hot Springs is in order for those looking for something a bit more rustic. If hot springs are not your thing, you can float down the Yampa River relaxing in a tube or hit the whitewater in a raft.

On the Fourth of July, the town’s festivities kick off with a pancake breakfast, followed by a parade through downtown and a dance party in the street. Steamboat Springs’ famous Pro Rodeo Series takes place at 6:30 p.m., and the celebration wraps up with a spectacular fireworks display.

The town’s award-winning Pro Rodeo Series takes place every Friday and Saturday night from June 19 through August 22. Rodeos in Steamboat Springs date back more than 100 years but were officially sanctioned by the Pro Rodeo Cowboy Association in 1988. The heart-thumping action includes bareback riding, steer wrestling, barrel racing, bull riding and lots more action.

Another summer highlight is the Hot Air Balloon Rodeo, July 11 and 12, when more than 30 balloons dot the skies above the Yampa Valley in all their colorful splendor. Pilots compete in various exciting maneuvers. At night, with a mountain backdrop, these balloons put on a “glowing” show.

In between, there is an art fair in the nearby park with more than 140 artists and vendors.

For hiking and bicycling, trails of varying length ribbon the surrounding countryside. If you just want to hoof it, take the Vista Nature Trail from the top of the gondola, or Devil’s Causeway, a more advanced hiking trail. For a more relaxed hike for the whole family, the ¼-mile Fish Creek Falls Trail takes you to the lower falls. Mountain bikes are welcome on Hot Springs Trail, while Hare Loop and Manzanares are great for dirt riding and ATVing.

Several campgrounds and RV parks accommodate RVs in the area. Some offer all the amenities, while others are a bit more rustic. A few of the full-service RV parks include Steamboat Springs KOA (970-879-0273, www.koa.com/campgrounds/steamboat-springs), Eagle Soaring RV Park (970-879-0164, www.eaglesoaringrvpark.com) and Stagecoach State Park Campground (970-736-8342, www.cpw.state.co.us/placetogo/parks/stagecoach).

www.steamboat-chamber.org
A Host of Truck Campers

Host RV of Bend, Oregon, has a reputation for building large and luxurious campers for longbed trucks. For those looking for a camper for a shortbed, Host fulfills that wish with “more than just the basics,” according to the manufacturer. The 9-foot triple-slide Aspen SB 9.5 has an 8-foot-wide main floor. Enter through the side door, and to the right is one slideout with a 72-inch dinette/sleeper sofa. Ahead is the kitchen slideout. To the left, the third slideout houses an 8-cubic-foot refrigerator and floor-to-ceiling pantry, leaving a big, open space in the center.

In the bedroom a wardrobe, nightstand, storage shelf and reading lights complement the 60 x 80-inch queen bed, which you can access from both sides. An optional swiveling 22-inch LCD TV is available for viewing from bed. The walk-through bathroom boasts a full-size shower and a swing door that separates the lavatory from the galley.

In the kitchen a three-burner stove and Granicoat solid-surface countertops accent the large area. Cabinets have raised-panel doors throughout.

The Aspen SB 9.5 holds 65 gallons of freshwater and has two 7-gallon propane cylinders, almost 32 cubic feet of basement storage, rain gutters and a winterization system. Prices start from the high $40,000s.

Host RV, 541-330-2328, www.hostcampers.com

Winnebago Giveaway

Winnebago Industries has partnered with Casey’s General Stores to give away monthly prizes of gas and camping gear, as well as two grand prizes of an RV road trip rental. Two winners will have the weeklong use of a Winnebago Brave motorhome, which features colorful exteriors and interiors combining modernism and retro styling.

Customers can enter the No Coast Vacation Road Trip by discovering clues placed at the more than 1,850 Casey’s General Store locations in 14 states across the Midwest.

“We are excited to participate with Casey’s with this promotion,” said Winnebago’s director of marketing, Chad Reece. “Casey’s is a premier quality brand, and the No Coast Vacation Road Trip is a great fit with the fun and adventure that is core to the essence of Winnebago and our products.”

“Casey’s is extremely proud to be able to partner with such an iconic company as Winnebago,” said Michael Richardson, vice president of marketing for Casey’s.

“The joint promotion not only gives us each a chance to showcase our goods and services, but it also draws attention to all the fun and exciting places that can be enjoyed right here in the Heart of America.”

So hit the road soon, as the promotion ends August 31, 2015. For information, visit www.winnebagoind.com or www.caseys.com.

Bannack Days in Montana

Celebrate pioneer life in a once-booming Montana gold-mining town, July 18 and 19. In its heyday after gold was discovered there in 1862, Bannack was buzzing with activity. Now, a ghost town listed on the National Register of Historic Places, Bannack celebrates its heritage every year with a fun-filled weekend. Pan for gold, watch a blacksmith at work, learn how wagon wheels are made, shoot a black-powder rifle, take a ride in a horse-drawn wagon, tour the mill, find out how to pack a mule, take old-time dance lessons and get involved in a great debate about “Should Women Vote?”

There’ll be music in the air with bluegrass, gospel and banjo players, as well as an old-time piano player. Since Bannack also had a reputation for lawlessness, there will be re-created shootouts on Main Street in front of Skinner’s Saloon and a stagecoach robbery planned for Sunday.


Bannack State Park has two dry campgrounds, Road Agent and Vigilante, with picnic tables and fire rings.


Thirty miles away, Dillon has a couple more RV parks:


RV Humor Illustrated
We all have amusing stories to tell about our RV camping adventures, but authors John Brunkowski and Michael Closen have written a 144-page book about theirs. Camper & RV Humor: The Illustrated Story of Camping Comedy covers camping history, road conditions, campground dilemmas and driving habits, and adds a humorous twist by describing how things can go wrong.

More than 200 color and black-and-white photos illustrate the hard-cover book, many from the authors’ personal collections of postcards from the various places they’ve gone RVing — Portugal, Australia, the Netherlands, Canada, England, France, Germany, Italy and other destinations.

Camper & RV Humor: The Illustrated Story of Camping Comedy is available for $17.99 through Amazon.
www.schifferbooks.com

A Taste of Colorado
A Taste of Colorado returns to Denver for its 32nd year on Labor Day weekend 2015. The festival highlights visual and performing arts, educational programs, culinary demonstrations and a KidZone with hands-on craft activities, carnival rides and games. Admission to the outdoor event is free, with offerings from 275 marketplace artisans and vendors, more than 50 food establishments and a variety of music from regional and national performers. Families can learn about Colorado’s pioneer past through interactive exhibits such as watching a blacksmith at work and Navajo weaving and rug-braiding demonstrations.

Celebrate the diverse Western and cultural heritage of the region, September 4 to 7, in downtown Denver’s Civic Center Park.
303-295-6330
www.atasteofcolorado.com

CrossRoads Acquires New Facility
CrossRoads RV, manufacturer of travel trailers, fifth-wheels and toy haulers, is expanding its facilities with 276,000 square feet of manufacturing space. The Topeka, Indiana-based company acquired an additional 44 acres of land that will provide the capacity needed to accommodate the company’s continued growth. “We are pleased to have the opportunity to grow our operations in Topeka,” CrossRoads President Andy Cripe said. “We view this investment as a critical step to meet our current production needs as well as our long-term strategic plans.”

CrossRoads RV is part of the Thor Industries family of companies, which, combined, represents one of the world’s largest manufacturers of recreational vehicles. The RVs are distributed through dealers in the United States, Canada, France, Japan and Australia.

Torklift Named Manufacturer of the Year
Torklift International, manufacturer of aftermarket parts for the RV and automotive industries, was named Manufacturer of the Year by Seattle Business Magazine. Torklift General Manager Jay Taylor accepted the award during an April 29 banquet at Seattle’s Museum of Flight. The Sumner, Washington-based company was recognized for upholding lean manufacturing practices and its dedication to producing lifetime-warranty products to niche markets.

Taylor said, “It’s our future, it’s our dreams, it’s our tomorrow, and our customers depend on us to put the very best products forward that we possibly can. Through this recognition tonight, I would say it’s safe to say we are accomplishing that task. On behalf of everyone in the Torklift family, I thank you all.”
Teaming Up for RV Rentals

International rental provider Apollo Motorhome Holidays is purchasing more than 500 Winnebago motorhomes to provide unique travel and vacation experiences for its customers within the United States. Winnebago Industries, a leading U.S. manufacturer of RVs that include motorhomes, travel trailers, fifth-wheels and transit buses, entered into the agreement with Apollo for 2014, and it was so successful that the relationship continues for 2015.

Winnebago Industries Chairman of the Board, CEO and President Randy Potts said, “Winnebago’s recognizable name, high construction quality standards and premium resale value all provide great value to Apollo for their U.S. rental business.... We believe the rental market provides a great opportunity for people looking to experience the RV lifestyle and create future RV owners. We are pleased that the program last year was a win-win for both Winnebago and Apollo and welcome the opportunity to provide the Winnebago motorhome experience to new entrants in the RV lifestyle through Apollo’s rental program.”

Apollo Motorhome Holidays is the largest privately owned leisure vehicle operator in the world and has a fleet of 4,000 RVs at 23 branches across Australia, New Zealand, Canada and the United States. U.S. rental locations include Los Angeles, San Francisco, Las Vegas and Denver. Equipment and options are available for rent, and the company offers suggested travel routes and places to camp. The motorhomes and campervans sleep from two to five adults, plus kids. Apollo Motorhome Holidays 800-370-1262, www.apollorv.com
Best-Selling Trailer Worldwide

Jayco’s line of Jay Flight travel trailers has spent 10 consecutive years as the top-selling RV worldwide. The Jay Flight line was launched in 2001, and the company claims that nearly 150,000 families have chosen Jay Flight travel trailers, including the SLX and Bungalow.

Said Jayco’s Amy Duthie, who has worked closely with the Jay Flight lineup as senior director of product development, “We have strived to remain true to the original goal of bringing the best in livability, features and value to the retail owner. Derald Bontrager, president and CEO, has always said 'We build campers one at a time for one family at a time.' This is what we have always done, and will continue to do every day. It is this principle, along with our great dealer partners, which has helped Jay Flight reach and remain at the top of the RV industry for 10 years.”

Updates for the Jay Flight’s 2016 model year, which will be out by the time you read this, include all-new exteriors, interior décor upgrades and the addition of new features including power awnings on SLX models, upgraded technology and a digital remote control for slide rooms, awnings and lighting.

In honor of this achievement, Jayco has launched a website commending the Jay Flight: www.jayco.com/about/jay-flight

In other Jayco news, the company announced its continued commitment to its EcoAdvantage program, started in 2011, which aims to build more eco-friendly RVs by reducing waste and conserving energy and water. Through the combined efforts of employees, suppliers, community partners and three Jayco operating divisions, the program has garnered impressive results:

- Saved enough electricity to power 10,932 homes for one year.
- Saved enough landfill space to accommodate a year’s worth of trash for 163,839 Americans.
- Conserved enough gas for 138.9 trips around the earth (in a car).

Additionally, Jayco’s green manufacturing practices have saved trees and water. Jayco claims that it strives to create products that are lighter and more aerodynamic to deliver better fuel economy.

Vent it!
- Prevents odors from invading living space
- Speeds up waste breakdown
- Eliminates the need for chemicals
- Works in any wind condition
- Easy installation and universal fit

Flush it!
- Cam lock ensures leak-proof connection
- Smooth hose interior doesn’t trap waste
- 18 ft. extended, 5 ft. compressed
- Stays extended during use
- Nozzle features clear port & shut-off valve

Support it!
- Adjusts to nearly any slope
- Prevents waste buildup
- Pivots hose around obstructions
- Extends up to 10 feet
- Stores in included bag, hose not included

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In The Hobbit and The Lord of the Rings film adaptations, New Zealand is Middle-Earth, site of fantasy and mystery, where creatures like hobbits, trolls, wizards and dragons roam. In reality, this island nation is renowned for adrenaline-fueled adventure. That’s why we decided to fly a dozen hours to New Zealand’s North Island and explore this mystical place in a rented RV. Our goal: to cram in as many adventures and sensory highs as possible.

New Zealanders are crazy for RVing. The country has plenty of RV rentals and places to camp, and the gently winding roads are loaded with fellow travelers. However, roads tend to be narrow, so RVs are often small motorhomes. And since driving on the left can be a challenge to right-driving visitors, smaller rigs can be a good thing.

Flights from North America are long, so it’s wise to recover before renting a rig. We land in Auckland, the country’s largest city, and recoup at Auckland’s Pullman hotel, a luxury property within walking distance of the...
city’s shops, restaurants and marina district. We rest and enjoy restorative massages at the hotel’s spa. Then we jump into action.

After a delicious waterfront lunch, including sweet, rare Bluff oysters at the Foodstore, we join America’s Cup Sailing for a thrilling 90-minute sail. If you’ve ever dreamed of jumping aboard a lightning-fast sailing yacht, this is your chance. We motor out of Viaduct Harbor and pair up around grinders — metal cranks to raise and lower the sails. On the captain’s order, we forward crank, then back crank, putting our muscles into it as the big sails catch the wind. Soon we’re heeled over 45 degrees, hanging on for dear life and shooting across the bay at 9-plus knots. When the captain offers me the helm, I eagerly grasp the big wheel and feel the power of the waves and wind, as I steer the 83-foot yacht through swirling waters.

The next morning, we meet Maori guide Trace on Mount Eden, or Maungawhau, a dormant 643-foot volcano and the highest natural point in Auckland. From its summit, we enjoy sweeping 360-degree views of the skyline and coastal waters, including 50-plus volcanic cones around the city. Polynesians who sailed here from Asia and islands in the Pacific, the Maori used Mount Eden as a fortified village. We amble down dirt and paved tracks, while Trace points out old homesteads and food-storage areas of these early settlers.

We meander through the city, stopping at Auckland Domain, a garden with two large glass conservatories housing plants from all over the world and the Fernery, a cool, shady garden with native vegetation, including tea trees, delicate bamboo orchids and five ferns native to New Zealand. It’s staggering to think the country was once covered in this dense jungle.

We end our city tour at the Auckland War Memorial Museum, a huge building featuring an impressive collection of Maori canoes, tools, weapons, musical instruments and artwork, including large communal meeting houses with intricate wood carvings. Trace explains the different exhibits and shows us a canoe prow carved by his great-great grandfather. We also enjoy a live 30-minute show of Maori dances, including the haka, a war dance with bulging-eye and tongue gestures to intimidate adversaries.

In the evening, we join Auckland Sea Kayaks for a paddle to Browns Island. Owner Nic Mead helps us into water-resistant jackets, life vests and watertight sea skirts. We shinny into the front of two slender crafts, and, with Nic and the other guide in the rear, head across Auckland Harbor.

It takes 50 minutes to reach Browns Island, one of several undeveloped islands around the city. While one guide readies dinner, we hike to a high spot to enjoy the sunset. When we return, steaks are ready, and we eat our meal watching the city lights wink on.

When we haul the kayaks back into the water, the sky is black. Nic fixes lights atop flexible poles, so we’re visible to passing boats. Moonlight dances on the flat, calm water, and, as we soundlessly paddle under brilliant stars, it feels as though we’re the only people on the planet.

AUCKLAND TO LAKE ROTORUA
The next morning, we pick up our RV from Kea Campers, one of the largest rental companies in New Zealand, Australia and Southern Africa. We

[Left] Sailing on Lake Taupo gives visitors a sense of the caldera’s size. [Top] Maori performers demonstrate a traditional game designed to increase hand-eye coordination.
leave the city behind and drive into a countryside filled with oak, pine and eucalyptus, and golden hillsides dotted with sheep, cows and farm fields. We’re surprised at how much the land resembles Northern California. Except for driving on the left side of the road (which takes some getting used to), North Island feels like home.

We churn south on Highway 27, a well-maintained two-laner with easy curves. We’re going to Rotorua, three hours southeast. We’re here in mid March, the end of summer in New Zealand, and the trees display the first yellow-golden blush of fall. We pass tiny farm villages, like Maramarua and Waharoa, but it’s mostly rural and isolated, and we’re grateful for the full tank of diesel. We’re also glad about the RV’s Navman GPS. It constantly chatters about road changes and directions, and clangs loudly when we exceed speed limits.

We pass through Matamata, aka Hobbiton, where many Lord of the Rings movies were filmed. The streets are jammed with buses for movie-set tours and tourists buying Hobbit merchandise. Not being Hobbit fans, we press on.

We turn onto Highway 5, the Thermal Explorer Highway, and gain elevation, the terrain becoming lush with tree-size ferns and green trees. As the road angles down, we get our first glimpse of town and Lake Rotorua.

A cute, walkable city of about 70,000, Rotorua is famous for geysers, hot springs, bubbling mud pots and its sulfur aroma. Both the town and sky-blue Lake Rotorua are located in the caldera of an ancient volcano.

Hungry and road weary, we pull into Third Place Café, a neighborhood spot with great lake views. They offer all-day breakfast, including Mumble Jumble, a plate with roasted sweet potato, caramelized onions, tomatoes, chorizo, bacon, egg and creamy hollandaise.

We drive a few miles out of town to Blue Lake Top 10 Holiday Park, a well-maintained 14-acre RV park overlooking sparkling Blue Lake. We’ve barely hooked up utilities when the bus from Te Puia Maori cultural center arrives to pick us up.

Maori culture has a huge influence in New Zealand, so we’re eager to learn more. Te Puia houses the New Zealand Arts Institute, which offers tuition-free classes in weaving, and wood and green stone (jade) carving to Maori youth who return to their villages and teach others. The center is in the 150-acre Whakarewarewa valley, a place with boiling mud pools and Pohutu, one of the world’s largest active geysers. We stand on a bridge overlooking steaming pools and frozen-in-time flows of white silica and brilliant orange algae. Suddenly, a smaller geyser steams and spurts, then the larger one joins in. They push up streams of boiling water and steam, slowly at first, and then, within moments, gush skyward 30, 50, 75, 100 feet, until twin fountains of water and roiling billows of steam arch against the blue sky.

Our tour also includes a dance performance and Maori feast (hangi) cooked over native tea tree wood in an underground steam box. After one of us is elected “chief,” young Maori men and women welcome him by touching foreheads and breathing one another’s breath. We’re ushered into a meeting house (wharenui) decorated with Maori weavings and wood carvings, and the troupe performs traditional...
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dances. They convince several men
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When the show ends, our stomachs
are rumbling. After a Maori welcome
and prayer, we enjoy New Zealand
mussels, chicken, lamb, corn on the
coq, an array of salads and desserts,
traditional rewena bread and dips, and
a local drink made from kawakawa
extract and manuka honey. Delicious!

LAKE Rotorua
to Rainbow Springs

We’re up early the next morning for a
half-day zipline adventure with Rotorua
Canopy Tours. Since I’ve been sketchy
about heights all my life, my adrenaline
is pumping. We strap on helmets and
cumbersome climbing harnesses, and
join a half-dozen others for a 10-minute
ride to an old-growth New Zealand
forest. Before humans arrived 1,000
years ago, North Island was covered
in dense conifer and broadleaf forests
of rimu, totara, kahikatea, mata and
massive kauri trees (similar to cedars).
After 150 years of logging and clearing
for development, less than 25 percent
of the country’s native forests remain.
This 1,200-acre forest is one of them.

Our first zipline platform isn’t
too high. I get in line quickly, so
I don’t have to think about stepping
into thin air. With one guide across
the ravine and another working the
rigging at the launch, I stand at the
edge, heart pounding in my ears, and
step off. Effortlessly, I’m sailing over
the forest and, before I know it, landing
gracefully (sort of). “Great job,” says
Joe, as he unhooks and reattaches
my safety cable.

It takes a couple of hours for us to
make our way through six ziplines, each
successively higher, longer and scarier.
On several, the launch platform slants
steeply, so I gingerly creep to the edge
before “sitting in space,” allowing the
rigging and gravity to whisk me away.
Between zips are canopy bridges,
narrow planks with wire “railings”
that shake like crazy as we cross.

On our way to one zipline, guide
Dan points out dozens of wooden
boxes and strange-looking contrap-
tions tucked into the brush. These traps
kill introduced pests like rats, stoats
and possums that eat the native bird
population. Forty percent have gone
extinct, and the staff at Rotorua Canopy
Tours are working to restore forest
birds. They donate money from every
tour and countless hours restoring
the forest.

We’re finally at our last zipline, a
breathtaking 115 feet above the forest
floor. By now, I’m pretty comfortable,
and I step confidently off the ledge. As
I streak by, Joe shouts, “Do something
cool,” and I flip upside down and mug
for the camera.

All that adrenaline has stimulated
our appetites, so we grab giant
sandwiches and puffy onion rings in
town at Fat Dog Café, a local favorite.
Then we drive to Rainbow Springs, a

To get behind the wheel of a rented
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country. Remember to drive on the left
and measure your speed in kilometers
per hour. Also be advised that New
Zealand does not allow left turns when
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unique 22-acre park showcasing New Zealand's native plants and animals. We wend through tree-lined paths, past streams and enclosures with native tuatara (large lizards) and big free-flight aviaries with colorful parakeets, wood pigeons, keas, kingfishers, banded rails, shell ducks and the world's only alpine parrots. For kids of all ages, the Big Splash log ride floats visitors back through time and ends with a stomach-dropping flume plunge that leaves my shirt damp and me grinning.

Rainbow Springs' most impressive attraction is Kiwi Encounter, a behind-the-scenes look at the park's efforts to hatch and release native kiwis. We meet Claire, the park's animal-husbandry manager in charge of kiwi conservation. She tells us that kiwis, like other native birds, are under attack from introduced pests, and, since they're flightless, they're especially vulnerable. Rainbow Springs spends $3,000 on each successful egg hatch, and they've released 1,200 brown kiwis back into the wild.

Claire gingerly lifts a 21-day-old chick from a darkened box (kiwis are nocturnal), cuddling him to her chest before weighing him. "He's a fat boy," she pronounces with a satisfied smile. "He's almost ready to go free."

RAINBOW SPRINGS TO LAKE TAUPO
It's an hour to our next destination, Lake Taupo, the country's largest lake — at nearly 240 square miles, roughly the size of Singapore. We head south on the Thermal Explorer Highway, climbing into hills fringed with beech trees, their leaves turning yellow as fall approaches. Along the way, we stop at Benny Bee, a small store and café selling local honey, including manuka honey renowned for its healing properties. Proponents claim manuka honey is effective for everything from cancer to diabetes and high cholesterol. It's labeled according to its Unique Manuka Factor, or UMF. The higher the UMF, the stronger the antibacterial properties — and the higher the price. I opt for one of the lower-priced jars.

We pull into Lake Taupo just in time to catch some road-wince. It's the look you get when you're hauling a trailer full of cargo, and a bump, pothole or sharp turn is unavoidable. All you can think about is how it's going to affect you, your vehicle and your load. But Ride-Rite™ Air Springs provide the added support your suspension needs for you to haul with comfort, confidence and control. And noticeably less road-wince.

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time for the Huka Falls jet boat tour. We scramble aboard the bright blue jet boat. Our driver fires up twin engines putting out 520 horsepower, makes a quick 360-degree spin and roars down the Waikato River. At 50 miles per hour, we fly past sheer rock cliffs with just inches to spare, sending local ducks and geese fleeing. Every few minutes, our driver careens maniacally close to shore and spins a doughnut, sending sprays of water over the bow and leaving us howling with laughter.

At the Aratiatia dam, we make a sharp U-turn and thunder upriver toward Huka Falls. As we approach the base of the falls, the boat’s jet engines, churning out 640 liters of water per second, strain against the river’s current. This is where the Waikato River, New Zealand’s longest, narrows from 300-plus feet across to less than 50 and drops nearly 20 feet, sending a torrent of 83,000-plus gallons of water per second over the falls. It’s exhilarating to feel its power.

We’re more than ready to snug our rig into a level gravel site at Taupo DeBretts Thermal Resort, a hot springs park and RV campground overlooking the lake. This is the perfect place to pause for a couple of days — up where breezes blow, with power and water, free Wi-Fi, clean showers, laundry facilities and a well-equipped communal kitchen and barbecue area. Best of all, campers get discounts to the park’s hot and cold mineral pools.

We lounge in the hot pools and plunge again and again down the super slide into cool mineral water. Ahhh!

In the evening, we walk up the hill and treat ourselves to dinner at Bistro Lago, an upscale restaurant at the Hilton Lake Taupo. As we dine on perfectly grilled scallops, über-fresh fish and local grass-fed beef so tender I cut it with my fork, we can’t decide if the food or the glorious lake views are more breathtaking.

The next morning, we’re back on the adrenaline trail with a half-day white-water raft trip with Tongariro River Rafting. The Tongariro River is renowned for trout fishing, but it’s also famous for 64 thrilling Class III rapids. Dressed head-to-toe in...
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neoprene, we join two women from Australia and our guide, Ryan, and board the six-person raft. I’ve rafted in large boats with lots of people paddling. Today, it’s just the four of us and our guide against a river known to dump rafters into its chilly depths.

Accessible only by raft, the Tongariro River cuts through native New Zealand beech forests and towering limestone and volcanic cliffs. This ribbon of water presents itself as deep pools and long runs of shallow, crystal-clear water; at other times it’s a maze of boulders the size of cars and boisterous rapids that have us clambering to stay in the raft.


I’ve got “hang on” down. Each time we climb a roller-coaster rapid, my foot jams under the seat in front of me and I tightly grip the wet rope to stay safely onboard. By the time we reach the calm waters at the takeout two-and-a-half hours later, we’re happy, tired and feeling like we’re sisters with our raft mates.

LAKE TAUPO TO HAWKE’S BAY

Back in Taupo, we take a break in the RV, and I hit the park’s hot mineral springs to work out the paddling kinks. And by early evening, we’re raring to go again, joining Sail Barbary for their Maori Rock Carvings Cruise.

Captain Sarah eases us out of the marina, but without a breath of wind, there’s no reason to hoist the sails. Instead, we motor along, and Sarah offers drinks and tells us about this massive lake. “We’re actually sailing on the second largest volcano in history,” she says. “The lake is in a collapsed caldera of a volcano that was so big it darkened skies in China.”

The super-volcano that created Lake Taupo is quiet but not dead. It erupts every 1,000 years or so. “If Lake Taupo’s volcano wakes up,” Sarah deadpans, “no one on North Island is going to have enough baked beans in their cupboards.”

The breezes are warm, as the sun slants over volcanic peaks surrounding the lake. This body of water is so large and deep, it has its own horizon and creates its own weather patterns. The lake’s average depth is 325 feet, and 610 feet at its deepest.

We round a thumb of land on the lake’s west side and come to massive Maori rock carvings staring out at us from a flat-faced cliff. The largest, more than 30 feet high, is of Ngatoro-i-rangi, the navigator who guided the Maori people to Taupo more than a thousand years ago. As we look closely, more carvings in the surrounding rocks emerge — a fish, a giant lizard, a reclining woman and more. Accessible only by boat, the carvings were created in the 1970s by master Maori carvers and have become an important cultural and tourist attraction.

I’m enchanted by Lake Taupo and love being on its deep blue water. So the next morning, we join Captain Simon and First Mate Millie from Chris Jolly Outdoors for a fishing excursion aboard the Waikare II, a 57-foot steel-hulled gunship built during the Vietnam War.

Today, it offers visitors catered trips to fish for huge brown and rainbow trout in Lake Taupo.

Trout aren’t native to New Zealand, but with the lake’s cold, clean water and abundant food sources, they’ve thrived, and many grow 4 to 5 pounds or larger. Simon and Millie rig up our gear, and soon we’re trolling. It’s not long before my friend reels one in. It’s a rainbow but doesn’t meet the nearly 16-inch (40 centimeter) minimum size, so we carefully let it go. Then I pull in a beauty — at least 4 pounds and well over the required length.

Within an hour, we’ve caught 11 fish, and we keep three big ones (the limit is three each). Captain Simon fillets our catch and thinly slices us some trout sashimi. It’s mild and tender with a clean fresh flavor, and served with a ginger-soy sauce. Millie delivers a gourmet lunch — bacon-wrapped chicken stuffed with cream cheese, salads, ciabatta rolls and tiny lemon tarts for dessert.

Back at the dock, we give Captain Simon one of our fish and head back to the RV with a huge amount of fresh trout we happily dine on for days.

Next we head to Hawke’s Bay, a two-and-a-half hour drive through golden hills ribbed with conifers. We’re more comfortable driving on the left and navigating roundabouts now, and we make good time. We arrive in Napier and check into our grassy, shady site at Kennedy Park Resort. Soon after, Gareth Kelly, owner of Odyssey New Zealand winery tours, picks us up in his
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black Hummer for a progressive dinner with wine tastings at several area wineries. It’s an enjoyable evening, and we return to our home on wheels and tumble, tired and contented, into bed.

HAWKE’S BAY TO WELLINGTON

The seaside town of Napier on Hawke’s Bay is known as Art Deco City. In 1931, a magnitude-7.8 earthquake reduced the city to rubble. It also raised 2,000 acres out of the sea, “gifting” the town much-needed flat, buildable land. They rebuilt in Art Deco style, and today the town celebrates with events like the Art Deco Festival that draws thousands.

We meet Tony and his 1949 Packard for a driving-and-walking tour of Napier’s Art Deco past and present. He tells us about the town’s history, teaches us about Art Deco and the architects who shaped the town, and shows us several impressive buildings, including the theater and the National Tobacco Company with its bronze doors and jade green tiles.

Hawke’s Bay is wine country, and we’re scheduled for a winery bicycle tour. However, rain and wind convince us otherwise, and instead, we stop at the Silky Oak Chocolate Shop and Museum, and load up on creamy sweets for us and friends back home.

Lunch is at Elephant Hill winery, an impressive modernist space surrounded by grapevines on a hill overlooking the sea. We enjoy a salad of buffalo mozzarella and heirloom tomatoes, a puff-pastry tart and coconut-poached John Dory, a local white fish.

In the afternoon, we pile into a Land Cruiser with Jo, a local artist and driver for Gannet Safaris Overland tours. We pass through a locked gate and then bounce along a dirt track to a green expanse of hills and sheer cliffs known as Cape Kidnappers. At 7,000 acres, the Cape Sanctuary is the country’s largest private wildlife restoration project, and Jo points out harrier hawks and shell ducks, along with native trees and bushes, including the famous manuka honey bush. But it’s the gannets we’ve come to see — large black and white seabirds with yellow heads, long bills and 6-foot wingspans — that dive for fish at 100 miles per hour.

We motor up a steep hill, and at the top, thousands of gannets mill about. Perched 600 feet above the ocean, this barren rock is the perfect gannet breeding ground. The birds are unperturbed by our presence, and we snap photos to capture this magical moment.

After a restful night at Kennedy Park, we head for Wellington, our last stop on our New Zealand adventure. It’s a four-and-a-half hour drive under a brilliant sky through lush green hills on a good two-lane road. Along the way we’re entertained by a series of distinctly Kiwi road signs like “Merge Like a Zip” and “Plan Your Corners.”

We catch our first glimpse of Wellington Harbor and the city. Nestled between forested hills and the water, the nation’s capital is a walkable cosmopolis of about 200,000. It’s not especially RV-friendly, so we leave the rig at the city’s only “RV park,” Wellington Waterfront Motorhome Park, a paved lot with portable toilets and showers next to the Bluebridge Cook Strait Ferry terminal.

We cab over to the i-Site visitor center, and eight of us cram into a 4x4 driven by Billy, an affable Kiwi with Seal Coast Safari. We drive up steep green hills on the edge of town and through a private gate into the Te Kopahou Reserve, climbing up and up with magnificent views of the sea. It begins to rain, Billy shifts into four-wheel drive, and we motor down onto a rocky beach. We bump and roll over big boulders and rocky sand, and ford beach streams. A half hour later, the rain has stopped, and we’re on an isolated beach with dozens of seals, some weighing more than 400 pounds. They lounge on the rocky shore and swim in the tumbling waves, as we eagerly take photos.

Back at the RV, rain and wind from a passing cyclone howl all night, but by morning the sky is blue. Wellington is a foodie town, and we meet Zest Food Tours for a walking-and-eating exploration of the city. Our first stop is Mojo, a local coffee roaster, where we sip the Kiwi favorite, a “flat white”
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espresso with steamed milk. Then it’s onto Gelissimo, where they use locally sourced ingredients to make gelato and sorbet in unusual flavors like ginger beer and blood orange. Next, it’s Wellington Chocolate Factory, where they make chocolate from cacao beans from all over the world, and Moore Wilson’s Fresh, an urban market that specializes in everything Kiwi, from grass-fed meats and locally made cheeses to pasta and produce. We end our delicious tour with tea and sweets at Floriditas Café, a local restaurant and bakery.

In the afternoon, we catch a shuttle to Zealandia, a bird and wildlife sanctuary in the hills above the city. A fully fenced urban eco-sanctuary, Zealandia creates a safe haven for some of New Zealand’s rarest native birds, reptiles and insects, and is just 10 minutes from central Wellington. Set in verdant Sanctuary Valley, with a lake and steep mountains covered in lush native bush, the 630-acre park features a paved, handicap-accessible walkway. We step off the path frequently to read educational signs and enjoy bird sounds around shady feeders, including the kaka (forest parrots), the endangered hihi (stitchbird), tieke (saddleback) and kakariki (parakeet). While it’s difficult to see birds through the thick brush, we enjoy the hike. On our way back to the information center, we’re treated to a rare sighting of two critically threatened takaha (birds about the size of turkeys), and they pose for photos.

The next morning is our last in New Zealand, and, after stopping at Mojo’s Coffee, we walk to Te Papa [treasure box], New Zealand’s national museum. We meet Tina, a Maori guide, for a tour of some of the museum’s 110,000 Maori items. Tina shows us a number of historic artifacts, explaining their cultural importance, and shows us the work of modern Maori artists, including some beautiful glass panels. There’s also an elaborate Maori meeting room with modern carvings, a fascinating example of traditional craft reinterpreted by today’s Maori.

We end our tour in the museum café with traditionally inspired Maori refreshments: kawakawa tea (bush herb) with manuka honey, rewena (potato bread) with fern-frond pesto, green-lipped mussel and seaweed salad, and sweet potato chips with horopito (native bush pepper) mayonnaise. Since Maori culture is such a big part of New Zealand, and we began this adventure with a Maori tour, this taste of Maori makes a perfect — and appetizing — end to our high-flying journey.

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Dometic offers two sizes of portable ice makers. The Large model makes up to 33 lbs. of ice every 24 hours, producing the first batch in less than 15 minutes. The Compact model produces 26 lbs. of ice per day, and its smaller size makes it ideal for RVs, boats or even cars vans and SUVs.

**MICROWAVES**

Quick, convenient microwave cooking is just a touch away with Dometic’s DCM series of microwave ovens designed for RV use. Models are available with regular cook mode only, or with grill and convection capabilities. All have numerous user-friendly features and 1,000 watts of cooking power, plus they come complete with trim frame and exhaust kits.

**WASHER/DRYER**

Dometic’s ventless Washer/Dryer features separate compartments for pre-treatment, detergent and fabric softener. Dometic’s Ventless Washer/Dryer Combo is designed for easy installation and uses 20% less water than competing brands. It offers an easy-to-read LCD display, programmable frequently used settings, and a generous 13 lb. capacity.

The system also includes cycle-timer display with complete alarm notification. An ergonomic door handle and easy drainage and service access are other benefits. The unit features three separate compartments for pre-treatment, detergent and fabric softener.

**AIR CONDITIONERS**

An air-conditioning/heating system is a must-have aboard an RV—reliable climate control makes life on the road more pleasant. Whether you are looking for an RV air conditioner or an RV heat pump, Dometic’s line of rooftop air conditioners and heat pumps and RV climate control systems can help keep your camper or motorhome comfortable all year round.

Dometic’s rooftop air conditioners and heat pumps keep your motorhome comfortable throughout the year. The Brisk II offers a 15% air flow increase and is 19% lighter than previous models. Fan motor sound-dampening brackets reduce noise and vibration. The aerodynamic Penguin II low profile model is less than 10" high. Both the Brisk II and Penguin II have been recently redesigned and offer numerous improvements over previous models. Available thermostat controls include the multi-zone Comfort Control Center II and single-zone Liquid Crystal Display.
Dometic has toilets for RVs of all sizes, including the industry’s number one gravity discharge 310 toilet with PowerFlush technology, full-sized vitreous ceramic bowl, residential-sized seat and easy foot-pedal operation. Removable components simplify winterization. The fully featured 320 offers an elongated, full-size enameled wood seat and deep ceramic bowl. Its pressurized full-rim flush delivers a bowl-clearing rinse every time. Just press the ergonomic foot pedal for easy, hands-free flushing. It’s available in white or bone colors, and standard or low-profile heights. The 300 ultra-light toilet features powerful triple-jet rinse action, innovative dropaway ball and valve system plus a full-size bowl.

D-Line™ eco-friendly Premium Holding Tank Treatment comes in drop-in or liquid form, with additives that break down effluent to help tanks rinse cleaner. They offer the most powerful, longest-lasting control of tank odors without formaldehyde, and are formulated for all-season use — they won’t break down in hot conditions. D-Line™ 3 ‘n 1 Bowl Cleaner and Tank Treatment combines air freshener, bowl cleaner and tank treatment. The enzyme-based formula naturally neutralizes odors, leaving a fresh lavender scent, and the effervescent cleaning action conveniently cleans the bowl when you drop in one of the rapid-dissolving packets. Non-toxic D-Line™ Clean ‘n Green features an advanced, non-toxic biological formula that neutralizes waste holding tank odors. D-Line™ Odor Eze Neutralizer offers powerful, formaldehyde-free odor control for gray water tanks. D-Line™ Toilet Bowl & Seal Cleaner cleans and deodorizes, leaving a fresh scent, plus it lubricates seals and valves.

D-Line™ RV Wash ‘N Wax Cleaner is a professional strength, multi-purpose wash formula that cleans and polishes your vehicle, removing grime, grease, bugs and more. Carnauba wax offers spot-free drying. D-Line™ RV Roof Cleaner and Sealer work together to provide all-weather protection, preventing drying, cracking and oxidation while repelling dirt and rain. The RV Roof Sealer leaves a silky, UV-resistant finish.

Camping World offers RV owners a tremendous value on Dometic products, with a Lowest Installed Price Guarantee. See pp. 80 and 81 for deals going on right now. Also, look for a full selection of Dometic products at Camping World SuperCenters. For more information about these and other Dometic products, visit CampingWorld.com/Dometic.
WHAT A RUSH!
WHET YOUR APPETITE FOR ADVENTURE AT NIAGARA FALLS, WHERE THERE'S MORE TO DO IN THIS FASCINATING BORDER-CROSSING REGION THAN BEING ENTHRALLED BY THE MIGHTY WATERFALLS

Honeymooners have traveled to Niagara Falls since before Napoleon ruled France. In fact, Napoleon’s younger brother, Jerome Bonaparte, visited the falls with his first bride, American Elizabeth Patterson, in the early 1800s. But the future king of Westphalia and his new wife couldn’t hold a candle to the effect Marilyn Monroe had on the popularity of Niagara Falls as a getaway for lovers.

In the 1953 movie Niagara, Monroe plays the steamy seductress Rose Loomis, vacationing at Niagara Falls with her gloomy, neurotic husband, George (Joseph Cotten). Rose plans to do away with George, by — you guessed it — sending him over the falls, so she can take up with another man. However, two honeymooners, Polly and Ray Cutler (played by Jean Peters and Casey Adams), intervene. It’s a soggy, predictable plot, but the audience gets doused with spectacular views of the falls. The film also whets viewers’ interest with scenes at Cave of the Winds, a series of wooden scaffolds beside Bridal Veil Falls, and aboard Maid of the Mist, the sightseeing boat that ferries tourists past American Falls and Bridal Veil to the base of Horseshoe Falls, the largest of the three falls that make up Niagara’s famous cascades.

THE FALLS
The falls straddle the U.S.–Canada border, 20 miles north of Buffalo, New York, where the Niagara River gushes into a deep gorge. Horseshoe Falls blocks the end of the cliff-framed ravine separating the U.S. and Canadian sides of the river. American Falls, the second
The American side of Niagara Falls, in New York’s Niagara Falls State Park, contrasts with the towering hotels on the Canadian side.

The largest, streams next to the 230-foot observation tower on the U.S. side. The smallest — and this is relative, as it’s still impressively large — is Bridal Veil Falls, adjacent to American Falls.

In addition to the waterfalls, the communities on both the New York and Ontario sides of the river are called Niagara Falls. The American side has Niagara Falls State Park, New York’s oldest state park. The Canadian side is more developed with large hotels and an urban, commercial feel. Remember to bring a passport or passport card for each person — although technically, only a birth certificate is required for minors under 16. If a minor is traveling with only one parent, a letter of consent from the other parent is highly recommended (www.ezbordercrossing.com).

Geologically, Niagara Falls is only about 11,000 years old. It formed as the continental ice sheets receded at the end of the last ice age. Originally located between Lewiston, New York, and Queenston, Ontario, the falls have eroded 6.8 miles to their present location. While the current rate of erosion, 1 foot per year, is a third of its historic rate, scientists estimate that the falls will erode the remaining 20 miles to the source of the Niagara River at Lake Erie and disappear in another 50,000 years.

An average of 60 tons of rock

A packed passenger ferry heads up the Niagara Gorge toward the famous falls.
particles flows over Niagara Falls every minute, giving the water a stunning aqua-green color. The volume of water crashing over the falls varies by the season and time of day. When Lake Erie is at its highest (in the spring) and hydroelectric power needs are curtailed, as much as 225,000 cubic feet of water per second flow over the massive cascades. During the summer, at the height of the tourist season, about 100,000 cubic feet of water goes over the falls per second, 90 percent of which tumbles over Horseshoe Falls.

WINE COUNTRY
After a visit to the falls, sampling some of the Niagara region’s many wines is a popular way to spend the afternoon. It’s one of the largest grape-growing areas in North America, with 30,000 acres of vineyards. Since the 1800s, the area has attracted grape-growers with its well-drained soil and proximity to Lake Erie and Lake Ontario, which create a moderating effect on the region’s climate. Today, you can drive along New York’s well-marked Niagara Wine Trail, which goes to 22 wine-tasting locations among acres of rolling farmland and friendly rural communities.

Some of the tasting rooms are at the vineyards where the grapes are grown. Others are at wineries that use local grapes to create their signature wines.

A TOAST TO NIAGARA

If you love wine but tire of the usual cabernets and chardonnays, you’ll love tasting the many varietals and hybrids in New York’s Niagara region. Twenty-two wineries line the Niagara Wine Trail [www.niagarawinetrail.org]. Here’s a taste:

Chateau Niagara Winery, Newfane: Behind its huge oak doors, you’ll find a number of less familiar wines including kagor, a dessert wine once made exclusively for Russian czars and now produced in the western hemisphere only by this winery. [www.chateauniagarawinery.com]

Long Cliff Vineyard and Winery, Sanborn: This tasting room was originally built as a hog barn but now pours Rieslings, pinot whites and Lemberger reds. [www.longcliffwinery.com]

Schulze Vineyards and Winery, Burt: Among German-born Martin Schulze’s many wines, look for the sweet, rare ice wine, produced from grapes picked during the coldest night of winter. [www.schulzewines.com]

Flight of Five Winery, Lockport: The only urban tasting room on the trail, Flight of Five is located beside the Erie Canal and named for the series of five canal locks below its front door. [www.flightoffivewinery.com]

Honeymoon Trail Winery, Lockport: With more than 30 wines to choose from, wine lovers can mix tasting and romance by the winery’s massive fireplace. [www.honeymoontrailwinery.com]

Johnson Estate Winery, Westfield: The oldest estate winery in New York has produced wine since Prohibition from grapes grown on its 120-acre vineyard. [www.johnsonwinery.com]

[From far left] Vintner Martin Schulze tends to his ripening grapes near Niagara Falls. Wine made from the crushed grapes fills bottles at Schulze’s Burt, New York, winery.
Don’t miss the call of the wild because of a clanky generator at the RV campsite. Try the remarkably quiet Honda EU3000is. Its lightweight, easy starting, fuel efficient power and legendary reliability make it the generator of choice for RVers and their camping neighbors. To hear even more, visit gen.honda.com.
The region is gaining a reputation for its pinot noirs, chardonnays, cabernets, Rieslings and Syrahs. You can also sample wines made from New York’s native concord and Niagara grapes. As a special treat, look for a tasting room that serves ice wine, a rare dessert wine made from grapes that are picked on the coldest night of the winter.

**ERIE CANAL**

Flight of Five Winery in a renovated city hall in Lockport, New York, is named for the series of five locks through the middle of the town. Lockport is an admirable example of how towns along the once heavily industrialized banks of the Erie Canal are transforming into attractive tourist destinations.

Local farmers and hundreds of British, German and Irish immigrant laborers built the 363-mile canal, which was completed in 1825 at a cost of $7 million. An important shipping route connecting Lake Erie to the Hudson River, the canal reduced the cost to ship a ton of goods from Buffalo to New York City to $10 per ton, $90 less than pre-canal days. However, when rail travel became commercially widespread in the late 1800s, the canal diminished in importance, eventually ceasing to be used for the transport of cargo.

Today, the canal is used mainly by recreational boaters. A cruise on the canal through the Lockport Locks is a relaxing way to spend the afternoon after a turbulent morning at Niagara Falls. The open-top boat ride starts with a peaceful poke down a forested portion of the canal, then through the five locks in the town of Lockport. Along the way, passengers get a sense of the history of the canal and what it was like in its heyday, as a great shipping lane.

1829 Sam Patch, known as the Yankee Leapster, was the first of many daredevils to challenge themselves at Niagara Falls. He jumped from a tower into the gorge below the falls and survived.

1859 Charles Blondin completed the first tightrope crossing by Niagara Falls, a 1,000-foot span across the river with a 60-foot sag in the 3-inch line. The feat took 17 minutes. He offered to carry a volunteer on his back, but no one volunteered.

1883 An Englishman, Captain Matthew Webb, who was the first man to swim the English Channel, drowned attempting to swim across the Niagara River below the falls.

1901 Annie Edson Taylor, a 63-year-old schoolteacher from Michigan, was the first to go over the falls in a barrel. She survived with only a few cuts.

1960 A seven-year-old boy was swept over the falls wearing only a life vest. Dubbed “the miracle at Niagara,” he was rescued by the *Maid of the Mist*.

1989 Peter DeBernardi and Jeff Petkovich were the first duo to plunge over the falls and live. DeBernardi designed a high-tech “barrel” made of steel and fiberglass with harnesses, windows and music. The stunt promoted the prevention of drug abuse by local kids.

1993 John Munday became the first person to go over the falls twice and survive.

2003 Kirk Jones was the first to survive going over the falls without a flotation device. Only two others have survived since then in unprotected plunges over the falls.

2012 Nik Wallenda was the first tightrope walker to cross directly over the falls. Wallenda took 30 minutes to traverse the 1,800-foot, 2-inch-diameter wire through mist and fog in front of television cameras and 129,000 spectators.
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*The same coupler (RVC3006) is used in all Companion models.*

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The **Patriot 16K™** is our rail mounted hitch. It's a less-expensive, lighter weight version of the Companion.

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The **Companion for Ford or Ram Pucks** are designed to work with the factory hitch platform.

**ALSO AVAILABLE:**

The **Companion for Ford Pucks** is designed to work with the Ford factory hitch platform.

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*The same coupler (RVC3006) is used in all Companion models.*

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FORT NIAGARA

For an even earlier step back in time, Old Fort Niagara in Youngstown, New York, near the mouth of the Niagara River, is a must-see. The French established the fort in 1679 to control the Great Lakes, both for the resources provided and because the lakes offered an early route into the interior of the continent. The British captured the fort during the French and Indian War, only to give it up to the Americans twice by treaty, the first time at the end of the American Revolution and the second time after the War of 1812. The United States continued to use Old Fort Niagara as a training facility until 1963.

[Above from left] Costumed interpreters dressed in French and English military uniforms educate visitors about life at Old Fort Niagara during the colonial era. Another interpreter displays vintage fishing tackle used at the fort in the 1700s.

The French Castle at Fort Niagara across the parade grounds guards Lake Ontario and the mouth of the Niagara River.

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CAMPING NEAR THE FALLS

The Niagara Falls area has no shortage of RV accommodations, including the following New York state park campground and eight Good Sam Parks on both sides of the U.S.–Canada border.

NEW YORK

AA Royal Motel and Campground, North Towanda
716-693-5695
www.royalmotelandcampground.com

Four Mile Creek State Park, Youngstown
716-745-3802
www.nysparks.com/parks

Niagara Falls Campground and Lodging, Niagara Falls
716-731-3434
www.niagarafallscampground.net

ONTARIO

Campark Resorts, Niagara Falls
877-226-7275
www.campark.com

Knights Hideaway Campground, Ridgeway
905-894-1911
www.knightsfamilycamping.com

Riverside Park Motel and Campground, Niagara Falls
905-382-2204
www.riversidetpark.net

Scott's Tent and Trailer Park, Niagara Falls
905-356-6988
www.scottstreilerpark.com

Yogi Bear's Jellystone Park Camp-Resort, Niagara Falls
800-263-2570
www.jellystoneniagara.ca

Vine Ridge Resort, Queenston
877-814-4141
www.vineridgeresort.com

Visitors can wander through the fort’s superbly maintained buildings and grounds, which still hum with colonial-era activity. Touring the sleeping quarters and commissary, you can imagine life at the fort during the early 1800s. Dressed in military uniforms from the various French and British periods of occupation, interpreters teach Old World ball games to modern-day kids. A blacksmith hammers iron hooks in the forge. Soldiers play cards with no numbers, because in those days some soldiers couldn’t read. Another soldier...
discusses personal maintenance during the 18th century, explaining how colonial soldiers suffered tooth decay because their charcoal toothpaste stripped the enamel from their teeth, and that they bathed only twice per year because the weather was too cold and the soap, made of lye, burned their skin.

A climb up the winding stone stairwell to the top of the French Castle, the main stronghold of the fortress, gives an unobstructed view across Lake Ontario through old lead-glass windows, more pink and blue than clear, and an appreciation for just how huge the lake is.

RV CAMPING
The easternmost and smallest among the five Great Lakes, Lake Ontario is an enormous freshwater sea, covering 7,340 square miles. It forms a natural 250-mile boundary between the United States and Canada, from Old Fort Niagara at the northwestern corner of New York state to Cape Vincent at the start of the Saint Lawrence River. Luckily, one of the best lakeside RV-camping spots on Lake Ontario, Four Mile Creek State Park, is in the Niagara area, a couple miles east of Old Fort Niagara and 15 minutes north of Niagara Falls.

Four Mile Creek State Park has hiking trails on the wooded bluffs above the shoreline and a broad lawn extending to the edge of the water, the perfect place to pitch a lawn chair, read a book and watch the sunset. Don’t be surprised if a whitetail deer wanders by your RV or a great blue heron lands on your picnic table. The campground is also close to Lewiston, yet another historic spot, made famous during the Civil War era as the departing point into Canada for slaves escaping via the Underground Railroad. Lewiston is also home to Artpark, a unique state park that hosts open-air concerts and theater productions.

Thinking of a trip to Niagara Falls? There’s more to the area than impressive waterfalls. While it remains a popular destination for honeymooners, it also appeals to history buffs, wine lovers, families and adventurous types who like to get intimate with powerful forces of nature.

FOR MORE INFORMATION
Niagara Falls Canada  
800-563-2557  
www.niagarafallstourism.com

Niagara Tourism USA  
877-325-5787, www.niagara-usa.com

WHAT A RUSH!

Relaxing at Four Mile Creek State Park after a fine day at the falls.

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His name was Clyde. In my 20 years of education, he was the only fellow student who offered me fresh macadamia nuts as a snack. I met Clyde, a native Hawaiian, while attending graduate school in Kentucky. To me, his childhood home seemed exotic and idyllic. How magical it must be to live year-round on an island that most people visit as a holiday destination. But Clyde’s attitude toward his homeland was different. When he spoke of Hawaii, it was in terms of family and friends rather than beaches and surfboards. It almost seemed as if he failed to appreciate his roots in relation to the world of leisure travel.

In reality, I can’t be too hard on Clyde. Three Forks, Montana, was the “urban” center of my childhood, which occurred more specifically on a ranch west of town. A bedroom community of sorts to Bozeman, and a back door to Yellowstone National Park, Three Forks is a fascinating playground of history and recreation, but seldom appreciated in its own right due to its proximity to attractions more centrally focused in the national spotlight. As a kid, I didn’t think much of my hometown and its surroundings. As a well-traveled adult, it now has more esteem in my mind.

When a pretty girl from New Hampshire accepted my marriage proposal a couple of years ago and moved west, it set the stage for a visit to the Three Forks area. Lisa was curious about my old stomping grounds. On a blushing day in August, we hit the road to my hometown in a peppy Winnebago Trend, an RV perfectly suited for our journey.

The Three Forks Fly-In is an annual event bringing vintage and unusual aircraft to Pogreba Field, the local airport. Nearing its 40th anniversary, the annual gathering occurs August 6 through 8 this year. Planes
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begin arriving on Thursday for the three-day reunion. Saturday is the highlight, with pilots vying for top honors in contests that include precision landing and "flour bombing," a crowd favorite in which two-person teams fly over a runway attempting to manually drop a sack of flour into a barrel below.

We hit the fly-in late Friday afternoon. Most of the flying was done for the day, but an array of intriguing aircraft was parked on the tarmac. Many pilots lounged by their craft or mingled with onlookers.

A sleek wooden airplane caught our eyes. It appeared very old, but unlike most of the planes that seemed engineered for just a couple of occupants, this plane had a row of windows and was larger than many on the field. It had reddish-orange wings jutting from the top of the glistening black fuselage that looked to be made of wood. The words “Travel Air” were embossed on its tail and just behind the engine in a flowing script.

As we circled the plane, admiring its unique lines and speculating about its origin, the pilot stepped forward to greet us and asked if we’d like a peek inside. Hank, who is from Kalispell, Montana, explained that the Travel Air 6000 was built in the late 1920s. Delta Air Service (now Delta Air Lines) bought three of the planes and began its first commercial air service between Dallas, Texas, and Jackson, Mississippi.

Inside, we marveled at the beautiful wicker seats for six passengers. Hank urged Lisa to sit in the pilot seat. He offered another tidbit of the plane’s history, noting that the Travel Air did not last long as a commercial passenger plane, ousted from the fledgling market by faster models not long into the 1930s.

Toward sunset, after viewing dozens of other interesting aircraft, we pointed the grille of the Trend toward the campground at Missouri Headwaters State Park. The park is located less than 5 miles from Three Forks on a route I know well. When I was in high school, the track coach sometimes...
herded our entire team onto a bus, drove us to the park, then dumped us with orders to run back to school. We found the campground toward the south end of the park, vastly improved from the days of my youth. A rentable tepee lent a historic air to the bivouac near the entrance. Not far beyond the tepee was an area for outdoor games. Moments later, we slid the Winnebago into our reserved site, prepared dinner, then took Percy, our English setter, for a stroll around the campground.

Missouri Headwaters State Park sits in a broad valley with towering mountain ranges visible in nearly any direction. Despite its setting, the park’s history is perhaps its primary attraction. One of the goals of the Lewis and Clark Expedition was to discover the source of the Missouri River. Within the 532-acre boundary of the park, the Madison, Gallatin and Jefferson rivers twine to form the Missouri. On July 25, 1805, the Corps of Discovery reached the ground upon which Missouri Headwaters State Park is located. They spent five nights at the headwaters, the captains wishing...
to scout ahead and rest the men
before pushing forward into what they
described as intimidating surround-
ings of vertiginous mountains and hot,
unshaded valleys.

The following day we left on foot
from our campsite, leashed animal
companion in tow. A walking path led
from the campground to Fort Rock,
an elevated mound of limestone
located between the Gallatin River and
the confluence of the Jefferson and
Madison rivers. It’s an easy 1-mile hike
from the campground to this unique
geological feature that received its
moniker from a comment Meriwether
Lewis made in his journal regarding its
potential as a fortified outpost. The level
path turned to a quick scramble, as we
made our way to the top of the rock.
“Wow.”

My sweetheart’s words caught me by surprise. I glanced sideways to view an intense sense of wonderment on Lisa’s face. Overwhelmed by a view I’d seen many times (one of my summer jobs off the ranch was as a part-time caretaker at the park), she prompted me to breathe deeply and take a fresh look at the scene. To our right, the Gallatin River snaked through the valley, its glistening watercourse flanked by towering green sentinels, massive cottonwood trees whose leafy canopies sway in the summer breeze. Before us, the Gallatin joined the other two melded forks of the Missouri. So taken with the significance of the location, Lewis and Clark recorded with painstaking care their survey of the country and sketched a map for reference.

Our return route to the campground included a side trip to an interpretive site at the confluence of the Jefferson and Madison rivers, the spot commonly accepted as the headwaters of the Missouri. One sign recounted the story of Sacagawea, an American Indian woman who served as a guide and interpreter for the expedition after joining Lewis and Clark with her husband in the Dakota Territory. Sacagawea was kidnapped into slavery at this site much earlier by a raiding band of Hidatsa Indians. Her knowledge of the surrounding country and reunion with her familial tribe, the Lemhi Shoshone, was
Meriwether Lewis and William Clark wrote extensively in their journals while camped at the headwaters of the Missouri. Here are some of the things they had to say:

“Both Capt. C. and myself corrisponded in opinion with rispect to the impropriety of calling either of these streams the Missouri and accordingly agreed to name them after the President of the United States and the Secretaries of the Treasury and state... In pursuance of this resolution we called the S.W. fork, that which we meant to ascend, Jefferson’s River in honor of [that illustrious personage] Thomas Jefferson. The Middle fork we called Madison’s River in honor of James Madison, and the S.E. Fork we called Gallitin’s River in honor of Albert Gallitin.”
— Meriwether Lewis, on naming the three forks of the Missouri River

“Between the middle and S.E. forks near their junctions with the S.W. fork there is a handsom site for a fortification it consists of a limestone rock of an oblong form; its sides perpendicular and about 25 ft high except at the extremity towards the middle fork where it ascends gradually and like the top is covered with a fine terf of greenswoard.”
— Meriwether Lewis, describing Fort Rock

“The beds of all these streams are formed of smooth pebble and gravel, and their waters perfectly transparent; in short they are three noble streams.”
— Meriwether Lewis

“Our present Camp is the prosise Spot the Snake Indians were Camped at the time the Minetarries came in Sight, attacked & killed 4 men 4 women & a number of boys, & made prisoners of all the females & 4 boys.”
— William Clark, describing the capture of Sacagawea

M8008 ST Radial
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205/75R15 - 6PR
205/75R15 - 8PR
225/75R15 - 8PR
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235/80R16 - 10PR

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LEWIS AND CLARK SLEPT HERE

Meriwether Lewis and William Clark wrote extensively in their journals while camped at the headwaters of the Missouri. Here are some of the things they had to say:

“Between the middle and S.E. forks near their junctions with the S.W. fork there is a handsom site for a fortification it consists of a limestone rock of an oblong form; its sides perpendicular and about 25 ft high except at the extremity towards the middle fork where it ascends gradually and like the top is covered with a fine terf of greenswoard.”
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“Our present Camp is the prosise Spot the Snake Indians were Camped at the time the Minetarries came in Sight, attacked & killed 4 men 4 women & a number of boys, & made prisoners of all the females & 4 boys.”
— William Clark, describing the capture of Sacagawea
The highlight of this state park is a guided tour of the caverns. As we hiked from the visitor center to the entrance of the cave, I wondered aloud how much of the tour I would remember from my days as a tour guide some 35 years earlier. We passed through the underground labyrinth of naturally sculpted limestone at the back of the group, Lisa savoring the geology lessons imparted by the guide and peering at the colorful array of formations.

My memory piqued by the surroundings, much of what I’d forgotten about the cavern returned in a veritable flood. Our guide made jokes about many unusual formations including a stalagmite in the shape of a frog. I smiled with zipped lips, remembering the punch line to each witticism, reliving a snippet of my early adulthood with a renewed appreciation for the natural wonder that supplied me employment and savings for college.

Exiting the cave, we blinked owlishly in the late-afternoon sunshine. Halfway down the walking trail to the visitor center, we stopped to admire the view. The Jefferson River wove through the vale below in a silver ribbon. Hollowtop Mountain, the highest summit in the Tobacco Root range, thrust its pate above the lowlands, replete with a crescent snowbank just below its open, rocky top.

“Nice place to grow up,” murmured Lisa, as she looked around.

It was. Decades later, the Three Forks area holds even greater charm for me as an adult than it did as a kid.
WHERE TO EAT
Land of Magic Steakhouse
Located on the I-90 frontage road in a little spit of a town (Logan), just five minutes east of Missouri Headwaters State Park, this restaurant is a local favorite for all things beef.

Sacajawea Hotel
"The Sac,” as it’s known locally, is a picturesque, historic hotel in Three Forks. Pompey’s Grill, located in the hotel, is named in honor of Sacagawea’s son. It offers excellent dining in a classic setting.

Wheat Montana Bakery and Deli
We never drive through the area without stopping for coffee and a pastry at Wheat Montana, where locally grown grains are milled into flour and baked into scrumptious cinnamon rolls, breads and other goodies. Located at the intersection of I-90 and U.S. Highway 287, just a few miles west of Three Forks.

WHERE TO CAMP
Bear Canyon Campground
Thirty miles away in Bozeman, Bear Canyon is open May 1 through October 1 and has full RV hookups, an outdoor heated pool, free Wi-Fi, scenic mountain views and easy access to outdoor activities.
800-438-1575, www.bearcanyoncampground.com

Camp Three Forks
Open May 21 to September 15, Camp Three Forks offers full RV hookups, laundry facilities, a playground, a gift shop and high-speed Internet.

Lewis and Clark Caverns State Park
Located 17 miles west of Three Forks, the year-round park has 25 campsites, including some with electric hookups, for RVs of varying lengths. Tours of the caverns are available daily, May through September.

Missouri Headwaters State Park
Open year-round, the park has historical exhibits, hiking trails and 16 primitive campsites for RVs of varying lengths. Lewis and Clark camped here in 1805, and you can too.

FOR MORE INFORMATION
Three Forks Chamber of Commerce
Information on local events and attractions including golfing, fishing, canoeing and historic sites.

Three Forks Fly-In
August 6 through 8, 2015. Contact Three Forks Chamber of Commerce or email kenflilkema@gmail.com.

Introducing the Escape 5.0TA
A lightweight and aerodynamic tandem axle fifth-wheel trailer.
With a dry weight of only 3800lbs, the 5.0TA is a perfect fit for mid-sized trucks. With a molded fiberglass unibody design and maximized floorplan, travelling in the Escape 5.0TA successfully brings together comfort and efficiency. High quality interior finishes combined with an extensive list of custom options give you the opportunity to design a trailer that is specifically tailored to your needs and style of camping.

<table>
<thead>
<tr>
<th>Overall Length</th>
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<tr>
<td>Usable Floor Space</td>
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<tr>
<td>Kitchen Counter</td>
<td>34’</td>
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</table>

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July 2015 TRAILERLIFE 57
Gimme Shelter

With plenty of cargo space for gear and bikes, the 2015 Ford Transit and Jayco Octane Super Lite are a made-for-each-other couple.
Sometimes the problem with the great outdoors is there’s just a bit too much of it. For example, sunny at home but then cloudy and cold en route, dust storms followed by thunderstorms, a deceptive lull and then winds kicking up at midnight and howling like a wolf through dawn’s early light. Such was the case at Willow Springs International Raceway in the Southern California desert last spring for the annual Corsa Moto Classica riding school, vintage motorcycle races, bike show and swap meet. The event is but once a year, and the track generously opens its large pit area for RVs at no additional cost. With so much to see and do, not going due to blustery weather wasn’t an option, meaning the only option was to prepare — and then go do it.

Under such conditions, having a vehicle that can store motorcycles as well as people and gear, safe and secure from the elements, becomes paramount. Ford’s new long-wheelbase, extended-body, high-roof Transit van, a competitor to the Mercedes-Benz Sprinter and Ram ProMaster, deserves serious consideration. While the Sprinter has been the gold standard here through 13 years and two generations, it was followed last year by a Fiat-built Ram ProMaster van offering front-wheel drive for an impressively flat and low floor, but with limited towing and some ergonomic challenges.

Like the Sprinter and ProMaster, the new Transit is available in multi-passenger wagon and two-passenger cargo-van configurations. For our motorcycle-track weekend, we chose the two-passenger extended wheelbase T350 HD model equipped with a 3.2-liter Power Stroke five-cylinder turbodiesel engine producing 185 horsepower and 350 lb-ft of torque, driving through a six-speed automatic and dual rear wheels with 195/75R16 tires. The MSRP as equipped was $50,295.

The diesel powertrain lends the Transit greater towing capacity than the 3.5-liter EcoBoost and 3.7-liter V-6 gas engines that are also available. The maximum tow capacity of the diesel van is 7,100 pounds, adequate to tow the test Jayco Octane Super Lite 161 toy hauler. As it turns out, the van’s 14 feet of inside storage length and 5-foot 8-inch interior width (not counting fender wells) was plenty adequate to store three motorcycles.

Loading bikes and gear into the Transit was straightforward enough with the Jayco trailer detached. However, with the trailer hitched, we found it was still possible by angling a loading ramp to either side at the rear opening or the side opening. We limited this unconventional technique to dirt bikes only, and I would not relish the loading-at-an-angle approach with most road bikes. The 6-foot 8-inch ceiling height inside the Transit was a wonderful asset for moving about...
without banging our heads.

When storing bikes in a stationary garage, you don’t need anything but a center or sidestand, but stout tie-down points are critical in any truck or trailer. Motorcycles can become a major mess and dangerous projectiles if they break loose during transit. Fortunately, the van featured a dozen separate tie-down rings located in convenient places around the interior.

Our 270-mile round-trip route took us from Southern California to the desert town of Rosamond where Willow Springs, a 62-year-old road course, features events most every weekend. A weight-distributing hitch and sway control are always useful features on a sizable trailer setup, but in this case the sway control was not necessary even with the high winds that were present in the desert.

The Transit towed the Jayco trailer beautifully. Partly out of respect for the winds, we never pushed our speed past the legal or prudent range. As a result, there were no issues whatsoever with stability, and we never needed to use the included trailer brake controller manually because we never experienced extreme sway...
issues. Under normal conditions, the brake application was smooth and progressive.

The ergonomics in the Transit are superior to the Ram ProMaster and competitive with those of the Mercedes-Benz Sprinter. The seating position is high, there is ample glass area, and the 10-way power seats are plenty comfortable. On the highway, as expected, the interior is a bit on the noisy side when the vehicle is unloaded, due to the cavernous shape and heavy-duty rear suspension and axle, but once the vehicle was loaded and the trailer hitched up, the ride quality improved and the noise level dropped to comfortable levels.

Along with factory insulation on the interior walls, other Transit niceties included a handy backup camera, Bluetooth for smartphone pairing, multiple small storage spaces including door bins, cup holders and even dual overhead storage bins. Downsides for our test van included the lack of available second-row seating, a rather uninspiring six-speaker sound system, and the absence of a navigation system on the small multifunction display (although a nav system is available optionally).

The Transit did not operationally “present” as a diesel at all, either in terms of starting, noise or vibration, although it did require extra attentiveness to seek out diesel fuel stations and the pump locations en route. With the trailer in tow, it delivered 12 miles per gallon, and without trailer, after our trip was completed, nearly 25 miles per gallon, which is comparable to a similarly equipped Sprinter van. Adding positively to the experience was a trip computer that provided real-time status of the remaining fuel range.

Various other features on the
Transit make using the vehicle simpler and more enjoyable, including a capless fuel filler, especially handy with diesel fuel, which can make your hands more odiferous than a dinner of Sloppy Joes and onion rings. Central locking is another handy feature, as are nonskid, easy-cleanup vinyl flooring, and USB and MP3 ports for importing music.

One last Transit feature worth mentioning is the rear doors, which open almost 270 degrees and attach to the sides of the body with magnets. However, we discovered that, while parked, some wind gusts were enough to dislodge the doors and swing them closed, making a supplemental restraint necessary if frequently operating under such windy conditions. Even so, we were impressed overall by the Transit’s spaciousness, driving experience, fuel economy, comfort and utility features. Right out of the box, it is indeed a viable contender for the already established Sprinter and front-wheel-drive ProMaster.

Do-It-All Trailer
As the smallest of Jayco’s Octane Super Lite series, the 161 model has a GWR of 7,000 pounds, just 100 pounds less than the Transit van’s 7,100-pound maximum loaded trailer tow rating. So they truly are happy together. The Jayco is ideally sized for two people. You can store two bikes or possibly three narrower ones in back, where a 7½-foot-wide fold-down wall doubles as a loading ramp. Maximum useful storage space is 10 feet 4 inches long and 8 feet 2 inches wide, not counting fender wells. Seven really stout tie-down rings give huge confidence that your bikes, ATV or side-by-side will be right where you parked them when you arrive.

The trailer comes with just about everything an adventure-seeker needs, including air conditioning and a con-

While John Stein was busy hauling motorcycles to the Mojave Desert in a Transit van, we were hard at work testing the Transit Wagon to find out how good it was at hauling a group of eight people. OK, so it wasn’t work, really… we were touring central California’s wine country with some friends from out of town. But that’s beside the point. “Wagon” is what Ford calls its vans with passenger seats in them, and the largest Transit Wagon offers enough padded expanse for 15 backsides. Since we run neither a small school nor an airport shuttle, we opted for the 10-passenger, medium-roof model with the base 3.7-liter V-6 engine. “Base” is somewhat a misnomer here, as this spirited double-overhead-cam engine produces a silky smooth 275 horsepower and 260 lb-ft of torque, more than enough for our impromptu tour-bus operation. Our guests found the seats comfortable, and taller passengers appreciated the adequate legroom and 6 feet of interior height.

If you have a large family — or a lot of friends — this is a vehicle that offers a place for everyone and a carlike driving experience. The Wagon is back.

— Chris Hemer
With our food stored and our bedding and gear bags close at hand, the Jayco was as easy to utilize as if we were simply walking into another room of the house.

vection microwave oven, a furnace, a large refrigerator/freezer, a two-burner LP-gas stove, and a private bathroom with a toilet, shower and tub. Additional features include an onboard fuel station, roof ladder, fully automatic electric awning, window coverings and a stereo system with twin USB ports for playing tunes or charging phones or tablets. We never came close to using up the available water supply or holding tanks over our Willow Springs weekend, although we admittedly did have a sink and toilets available in a nearby building.

Additional handy features include a folding dining table (that desperately needs a storage solution other than lying on the floor on a piece of carpeting), plenty of cupboard and drawer space in the kitchen, and simplicity of operation for everything. Actually, aside from its economy-oriented features, the $23,231 Jayco trailer doesn’t have many downsides at all. A glaring one, however, is the size of the fold-down twin bunks, which measure 5 feet 8 inches long. Obviously, this is fine for many people, but if you’re taller, you’ll need to either curl up or be content to have your feet stick off the end of the bed. There is room for longer bunks inside, so it’s a bit of a mystery why they are sized as they are. Jayco also offers an electric queen bed which is a good option for couples.

Also, as mentioned above, with its dual-axle setup and 205/75R15 rubber, the Jayco towed beautifully behind the Transit with no noticeable swaying even in crosswinds. We arrived at Willow Springs on a Thursday afternoon in time to begin the long weekend. Setting up camp was easy because of the simplicity of unlatching and lowering the Jayco’s rear ramp and then releasing and removing the motorcycles. For anyone who’s ever struggled with this process in a van or pickup, a toy hauler is bliss.

With our food already stored in the cabinets and our bedding and gear bags close at hand, the Jayco was as easy to utilize as if we were simply walking into another room of the house. In lieu of carpeting, the trailer has the requisite vinyl floor covering for a toy hauler, with a wood pattern that sweeps or wipes clean easily, making for trouble-free housekeeping during the weekend.

Ample lighting in both the trailer and van made nighttime activities easy. The Jayco is nicely illuminated both inside and on the exterior, where both the entry door and loading ramp
are well lit. Meanwhile, the Transit has five bright LED lights inside the cargo area, and they’ll stay on for as long as you have a door open — a nice feature made even more practical by their low-energy draw.

In the crosswinds that were present all weekend, having the four manual stabilizing jacks, one at each corner of the trailer, helped keep the unit secure, both in the winds and when people were moving around inside.

**To Prove It, Do It**

Traveling is always something of a leap of faith, and so the idea of combining a big, boxy van and a trailer, altogether measuring some 42 feet long, full of people, gear and motorcycles, definitely needed a litmus test.

Our route started in the California foothills, descended to the Pacific coast, traveled the freeways to the famous Grapevine leading from SoCal into the 3,800-foot Tehachapi Mountains, and finally wound up in the California desert. Along the way, we encountered passing truck blasts, a heavy thunderstorm that left parts of the roadway submerged, and in the desert, wind aplenty. There’s a reason the Mojave is the location of enormous wind-power stations.

At every turn, literally and figuratively, the Transit and Jayco package handled the conditions with ease. Once at Willow Springs, the high winds prevented us from using the electric awning or even setting up our folding chairs, as the latter might only have blown away. But even on this blustery weekend, we surely found huge validation for our original idea: If you bring the great indoors along with you, the great outdoors can be hospitable, no matter how inhospitable it gets.

I’ve always liked vans, and the Transit is a salute to our successful Willow Springs motorcycle adventure. After this drive, I’ll definitely give the Ford Transit and Jayco Octane Super Lite experiment a rousing “two wheels up.”

Small and light as it is, the 161 has everything needed, including a mirrored medicine cabinet, a combination shower/tub and a marine toilet with a foot flush in the compact bathroom.
### 2015 FORD TRANSIT VAN T350HD

<table>
<thead>
<tr>
<th>Specification</th>
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<tbody>
<tr>
<td>Fuel Economy, Solo</td>
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<td>Towing</td>
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<td>Engine</td>
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<td>Suspension, Rear</td>
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<td>Tow Rating</td>
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<td>GCWR</td>
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<td>Weight, as tested</td>
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<td>Length</td>
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### 2015 JAYCO OCTANE SUPER LITE 161

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<tr>
<th>Specification</th>
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<td>Exterior Height</td>
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<td>Interior Height</td>
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<td>Air Conditioner</td>
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<td>Converter</td>
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<td>Battery</td>
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<td>Tires</td>
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<td>Suspension</td>
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<td>Basic Warranty</td>
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### Specifications

- **Wheelbase**: 147.6"
- **MSRP, base**: $40,885
- **MSRP, as tested**: $50,295
- **Basic Warranty**: 3-year/36,000-mile (5-year/60,000-mile powertrain)

**2015 FORD TRANSIT VAN T350HD**

- **Fuel Economy, Solo**: 24.9 mpg
- **Towing**: 12 mpg
- **Engine**: 3.2-liter Power Stroke diesel inline five-cylinder
- **Horsepower**: 185 hp
- **Torque**: 350 lb-ft
- **Transmission**: 6-speed automatic
- **Axle Ratio**: 3.73:1
- **Fuel Cap.**: 25 gallons
- **Tires**: 195/75R16C
- **Suspension, Front**: Independent, MacPherson strut with stabilizer bar
- **Suspension, Rear**: Solid axle with leaf springs, gas shock absorbers
- **Brakes**: Four-wheel disc with ABS
- **Tow Rating**: 7,100 lbs
- **GCWR**: 13,500 lbs
- **Weight, as tested**: 6,260 lbs
- **Length**: 22'

**2015 JAYCO OCTANE SUPER LITE 161**

- **Exterior Length**: 20' 7"
- **Exterior Width**: 8' 6"
- **Exterior Height**: 11' 1"
- **Interior Width**: 8' 2"
- **Interior Height**: 7' 4"
- **Construction**: Welded aluminum floor, vacuum-bonded walls, fiberglass front cap, ¾-inch roof decking
- **Freshwater Cap.**: 59 gal
- **Gray-Water Cap.**: 28 gal
- **Black-Water Cap.**: 45 gal
- **LP-Gas Cap.**: 10 gal
- **Water-Heater Cap.**: 6 gal
- **Refrigerator**: 6 cu. ft
- **Furnace**: 25,000 Btu
- **Air Conditioner**: 13,500 Btu
- **Converter**: 60 amp
- **Battery**: Dealer supplied
- **Tires**: ST205/75R15
- **Suspension**: Leaf spring
- **Weight (water and propane full, no supplies)**: 4,980 lbs
- **Hitch Weight**: 900 lbs
- **Axle Weight**: 4,080 lbs
- **GVWR**: 7,000 lbs
- **GAWR [2]**: 3,500 lbs
- **Cargo Carrying Cap.**: 2,020 lbs
- **MSRP, base**: $23,231
- **MSRP, as tested**: $23,231
- **Basic Warranty**: 2-year
Despite any RVer’s best efforts, towing a trailer is often a learn-on-the-fly proposition. Somebody new to the lifestyle can scour every issue of Trailer Life for expert tips, research techniques online, chat with RVing friends and watch how-to videos, but there is simply no substitute for hands-on knowledge.

Once you experience the unsettling feeling of an unstable trailer “wandering” behind your tow vehicle, you won’t soon forget it. It’s the ultimate trial by fire, and in some cases, it can be enough to make drivers hesitant to attempt trip number two and beyond. All other setup items being correct, that white-knuckle experience might have happened because your tow vehicle wasn’t equipped with a weight-distributing hitch, a sway-control device or both. When a travel trailer is hitched to a tow vehicle, the downward weight of the trailer A-frame (known as hitch or tongue weight) on the tow vehicle’s hitch ball loads the back of the vehicle down, which in turn causes the front of the vehicle to lift, and that somewhat changes the steering geometry. This leverage effect reduces stability and increases the possibility of losing control.

The way to offset this is to install a weight-distributing (WD) hitch, which, with proper installation and
adjustment, evenly distributes the weight between the tow vehicle’s front and rear axles. And a sway-control device will help keep the trailer in line with the tow vehicle, reducing the side-to-side movement. Sway-control devices are not required or necessary on every towing setup for travel trailers, but they can help even the best of setups tow with greater stability.

We could easily fill up the following pages with an in-depth discussion of how each component works and why they’re necessary (check out “The Basics of Hitching” in Trailer Life’s 2015 Guide to Towing for that), but instead we present a list of many of the specialized hitches available on the market today. Each has its own particular method of distributing weight and/or controlling trailer sway, and each is worth its weight in gold in terms of making your towing experience more enjoyable, and safer to boot.

Blue Ox

The popular SwayPro from Blue Ox is an all-in-one WD hitch with integrated sway control. The SwayPro is designed to prevent trailer sway while acting like a supplemental suspension system, reducing the forces transferred between the tow vehicle and the trailer. The spring bars feature spring-steel construction and perform much like the leaf springs in truck suspensions; road forces are absorbed by the spring bars (which are inserted into pivot heads), resulting in less force being transferred between the tow vehicle and the trailer. The rotating latches’ pre-adjusted hitch head means there’s minimal fine-tuning, and the grease is trapped in the hitch head, meaning no mess on the spring bars. Once the hitch is properly set up the first time, installation should take no more than 15 or 20 minutes, and the result is a smooth, quiet ride, according to the company. SwayPro hitches feature a limited lifetime warranty. MSRP: starting at $779.

800-228-9289, www.blueox.com/trailer-towing/swaypro

Camco Manufacturing

Online distributor Camco offers a pair of hitch-up helpers to keep things in control. The Eaz-Lift ReCurve R3 is an extremely user-friendly WD hitch with adjustable sway control. The R3 is a mono-trunnion, inverted-bent-bar hitch featuring a streamlined design. The mono-trunnion aligns with the A-frame of the trailer, making the trailer and hitch move as one. The spring bars are inserted on the top of the ball mount instead of the bottom, making it easier to install and giving it more ground clearance. The mono-
CONTROL ISSUES

trunnion design allows for rotation about the same centerline as the hitch ball — meaning the spring bars do not rotate — eliminating the need for messy greasing of spring bars. Plus, the R3’s friction band works to clamp the center spindle to resist rotation, thus resisting sway. Sway control is adjusted by the user (by tightening a bolt on the clamp) and is not dependent on hitch weight. Sway resistance is applied by tightening the bolt on the back of the clamp, which increases the amount of clamping force applied to the center spool of the trunnion. MSRP: $439.

The Eaz-Lift ReCurve R6 is a WD hitch that features adaptive sway control. While the weight-distributing component of the R6 operates the same as the R3, the hitch will control sway for normal towing, but the sway-control component will automatically disengage during turns, making the maneuver smoother and easier on the driver. The R6’s adaptive sway technology means resistance is built only as needed until it peaks at the maximum point. According to the manufacturer, the hitch is factory pre-
calibrated for optimal sway-control performance and does not rely on hitch weight to apply sway-resistant forces. MSRP: $799.

Curt Manufacturing

Curt Manufacturing’s brand-new TruTrack weight-distribution system is an impressive update to the traditional trunnion-bar weight-distribution hitch, combining precise load equalization and active sway control to deliver a smooth, safe ride. The TruTrack connects to the trailer frame using a pair of trunnion-style spring bars and heavy-duty, adjustable support brackets, which are set at fixed positions by the user and hold the spring bars in place, laterally and vertically. While regular spring bars angle from side to side as the trailer rounds a corner or shifts from a crosswind, the active sway-control arms resist this movement, keeping the trailer aligned with the tow vehicle and stopping trailer sway before it starts. If it does begin to sway, TruTrack has a special integrated spring and cam system that builds up pressure to actively stop sway, and then relaxes to make smooth turns. And, perhaps most impressively, the TruTrack utilizes a pair of interlocking nuts that can be accessed on the outside of the head. Six preset holes give users specific angles of tilt and a simpler method of adjustment, reducing time on the side of the road and increasing miles on it. MSRP: $796.54.


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Fastway Trailer Products

The Fastway e2 hitch, available in trunnion- and round-bar configurations, utilizes rigid brackets to help control sway, in addition to acting as a “bridge” between the tow vehicle and trailer for a fast and easy setup. Instead of the spring arm swinging back and forth freely at the bottom of a chain, the e2’s spring arms rest on top of a bare metal bracket, which the manufacturer claims can help reduce driver fatigue and greatly improve trailer control while towing. The Fastway e2 is backed by a 10-year warranty. MSRP: $388 to $505.

877-523-9103
www.fastwaytrailer.com

Hensley Manufacturing

The Hensley Arrow and Hensley Cub are specialized sway-control hitches that utilize a converging linkage system developed by Hensley back in 1993. By applying basic physics, Hensley projected the pivot point of the trailer forward and over the rear axle of the vehicle, which is how a (much more stable) fifth-wheel hitch setup works. The Hensley hitch allows only the tow vehicle to initiate the pivot on the pivot point, so forces applied to the side of the trailer cannot cause the trailer to sway. The Arrow and Cub mount directly to the trailer and can be left in place once installed. Hensley hitches are designed for self-installation and can usually be set up in less than an hour. Hensley currently provides four models: the original Hensley Arrow; the Hensley Cub for smaller trailers; the SwiftArrow, which utilizes a snap-up style weight-distribution system; and the SwiftCub. Reconditioned Hensleys are available at a discounted price. Hensley provides a lifetime warranty for the original owner, in addition to a 60-day money-back guarantee. MSRP: $1,495 to $3,195.

800-410-6580, www.hensleymfg.com
Husky Towing Products

Husky offers RVers a pair of innovative WD/sway-control options, starting with the **Center Line TS** hitch system. The TS combines weight distribution and sway control in a strong, lightweight design that delivers outstanding performance with significantly less noise than competing hitches, according to the manufacturer. To make the TS both strong and light, Husky uses 1035 carbon steel in a single-piece, forged top plate with trunnions of hardened 1045 steel. Used in conjunction with the innovative head design, these super-strong materials complement each other to provide the right amount of clamping force to assist the spring bars and lift brackets in resisting sway. This head plate clamping force on the trunnions provides resistance against side-to-side movement and is the reason it is so quiet. The lift brackets, head and spring bars are also designed to work together to promote a quiet and smooth ride. The round, straight spring bars provide a superior fit that promotes improved sway control by reacting to trailer movement earlier than other products, reports Husky, and the tapered design of the spring bars is said to improve ride quality. The hitch ball comes preinstalled, and the lift tool can load and unload the spring bars as well as tighten the lift bracket bolts. MSRP: $429.95

Husky’s **Center Line HD** WD hitch features active self-centering sway control, which employs compression-cylinder technology and torsion spring bars to distribute weight and combat trailer sway before it begins. Compression cylinders actively center the trailer behind the tow vehicle, while trunnion-style torsion bars (in one of three weight ranges to correspond to the trailer weight) create a smooth, safe towing experience. MSRP: $789.95.

877-544-4449, www.huskytow.com

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powerhouse-products.com
Progress Manufacturing
Celebrating its 70th anniversary this year, the Equal-i-zer sway-control hitch has been around for a very long time. Since day one, the Equal-i-zer hitch has had the sway control built right into the hitch. Equal-i-zer hitches utilize friction-type four-point sway control, which resists trailer movement in both directions. The Equal-i-zer head utilizes two points of rotational friction to resist trailer sway; this is activated by downward pressure from the trailer tongue and upward pressure on the spring arms. The spring arms link the rotational sway control to the sway-control brackets and distribute the trailer’s tongue weight. The Equal-i-zer’s rigid bracket design provides the other two points of the four-point sway control, working with the rotational friction sway controls to reduce trailer sway. Plus, the forward and back friction of the hitch arm on the bracket serves as a secondary sway-control system. The four-point sway control also offers extra protection from hazards like passing semis, wind gusts and/or emergency maneuvers. Backed by a lifetime warranty, Equal-i-zer hitches are a product of Progress Manufacturing, formerly Lindon Hitch. MSRP: Starting at $733.

800-478-5578, www.equalizerhitch.com

Reese Products
One of the most recognizable manufacturers in the industry, Reese offers a number of WD and sway-control systems including the Steadi-Flex, which features six-point sway control and tapered steel spring bars for smaller vehicles, though it is still compatible with 17/8-, 2- and 25/16-inch balls (sold separately). The Steadi-Flex mounts to any 3- to 6-inch frame without drilling. Once in place, Reese claims the superior friction-pad design of the Steadi-Flex leads to more sway resistance and a safer, smoother ride. Plus, the lack of true metal-on-metal contact means a longer-lasting product that operates more quietly. MSRP: $783 to $920.

For more conventional, heavier than light-duty applications, Reese makes the SC WD hitch with integrated sway control. For trailers up to 15,000 pounds, the...
SC offers what Reese describes as 10 times more sway control than most other brands by utilizing automotive-grade friction pads. The system delivers improved handling and a safer ride with six-point sway control, and it performs without metal-on-metal contact. MSRP: Starting around $700.

For tough-to-handle, larger trailers, Reese offers the Strait-Line WD hitch with proactive sway control. The Strait-Line combines the control of a WD hitch with a dual-cam, high-performance sway-control system designed to resist sway before it can start. Available in weight ratings up to 17,000 pounds trailer weight, the Strait-Line literally forces the trailer to stay in a straight line with the tow vehicle, delivering strong sway resistance that automatically increases on demand. Plus, it doesn’t interfere with parking or backing the trailer. MSRP: $843 to $1,235.

800-632-3290, www.reeseprod.com
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Torklift International
For RVers looking for a serious WD hitch for heavy-duty towing, Torklift’s SuperHitch towing series is rated at an impressive 3,000 pounds tongue weight and 30,000 pounds towing. The system includes both the SuperHitch Magnum 30k and the SuperHitch Everest 30k (compatible only with the SuperHitch system). The frame-mounted receiver system means no drilling into the A-frame, while the dual receiver allows insertion of stout dual shanks for strength. The Everest WD system features spring-bar hookup clips available in both hydraulic-assist and traditional styles, while a hydraulic spring-bar tension assist makes for easy user adjustment. The SuperHitch system is available with a lifetime warranty. MSRP: $1,269.99 for the Everest 30K; $808.99 for the Magnum 30k.

800-246-8132, www.torklift.com

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First Time’s the Charm

The Spyder, Winnebago’s inaugural toy-hauler trailer, zeros in on adventurers looking to stay on the shorter side of things.

In the world of RV manufacturing, it isn’t unusual to see several renditions of a new product, whereby changes in features, options, build specs and floorplans are made over a period of time to refine the end result. In many instances, the second or third time’s the charm, so to speak, before the truly polished RV is up to the company’s — and the customers’ — standards.

Although building towables for only a few years, Winnebago is certainly no stranger to RV manufacturing and has amassed decades of knowledge and experience. The company capitalized on that experience when it began building its first travel trailer tow hauler, named the Spyder, earlier this year, and the result is a versatile lineup of three floorplans targeted at high-energy enthusiasts. The smallest of these sporty, no-nonsense trailers is the 24FQ, which we’ve highlighted here.

Winnebago designers started with a solid 8-inch I-beam frame, riding on a pair of E-Z Lube axles suspended by an Equa-Flex equalizer and augmented by the Correct Track alignment system. Added to this configuration are load range D rated nitrogen-filled 225/75R15 tires mounted to optional Lionshead aluminum wheels.

To complete the lower portion of the Spyder 24FQ, a fully enclosed, heated underbelly using a combination of corrugated plastic and Darco material is strategically placed to protect the 5/8-inch tongue-and-groove plywood flooring and components. A number of optional upgrades and useful exterior features grace the exterior, including smallish but hearty slam-latch front-compartment doors. Modern and stylish frameless windows add a touch of class, as do the smooth, glossy black gel-coated side walls. A practical accommodation is the almost-all-inclusive docking station, which houses the satellite and cable connections, city water port, black-tank flush and an outside shower.

Rounding out the exterior...
details are four-corner power stabilizer jacks, a Dometic power awning with LED lighting, a prewired TV location with a built-in bracket backer, a 4,000-watt Cummins Onan generator and two independent fuel tanks for fueling both the generator (18 gallons) and motorized toys (40 gallons). This full-featured Spyder undoubtedly caters to the toy-hauling RVer while remaining competitively priced.

Construction-wise, the all-aluminum framed roof and walls promise long life, and the standard insulation can be upgraded to the Extreme Weather Package, which should provide enhanced comfort in hot and cold environments.

Once aboard the Spyder 24FQ, occupants are treated to bright yet richly toned interior hues and optional stainless-steel trim, medium dark natural wood and bold black and red accents. The rugged but classy-looking interior complements the nicely appointed kitchen. Here, the chef will find an optional 8-cubic-foot Dometic refrigerator beside a trim-matching microwave, range/oven and hood, and an ultracompact collection of cabinetry. Working counter space is limited, but the covers on the large double sink

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**QUICK INFO**

<table>
<thead>
<tr>
<th>Exterior Length</th>
<th>28' 9&quot;</th>
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<tbody>
<tr>
<td>Exterior Width</td>
<td>8' 4&quot;</td>
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<tr>
<td>Interior Height</td>
<td>8' 2&quot;</td>
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<td>Exterior Height</td>
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<td>Freshwater Cap.</td>
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<td>LP-gas Cap.</td>
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<td>UVW</td>
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<td>GVWR</td>
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<tr>
<td>MSRP, base</td>
<td>$43,210</td>
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</tbody>
</table>


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The 24FQ has a limited supply of cabinets for other storage, most of which are located in either the master bedroom or the entertainment center (more on this below). Pretty much the only other indoor storage can be found in an enclosed aluminum-diamond-plate box in the floor. This compartment is ideal for chemicals that might spill or leak and could also be used for riding gear and helmets when chemicals are not stored here.

Now, back to the entertainment center. The Spyder’s optional entertainment upgrade is second to none in the world of travel trailers. Music fans will love the dramatic, full sound system made up of nearly everything Rockford Fosgate makes for vehicles. Included are a powered 12-inch subwoofer, massive five-channel 1,800-watt amplifier and four 6¾-inch wall-mounted exterior marine speakers — all controlled with a remote for ease of use. For visual entertainment, Winnebago includes a 39-inch Jensen TV residing on a swiveling bracket.

Like most shorter toy-hauler configurations, the 24FQ’s living room is part of the garage. When in the living mode, most of the area is devoted to opposing 60-inch sofa sleepers. A HappiJac bed-lift system reveals an overhead queen bunk.

Once the toys are unloaded, the rear cargo door can be fitted with optional rails to convert it into a raised patio featuring a unique folding table. In the open (level) position, the ramp cables are capable of supporting up to 1,500 pounds before requiring extra support. The garage portion of the Spyder offers a total length of 12 feet 6 inches before reaching the rear bathroom wall. Maximum width is 8 feet 1 inch before necking down at the galley, where floor space is reduced to 5 feet 2 inches. Even large, heavy toys can be safely secured to one of several 6,000-pound-rated, frame-mounted tie points.

Within the forward sleeping quarters is a full walk-around 60 x 80-inch memory-foam mattress tucked between curved nightstands with cabinets. From here, there’s an entry to the generously proportioned pass-through bathroom, which can also be accessed via the hallway door. There is nothing fancy found in the lavatory, but with a very tall and spacious glass-enclosed shower and plenty of room on and around the toilet, functionality quickly surpasses the need for luxury. The trailer is also equipped with a 25,000-Btu ducted furnace and can be optioned out with a 15,000-Btu low-profile roof air conditioner and Atwood tankless water heater.

If your travel trailer search takes you in the direction of a toy hauler, especially one that screams adventure, check out Winnebago’s all new Spyder 24FQ. It offers many desirable options, aggressive exterior graphics and a decent price, strong evidence that Winnebago did its homework.
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EQUAL HOUSING LENDER
A battery bank is the heart of any 12-volt DC electrical system, providing versatility on or off the grid. The larger the battery bank, the better the efficiency, especially when you’re spending time in primitive locations. Most owners are aware of how many batteries are carried onboard and, hopefully, the capacity of the battery bank. Surprisingly, however, few people give any thought to how these batteries are charged, figuring that the power converter automatically takes care of that process. The result: out of sight and mind until the batteries go kaput and there’s not enough power to run 12-volt DC appliances and accessories.

Naturally, those who always plug in to a utility pole have less concern for battery charging until they find themselves in a state park with no hookups and a curfew on running the generator. Add in a residential refrigerator running off an inverter and batteries, and the situation can become even more demanding. Proper battery conditioning is key to battery service and longevity, and the fact remains that most RVs have converter/chargers that do a much better job “converting” than charging. An expert in the battery business put it succinctly: “If you want a five-year battery to last two years, use the stock converter/charger.”

Typical converter/chargers do nothing more than keep the battery at a set voltage without regard to conditioning. That means the plates inside a battery are not being hit with enough voltage to prevent sulfation, which restricts the flow of acid and gas. The result is a greatly diminished service life of the battery.

Upgrading to the Xantrex TRUECharge2 takes the guesswork out of battery conditioning for better performance and longevity. Removing the plate in the corner of the unit provides access to the power leads. The wires were connected to a 12-gauge extension cord, which took a little maneuvering to get all terminals and wires contained in the tight space.
eventually stifles the ability of the battery to receive a full charge. Intelligent, multistage chargers take the guesswork out of battery conditioning, providing proper charge rates through three phases: bulk, absorption and float. And one of the best products on the market to achieve this type of smart charging is the Xantrex TRUECharge2.

For a battery to be conditioned properly, it must first be subjected to a bulk charge. At this point the voltage from the TRUECharge2 is at 14.4 volts and the current (amperage) is at its maximum without causing damage to the batteries. The TRUECharge2 will allow you to configure the battery bank, which instructs the unit to produce the most effective charge algorithms for optimum conditioning, without risking battery damage. This is especially important when using AGM batteries because this type of battery has charging-voltage limitations. (The charger is factory set for flooded-cell batteries; selecting the type of battery in your RV is as simple as pushing a button on the onboard display panel.) At the end of the bulk-stage cycle, the batteries will be about 80 percent charged.

The next step is the absorption stage, when the charger maintains the voltage from the bulk stage but allows the current to drop in response to battery resistance. When the state of charge reaches 100 percent, the absorption stage gives way to a float stage that will keep the batteries at the full level. At this point, voltage is limited to around 13.4, which is high enough to keep the batteries charged but low enough to limit gassing of open-cell batteries.

Single-stage chargers provide only a float voltage, and many times this voltage is poorly regulated and may creep up to 13.8 and even higher, which can cause flooded-cell batteries to gas and electrolyte to evaporate. If these batteries are left unattended, the electrolyte level becomes too low and the plates sulfate. Gassing also causes corrosion, which can damage terminals and hold-down hardware. Float voltage that exceeds the threshold for AGM batteries will shorten their lifespan.

To be fair, there are some converter/chargers with three-stage capabilities provided by the factory, but most are not sophisticated enough to condition properly, much less handle the charging requirements of AGM batteries. RVs equipped with good quality inverter/chargers will have capabilities comparable to the TRUECharge2.

A big factor that comes into play when charging is battery temperature. A warmer battery will accept current easier than one that is cold. An optional temperature sensor is offered by Xantrex for the TRUECharge2 and should be considered mandatory for efficient battery charging. The sensor simply attaches to a negative terminal.

**DIY TIP**

Take time to lay out the entire system first so that the proper-length cables are determined and the location of the equipment meets the manufacturer’s specifications.
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and can be plugged into the charger via an RJ12 telecommunications connector. The default on the display panel is set for “Warm,” which means the batteries can be between 41 and 86 degrees Fahrenheit. “Cold” and “Hot” settings are when the batteries are below 41 degrees or above 86 degrees Fahrenheit, respectively. The temperature sensor eliminates any guessing, and in the long run the additional cost of around $35 is worth the improved battery longevity.

Another option well worth the $100 investment is the Remote Panel, which can be installed within 25 feet of the charger (a 50-foot cable is optionally available from Xantrex). Since the likelihood of installing the converter in an exterior compartment is great, the Remote Panel provides continuous monitoring of the batteries without going outside. The Remote Panel pretty much clones the onboard display panel and allows the user to make mode changes. A glance will confirm that everything is working properly, and the fault icons will inform of any malady in the system, like when a breaker opens.

Installation of the Remote Panel is fairly easy since the rectangular housing can be surface mounted on any flat surface and requires drilling only a 48-millimeter (1.89-inch) hole. The caveat is making sure there’s enough clearance in the back of the mounting surface to tighten the 1½-inch locking nut and ensure it doesn’t interfere with other structures. In our case, we just cleared the drawer behind the mounting area.

It took us about an hour and a half to install the charger and Remote Panel, following directions that are clear and concise. There are a number of warnings from the factory, so reading the instructions first is a good idea. Also, if you’re somewhat leery of working with electrical components and wiring, have a certified technician do the install. Pay particular attention to the mounting instructions that specify charger orientation and ventilation. Xantrex recommends against mounting the charger and battery bank in the same compartment to prevent corrosion, but we assume that’s aimed at the use of flooded-cell batteries. We have Lifeline AGMs, which do not gas or corrode. Wire and circuit-breaker size

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**A big factor that comes into play when charging is battery temperature. A warmer battery will accept current easier than one that is cold.**

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[8] Professional-grade cable crimpers are used to install terminals for connecting to the batteries. [9] Battery cable terminals are attached to studs that are found under the cover plate on the other side of the charger.

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[10] RJ12 cable for the remote panel is plugged into the top position in the charger. The bottom position is for the battery temperature sensor. [11] The access cover is reinstalled on the charger after completing the wiring procedure. [12] Once wired, the charger can be installed in its permanent home.

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and terminal type are specified; we used marine-grade 4-gauge cable, terminals and a 50-amp breaker.

To get power to the charger, we elected to route a 12-gauge extension cord to the nearest GFCI outlet, hardwiring the other end directly into the charger’s AC input. Romex wire can also be used to hardwire the unit into the RV’s power-distribution panel.

A lesser-known stage of the battery-conditioning process among RV owners is equalization, whereby the batteries are subjected to high voltage for a controlled period of time. In most cases, voltage is raised to around 15.5, which technically overcharges the batteries. This is done to break up sulfation and is normally a process reserved for flooded-cell batteries.

The TRUECharge2 has an equalization provision that can be activated only when two buttons on the onboard display or Remote Panel are intentionally depressed at the same time. This is a safeguard to prevent accidental overcharging, which leads to overheating and possible damage when equalization is not necessary or recommended. Recognizing the potential damage to gel or AGM batteries that are subjected to high voltage, Xantrex allows equalization only when flooded-cell battery type is selected on the display or remote. But there are circumstances when an AGM battery, for example, should be equalized.

We installed a second TRUECharge2 unit in another RV that has older 6-volt AGM batteries. A discussion with a Lifeline technician led to the discovery that the batteries were not conditioned properly by the factory converter/charger, even though it supposedly is a three-stage unit. Lifeline recommended equalizing the batteries for five hours, but the TRUECharge2 limits equalizing to one hour, so we had to reset the cycle five times. Fresh AGM batteries that are continuously connected to the TRUECharge2 should never need equalization.

Flooded-cell (lead-acid) batteries, in an RV environment, must be fully charged every three to five weeks, which may be problematic for owners on two fronts: the aforementioned lack of a charger that will fully condition batteries, and neglect simply because the RV is in storage for a period of time and it’s difficult to hook up to a power source.

The sulfation on the plates is a substance that’s jellylike, and it’s easy to reverse this buildup within three weeks in hot weather and about five weeks in cold weather. If that jellylike substance is not driven back into the solution before the three- to five-week time frame, it crystallizes and is much harder to reverse. There’s no need to equalize if the batteries are fully conditioned on a regular basis. Equalization is hard on the batteries, but not as

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damaging as plate sulfation. The high voltage drives the water out of the batteries and corrodes the grids that hold the lead, so it should be done only as needed — and not very often. For ultimate battery longevity, it’s best to use an efficient charger like the TRUECharge2 and keep it plugged in when in storage, if possible.

TRUECharge2 series battery chargers are available with 20-, 40- and 60-amp outputs. Choosing the right charger is dependent on the size of the battery bank. The general rule is that charger size is determined by dividing the capacity of the battery bank by five. The 40-amp model is good for a 200-amp-hour (Ah) battery bank, which was a close match for the 220-Ah capacity of the two Lifeline AGM 6-volt batteries. For larger battery banks, two TRUECharge2 units can be wired in parallel to provide up to 120 amps of charging power.

The TRUECharge2 takes the guesswork out of proper battery conditioning and is a cost-effective way to realize the intended life cycle of any battery bank. The street price for the TRUECharge2 40A is around $370.


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Whether you power up with a small portable unit or own a toy hauler or fifth-wheel with a built-in model, you rely on a generator every time you camp off the beaten path. Yet, paradoxically, most of us don’t maintain our generators properly. You wouldn’t think about buying a tow vehicle, driving it a few miles each summer and then ignoring it for the rest of the year, but that’s precisely what a lot of RVers do. A generator is comprised mainly of an engine — one that shares a lot of similarities with other engines including a carburetor (or a venturi in LP-gas generators), air and oil filters, belts and other components. You may have grown accustomed to that power plant roaring to life whenever you pull the cord or push the Start button, but all it takes is a few months of neglect, and your generator could go on strike when you need it most.

To get some expert advice on generator maintenance, we visited Smith Powerhouse, Inc. in Bellflower, California, a factory-authorized service and warranty center for Cummins Onan, Honda, Kohler and Generac generators. Owner David Voloshin and shop foreman Matt Rudametkin are certified master generator technicians who have nearly 50 years of experience between them, and they’ve seen it all.

By far the most common built-in RV generators in use today are the 4,000-watt Cummins Onan (known as the MicroLite 4000, MicroQuiet 4000 and RV QG 4000), its 3,600-watt LP-gas variant (MicroLite, MicroQuiet and RV QG 3600 LP), and the larger Cummins Marquis Gold 5500 and 7000 (also known as the RV QG 5500 and RV QG 7000), and their propane counterparts, the Marquis Gold/RV QG 5500 LP and 6500 LP, so these will be the focus of this article. There are a lot of good choices for portable generators as well, but from our experience, the most popular model among RVers is the 2,000-watt Honda EU2000i, so we’ll be covering maintenance tips on this model as well.

Now, while the most frequent types of maintenance, such as oil/filter and spark-plug changes, shouldn’t prove too challenging for most DIYers (and can save some time and money), Smith Powerhouse recommends against more advanced maintenance procedures for two important reasons. One, you will likely do more harm than good if you don’t know exactly what you are doing, and two, you can seriously hurt yourself. When it comes to major scheduled maintenance, it’s best to leave the heavy lifting to experts like Smith Powerhouse.

With all that said, let’s take a closer look at what makes our favorite generators tick.

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1) This is what most of us are familiar with when we open the generator compartment door: a plastic box that tells us little or nothing about its inner workings. But the popular Onan 4,000-watt gas generators are actually very easy to service — start by turning the two black levers to release the front cover.

2) The Cummins Onan 4,000-watt generator is a single-cylinder, air-cooled engine designed to run on gasoline. Above the Start/Stop switch (A) is the carburetor (B), which is fitted with a mixture screw (C) at the bottom to allow limited adjustments for altitude. The cover emblazoned with “Onan OHV” is the valve cover. Bottom right is the yellow oil filter/dipstick (D). Note the large brush assembly (E); this acts as a gasket to compartmentalize the engine components when the cover is in place, promoting proper airflow from the fan (left, not visible) over the critical engine components. It is for this reason that you should never run the generator with the cover off, even in very hot weather. Make sure you have the ID tag info (F) on hand when ordering parts.

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Onan Marquis Gold 5500 and 7000 (also known as the RV QG 5500 and RV QG 7000), and their propane counterparts, the Marquis Gold/RV QG 5500 LP and 6500 LP, so these will be the focus of this article. There are a lot of good choices for portable generators as well, but from our experience, the most popular model among RVers is the 2,000-watt Honda EU2000i, so we’ll be covering maintenance tips on this model as well.

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With all that said, let’s take a closer look at what makes our favorite generators tick.
3) The Cummins Onan RV QG 3600 is functionally identical to the MicroLite/MicroQuiet/QG 4000 generator, except that it runs on LP-gas. On the upside, LP-gas-powered generators don’t suffer from a gummed up carburetor if allowed to sit for long periods. On the downside, they don’t produce as much power as their gasoline-burning counterparts, which is why they are derated somewhat. With the covers off, you can see the venturi (A), which functions similarly to a carburetor, and the LP regulator (B).

4) Checking the oil is similar to any other engine; unscrew the cap and note the level. If the generator has been properly maintained and the oil has been changed at the recommended intervals, it should be brown like this, not dark brown or black.

5) Before changing the generator’s oil, run it for at least 10 minutes to get it up to operating temperature, which helps the oil drain easily and completely. Trailers factory-equipped with a generator like this one (or even generator prep) will have an access panel underneath the generator compartment. Simply remove the two screws, and the drain plug will be exposed.
6) Remove the plug and allow the oil to drain into a suitable container. Cummins Onan 4000/3600 LP generators hold only 1.7 quarts of oil, so this process goes pretty quickly. This generator doesn’t use an oil filter, so all you have to do now is replace the drain plug and access panel, and refill the crankcase with the recommended oil.

7) The air filter housing is also clearly labeled, and the element is very easy to inspect/replace. Simply remove the wing nut on the side of the housing, then remove the wing nut that holds the filter in place. The filter can then be pulled free. This one still looks in good condition; a filter in need of replacement will be a dark color. When replacing the filter, be sure to reinstall both wing nuts, not just the one on the housing, or the filter will not be seated properly and will not clean incoming air.

8) To the right of the yellow oil filler is a gray (in this instance) or black spark plug cover boot. Pull it down, and the end of the engine’s single spark plug will be revealed. The plug can then be removed with a common spark-plug wrench and inspected/replaced.
9, 10, 11) These gas generators also come equipped with a small fuel filter that should be replaced periodically according to the maintenance schedule. Remove the fuel hose clamp (arrow) first, then pull the hose off the filter barb. Next, pull the rubber gasket out of its groove to gain access to the filter. The filter assembly is threaded and can be easily removed with a \( \frac{9}{16} \)-inch-deep socket.

12) An inexpensive upgrade Smith Powerhouse recommends is a second fuel filter (routed inline in an accessible location) to further ensure against dirt and grit entering the fuel system.

13) The most common cause of hard starting (or not starting at all) with an RV generator is lack of use. Smith Powerhouse recommends that you run your generator every four weeks for two hours under load (such as a running air conditioner) to keep it properly exercised. The discoloration at the bottom of this carburetor float bowl means that fuel sat there for several months, and the deposits clogged the tiny orifices in the carburetor. Once allowed to deteriorate to this point, you’re looking at a $300 bill for the carburetor, plus removal/replacement labor. If running the generator regularly isn’t an option, Smith Powerhouse recommends installing a shutoff valve in the fuel line before the generator. Turn the valve off, then run the generator until it is out of fuel. Adding a fuel stabilizer (like Onan OnaFresh) is also recommended.

14) Don’t forget that the generator is more than just an engine — it’s a power-generation system. Letting it sit for long periods can also cause the brushes to stick and the slip ring (shown) to oxidize, causing any number of power-delivery issues. This damage is not easily repairable and will more than likely require the attention of a professional.
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15) The Cummins Onan 4,000-watt gas/3,600-watt LP generator uses an overhead valve engine complete with valve springs and rocker arms. Valve clearance is adjusted in similar fashion, with a pair of wrenches and a feeler gauge. However, neither Smith Powerhouse nor Cummins Onan recommends you try this yourself. For one thing, valves that are too tight or loose will cause engine damage. Plus, an accidental bump of the starter can mean serious injury.

16) Wherever you take your generator for service or troubleshooting, Smith Powerhouse recommends you ask the shop personnel if they have a load bank. Similar to a dynamometer for cars, a load bank can load the generator to different percentages to make sure it’s running properly and producing the correct frequency, amperage and voltage for a given load. Smith Powerhouse conducts this test with every generator it services.

Cummins Onan Marquis Gold/RV QG 5500 and 7000, 5500 LP and 6500 LP

1) Other popular Cummins Onan generators are the gas-powered 5,500- and 7,000-watt models (typically found in larger toy haulers) and the 5500 LP/6500 LP found in some fifth-wheels. This is a V-twin engine oriented on its side, with the valve covers facing up (the right cylinder is visible). Though it is a completely different design from the 4,000-watt generators, many maintenance procedures are similar. Note that the oil fill/dipstick is in the same location as the 4000/3600 LP.

2) The air cleaner uses a paper element that is readily accessible from the front of the unit. Simply unsnap the clips, and the cover comes right off. This filter element still looks good.
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WATT’S UP

3) Draining the oil on the 5500 and 7000 is simple, since it uses a petcock instead of a drain plug. Warm the engine for about 10 minutes, then put a pan underneath and open the petcock; the oil is routed underneath the RV through a rubber hose.

4) Unlike its smaller brother, the Marquis Gold 5500/7000 does have an oil filter (arrow) that looks like a small automotive filter. It is accessed through a hole in the bottom of the generator compartment. Both the replacement filter and handy wrench are available through Cummins Onan dealers.

5) The Marquis Gold 5500/7000 has its spark plugs oriented on the sides of the cylinders (arrow), which can make them a challenge to reach. A swivel socket does the trick here. Removing the left (or Number 1) cylinder spark plug requires the removal of the air-filter assembly first.

6) Depending on the year and model, the 5500/7000 gas generators may actually have two fuel filters: this secondary one, near the carburetor, and a primary one at the fuel pump. Be sure to inspect your particular generator to see if it has two; replacing one won’t do it.

Honda EU2000i

1) The popular Honda EU2000i portable generator is not only reliable but easy to service. Popping off the front cover reveals the air-filter housing (A), carburetor (B) and oil fill/dipstick.

2) Removing the single screw reveals the main filter (C), which is made from a higher density foam, and the low-density foam pre-filter (D). Both are washable with a mild detergent and can be reused. The manufacturer recommends that these filters be oiled to help trap dirt, but be careful not to overdo it.
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WATT’S UP

3) The Honda EU2000i has another small panel underneath the carry handle, which allows access to its single spark plug. Remove the boot and the plug like any other engine. The plug should be relatively clean and gapped to .025 inch.

4) Changing the Honda’s oil isn’t difficult, but it can be messy — that’s why Smith Powerhouse offers this handy trick. Bend a piece of common cardboard into a trough and wedge it underneath the filler. Then you can tip the oil out of the crankcase and into a pan without it running into/onto the generator.

5) Cardboard is also employed during refill. Why not a funnel? Because the crankcase holds less than half a quart of oil, and since a funnel makes it difficult to see the level, it’s easy to overfill and make a mess. Pouring the oil in using this method allows you to clearly see when the oil is nearing its recommended level. The EU2000i does not use an oil filter.

6) Smith Powerhouse load tests all the portable units it services, too. Here you can see the EU2000i is putting out 122.2 volts, which is right in spec.

7) If you won’t be able to run the EU2000i for a while, it is easy to drain the fuel from the carburetor by turning this small screw underneath the float bowl counterclockwise. Fuel drains down the tube to the left and out the bottom of the generator. Put fuel stabilizer in the tank, keep the unit indoors, and you should be good for the off-season.

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As an experienced bicyclist who has ridden a number of high-end road and mountain bikes, I find the idea of pedaling a folding bike somewhat less than invigorating. But as an RVer, I understand the benefits of having a bicycle that can fold into a small package that can be easily stowed in a storage compartment. So I took the assignment of testing Camping World’s line of Adventurer folding bikes with an open mind.

There are a number of folding bikes on the market, and the Adventurer models are built using an interesting assortment of well-known components in the cycling world and less exotic materials like a steel frame, which is heavier than carbon or aluminum. But strength, which is obviously provided by the steel frame, is important when designing and building a bicycle that folds into a compact package and relies on hinges to keep it together. The result is a lineup of models that have reliable, easy-to-use components and a few more pounds that are offset by multiple-speed gearing. Adventurer folding bicycles come in models with three, six and 12 gears and, of course, a single-speed version for the purists or for those riders who rarely go uphill. Multiple gear sets, made by Shimano, an icon in the cycling industry, make it easier for riders to regulate pedaling effort. Speeds are changed by turning a grip-type shifter on the handlebars, except for the trike.

For most RV owners, there are enough bells and whistles to make these bikes practical for tooling around campgrounds and nearby neighborhoods, without the high cost. Make no mistake; folding bikes are not performance...
machines, but they transform into highly rideable transportation that's a healthy alternative to using a tow or dinghy vehicle. I have to admit, these bikes were a lot more fun to ride than I expected.

The operation for folding the bikes is pretty simple; quick-release clamps are used in strategic locations. We found it easiest to drop the seat after releasing the clamp, then the handlebar is turned to be parallel with the frame. Next the stem is released and folded down. The bigger clamp on the top tube is then released and the bike folded in half. Opening is just the opposite, and the entire process takes only a few minutes after the acclimation. Make sure the seat post is not extended past the marked limit line; even most taller riders will be able to find a comfortable position. The trike folds similarly but is a little more bulky due to the extra wheel and basket. Nevertheless, it’s still pretty compact when folded.

The following bicycles are the most popular among RV owners.

Adventurer Single-Speed Folding Bike
Remember your first bike? Chances are, it was a one-speed. It was simple, and you loved it. The Adventurer single-speed folding bike harks back to those days, with all the features you need and none that you don’t. It sets up fast with quick-release clamps on the handlebars and seat post, as well as a folding hinge in the steel top tube. Once unfolded, the bike’s seat and handlebars adjust for riders of just about any height. Even with its rugged construction, it’s still manageable at 35.4 pounds and supports up to 250 pounds. A luggage rack with a spring-loaded hold-down is designed to handle lightweight items, like a small bag or water bottle.
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[Right] The six-speed bike gives riders enough gearing to handle small hills. [Below right series] Folding the bike is accomplished by releasing clamps on the seat, handlebar, stem and top tube. Setup is just as easy.

250 pounds. It folds to just 30¾ inches long by 17½ wide by 26 inches high, so it will fit in many storage compartments or in the bed of a pickup or trunk of a dinghy vehicle. Unlike your first bike, however, this one has front and rear hand brakes instead the ol’ coaster brake. It’s most practical for cruising around flat, paved roads. Regular price: $204.99, sale price: $129

Adventurer Six-Speed Folding Bike

For more ambitious rides, consider the Adventurer six-speed folding bike. Like the single-speed model, it is designed for fast setup with quick-release clamps on the handlebars and seat post, as well as a folding

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hinge in the frame. The handlebars and seat are adjustable, and shifting is performed via the handy twist-shifter on the right-hand grip and a Shimano derailleur. Braking controls are right at your fingertips as well. Even with the added features, this bike is only a few pounds heavier than the single-speed model at 37.7 pounds and folds to the same dimensions. Good for flat roads with some minor grades. Regular price: $229.99, sale price: $149.97

Adventurer 12-Speed Folding Bike
Half the size of the 10-speed you used to “borrow” from your older siblings, this diminutive cruiser actually packs two more speeds for a bike that bridges the gap between campground runner and road bike. Ready to ride in less than a minute, this bike features quick-release clamps on the handlebars and seat post, and a hinge in the top tube. However, where the single- and six-speed bikes have 20-inch wheels, this one boasts 22s, as well as a thickly padded 8½-inch-wide seat for more comfortable riding. As a result, it’s a little larger than its siblings at 35 inches long by 16½ inches wide by 30 inches high but weighs the same as the six-speed version at 37.7 pounds. A twist-grip and Shimano derailleur handle the shifting duties, and hand brakes help bring the rider to a safe stop. This is the best bike for those who want to venture out of the RV park and tackle longer journeys by bike will enjoy the versatility of the 12-speed gear set.
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Sleeker Slide Topper hardware comes in polar white, black, silver or champagne colors.

Adventurer Three-Speed Folding Trike

Maybe what you need is a little extra stability in your life. If so, check out the Adventurer folding trike. This three-wheeler features a large cargo basket so you can carry groceries, supplies or your pet, and a thumb shifter lets you select gears effortlessly. Braking is controlled by a motorcycle-style drum brake with a hand lever on the front and a coaster-style brake on the back for smooth, easy stops.

Though not lightweight at 50 pounds, it does support up to 250 pounds of rider and folds to 36 inches long by 29½ inches wide by 29½ inches high. The handlebar and seat height can be adjusted for riders short and tall, and the wide, padded seat is designed for hours of comfortable riding. All-weather durability is ensured by a red powder-coated finish that resists corrosion and 20-inch all-surface tires mounted on rugged alloy wheels. Once you get the hang of making turns, the ride is fun. Regular price: $439.99, sale price: $369.97

Above from left) Trikes make it safe for those who may be uncomfortable balancing a two-wheeler. The seat is big, the handlebars can be adjusted for easy reach, and the wire basket will hold a lot of stuff. It takes some time to learn how to turn without wandering, but after acclimation, this folding trike is not only a kick to ride but easy to store.

Regular price: $249.99,
sale price: $159.97

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Being able to regulate interior temperature is perhaps the single most significant thing separating RVs from more rudimentary forms of camping. The humble thermostat, strategically placed in the living area, helps keep the interior comfortable, allowing us to focus on recreation rather than just staying warm. Until fairly recently, RVs came with mechanical thermostats, but these are gradually being phased out in favor of the more accurate digital thermostats. The good news is, upgrading to a digital model is a relatively simple do-it-yourself project that greatly improves furnace function.

A little history: For some 35 years, forced-air furnaces received the signal to operate from a simple mechanical wall thermostat (T-stat) that contained a set of points and a bimetal spring sensitive enough to recognize room temperature fluctuations. Although not very accurate, they did get the job done. A few years later, a heat anticipator was added and fine-tuned to manufacturer’s specifications. The purpose of this add-on device was to make the T-stat less sensitive to fluctuations when temperatures hover around the set point.

The LuxPro model PSD010BF is a simple two-wire digital thermostat that’s available for a reasonable price and can be used in most furnace applications.

Replacing an old mechanical wall thermostat with a digital model improves furnace efficiency.

OLD-SCHOOL TECH

Basic mechanical thermostats with the heat anticipator are durable but not extremely accurate and are easily replaced with a LuxPro thermostat.
with slide switches and a bimetal temperature sensor. This design was not without its drawbacks, but these thermostats were convenient. Advancements in technology have led to digital thermostats in RVs, which are much more accurate in regulating temperature.

Digital thermostats are quite simply an on/off switch face that includes a readout. Temperatures are sensed via a thermistor that signals micro switches to open and close. Swapping out that old mechanical thermostat is a highly effective way to regulate interior comfort with controlled cycling and temperatures.

Technically, short cycling of the furnace should not be an issue when controlled by a digital thermostat, but placement of the thermostat can be critical for the optimal performance of a forced-air heating unit. Unfortunately, wall space is often limited in an RV, and, as a result, thermostat placement is not always perfect. It’s not uncommon to find the thermostat on an interior wall within a few feet of a heat register, for example. With the heat blowing directly on the thermostat, a false reading can cause the furnace to shut down prematurely. Moving a dual-control thermostat to a different location is not much of an option, largely due to the complex wiring harness. Perhaps more important, digital models offer more precise control, and users can learn to compensate for less-than-optimal locations.

Adding a heat-only thermostat to the existing dual thermostat will give you the option of relocating the secondary thermostat to a more efficient location and allow much better control of warm air. We did this using a LuxPro model PSD010BF heat-only thermostat with fan control, available on Amazon for about $28.

Before you dive in, you need to determine suitability and choose the right thermostat. A direct replacement is always the safest option, so first check with the manufacturer of the particular furnace to find out if a digital furnace thermostat upgrade is available. Also, keep in mind that not all air-conditioning/furnace thermostats can be changed to an aftermarket digital model. Check with a certified technician or the manufacturer of the air-conditioner/furnace to determine if command functions can be added.

### Wired for Heat

Basic schematics for two popular mechanical (analog) thermostats:

<table>
<thead>
<tr>
<th>Coleman/RVP</th>
<th>Duo-Therm</th>
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<tbody>
<tr>
<td><strong>RED</strong></td>
<td><strong>GREEN</strong></td>
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<td><strong>GREEN</strong></td>
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<td><strong>BLUE</strong></td>
<td><strong>RED</strong></td>
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<td><strong>YELLOW</strong></td>
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<td><strong>WHITE</strong></td>
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**CAUTION:** Making changes to any wiring can be dangerous and can cause multiple failures. Recognize your skill level, and if you are not experienced with this type of project, use a qualified technician.
THE HEAT IS ON

Not all manufacturers adhere to the basic wiring schematic. Have a qualified technician perform any unfamiliar wiring tasks. Wire nuts are not the best option for making wiring connections to the thermostat. Use the proper size butt connectors; they won’t fall off and disappear into the wall space.

occur inside the thermostat itself and that they are basically an on/off-type system. A 24- or 48-volt digital model thermostat with battery backup can be used in this case.

Installation
Disconnected the RV house battery or pull the fuse before starting this project. Determine a suitable location for the new thermostat, whether replacing the existing thermostat or adding a heat-only thermostat nearby. We wanted to add the new digital thermostat to the existing digital factory unit, and after testing several locations, we decided to install the LuxPro thermostat on an interior wall in the bedroom. This was due to the fact that the original T-stat was installed within 3 feet of a heat register, and, as a result, the furnace kept short cycling.

Next, we cut the wire that runs from the original thermostat to the furnace. In this case, it was the cold side of the two blue wires that ran to the furnace. We then attached the wire from the original thermostat to the R terminal...
and the wire that runs to the furnace to the W1 terminal on the LuxPro. Once this was done, the temperature on the original thermostat was set to 80 to 85 degrees in the heat position. The new thermostat is now used to control the furnace temperature.

When replacing a heat-only mechanical-style thermostat, place the positive blue wire to the R terminal and the other blue wire to the W1 terminal on the LuxPro digital thermostat. Home-style digital thermostats will run exclusively on the back-up batteries, AA or AAA size. With high-quality batteries, the thermostat will run approximately two years (depending on the amount of use) before battery replacement is necessary.

OEM dual thermostats can be very expensive. An alternative such as the Honeywell model RTH111B1016 or any nonprogrammable model can be substituted with a little ingenuity. Replacing a dual air-conditioner/furnace thermostat will be a bit more of a challenge, especially in the wiring department. Before attempting such a project, it’s not a bad idea to take a picture or draw the wiring schematic on a piece of paper before removing the original T-stat. This will give you the option of referring back to the original wiring schematic should it be necessary. Keep in mind that some manufacturers extend the wiring harness using their own color schematic. You will have to convert these wires to the correct color code. Also, remember that this conversion will not work for all dual thermostat systems, so check out specs carefully.

Most household-type thermostats will have only a single fan-speed position (high) because a two-speed fan is not necessary for home use. Should you desire two-speed fan operation, you will need to install a double-pole, double-throw micro switch to the side of the thermostat. Then adding a switch to the new digital thermostat that is replacing the Coleman/RVP unit, you will need to connect a jumper wire from the G terminal on the new thermostat to the center of the double-pole, double-throw switch. The existing green and gray wires go to the other two poles on the switch. Also, most new digital thermostats will require a little bit of setup internally via positioning of DIP switches. If the new digital thermostat has a Centigrade/Fahrenheit option, select the Fahrenheit position. If the furnace has an HG/HE option, select the HG (gas) position. Once done, test all functions for accuracy.

Keeping up with modern electronic advances can be a challenge, but it’s definitely worth the trouble. For example, 20 years ago, who would have thought an iPad or a computer could control the electronics in an RV? It’s hard to imagine what will be next. With simple upgrades such as a new digital thermostat, you can enjoy modern technology without burning up your budget.
Winegard makes it easier to tune in to digital and HD broadcast TV with its state-of-the-art automatic amplified broadcast dome.

“Free TV” has a nice ring to it. The idea of receiving local programming via over-the-air broadcasting is appealing to those who prefer not to incur a monthly service charge for watching TV. Many RV parks offer cable-TV hookups, but the signal could be coming from a far-off location and be void of local programming, which is useful when in unfamiliar places. Once the feds mandated that all TV broadcasters convert to a digital signal in 2009, the paradigm changed for the better — a lot better.

High-definition programming is now the norm, and most owners rely on batwing antennas to pull in the signals. While that works OK, and a few other suppliers offer more sophisticated antennas, Winegard has taken this segment to the next level with its new Rayzar Automatic Amplified Broadcast HDTV Antenna.

The Rayzar Automatic looks like a mini-satellite dish and works using similar principles. It employs state-of-the-art electronics to bring in the most channels. For example, it’s easy to find a signal or two using just about any antenna, but the Rayzar computes the best antenna position to bring in the highest number of signals automatically. And it’s designed to bring in signals that are more distant. It has an ultralow noise amplifier to boost signal strength, resulting in minimal picture pixelation.

When a search is initiated, the antenna rotates automatically in a direction that allows for the most channel availability. It typically takes around two to three minutes to go through the search process, and when the optimum number of TV frequencies is found, a figure will show up.
on the display screen. From here, a scan is initiated in the TV, which will determine how many stations can actually be viewed. The sub channels affect this process, and the frequency figure on the display screen will likely be different from channels that are watchable.

During our test, we positioned the RV in a location where we knew it was difficult to receive broadcast signals. The readout showed 20 frequencies, but only six channels were watchable. Those channels were crystal clear, and the picture was HD quality. One of the channels was pixelating a little, so the manual control was used to move the antenna slightly and fine-tune the signal. Pushing the Search button again returns the antenna to the Automatic Search Mode.

Once we relocated to a more populated area, the frequencies were vast, with dozens of channels to watch.

The control panel, which replaces an existing batwing antenna counterpart, is loaded with features to keep the user informed of available frequencies and antenna positioning. Red and green LEDs indicate antenna position and will blink when the antenna is rotating. The on/off button has the same function found on batwing antenna controls, activating the amplifier, which will lock out the cable signal when on.

Winegard specifically designed the aftermarket kit to retrofit existing batwing antennas. Included in the box is all the necessary hardware to plug any holes left by the batwing antenna; there’s even a ceiling plate to cover the hole vacated by the old antenna crank-up mechanism. The intention of the installation design is to remove the existing antenna and place the new dome in the same location. A roof plate handles the modifications up top. But that may not be possible, as we found out. There are very specific instructions for locating the dome, and it must not be farther than 30 feet from the control panel (a 20-foot coaxial cable is included and recommended for optimum performance) and have the necessary clearance from the front and side of the RV roof. In our case, we needed to move the dome away from the original location to meet these requirements, which was easily accomplished but left the roof plate exposed — not a big deal.

In the end, the dome sits nicely on the roof and has a low enough profile so it looks integrated into the design of the RV. Performance and ease of use are exceptional, and there’s no risk of leaving a batwing antenna up when on the road. Available at Camping World, the Rayzar has a $399 MSRP and comes in black or white.

Here’s how the installation went:

1. The original crank mechanism in the ceiling is removed, exposing a rod, which will pull out with the batwing antenna body.
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[2] The existing control panel is removed from the ceiling or wall, [3] exposing the coaxial cables and power wires. [4] To make life easier, painter’s tape is used to mark the coaxial cables and power wires after identifying and removing them from the existing control panel. [5] Sealant must be peeled off the batwing antenna base before removal. A sharp putty knife makes the job a little easier, but use caution not to cut into the roof, especially if it’s rubber.
[6] Once the old putty is cleared from the base of the batwing antenna, the screws are removed. Using a screw gun facilitates this process. [7] The batwing antenna should peel off the roof easily, but use caution not to lift the rubber membrane, if so equipped. Pull up the base to clear the inner rod from the hole in the roof. [8] The existing coaxial cable is disconnected from the batwing antenna, which is removed from the roof at this point. [9] Choosing a location for the dome requires a few measurements. The dome requires a minimum of 18½ by 18¾ inches of space for the installation. It needs to be 12 inches from the edge of the RV and at least 24 inches from the front, and clear of nearby obstructions. [10] The roof plate is positioned over the hole used to mount the batwing antenna. In a perfect world, the new dome can be placed over this plate, but in our case, the required clearances would not allow for that positioning.
[11] Rubber-roof lap sealer is applied to the back of the roof plate. Make sure to use the proper sealant for the type of roof material. [12] The roof plate is screwed down onto the roof after routing the connecting coaxial cable from the control box. In this case, the original cable was long enough. [13] Once the roof plate is screwed down, a line of lap sealer is applied to the edges and over the screw heads. Lap sealer will fill in openings and surfaces that are not level. Control the bead and don’t over-apply the sealant. [14] After positioning the dome at its permanent location, make sure the coaxial-cable connection is facing the back of the RV. In this case, the dome was placed next to the roof plate.

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[15] Mounting the dome to the roof is a simple process. Mark the location of the feet and move the dome to the side to apply lap sealer on the area. Carefully place the dome’s feet over the sealant and attach to the roof using the provided screws; apply sealant around the edges on the screw heads.

[16] The ceiling plate does a nice job of covering the hole left by the batwing antenna crank mechanism. [17] Previously marked coaxial cables and power wires are connected to the Rayzar control box. In this case, the original batwing antenna was not a Winegard brand unit, but the wiring was similar. [18] The final step is installing the Rayzar control box in the same location as the original panel. The new box will easily cover the hole in the wall or ceiling.

Winegard
800-288-8094
www.winegard.com/rayzarauto

[15A] move the dome to the side to apply lap sealer on the area.

[15B] Carefully place the dome’s feet over the sealant and attach to the roof using the provided screws; apply sealant around the edges on the screw heads.

[16] The ceiling plate does a nice job of covering the hole left by the batwing antenna crank mechanism.

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**Ferociously Strong Stuff**
It’s often been said that you can fix anything that goes wrong on the road with duct tape and bailing wire. That might be an overstatement, but there’s no denying the value of good heavy-duty tape. T-Rex tape from ShurTech Brands is manufactured using a technology called co-extrusion, where the tape’s aggressive adhesive is melted and pressed through a high-tensile woven fabric and into a molten polyethylene skin using heat and pressure to lock the layers together. The result is what the company calls “ferociously strong tape” offering four times the staying power of standard duct tape, three times the holding power and two times the bite of other tapes, even on rough and dirty surfaces, according to the company.

**MSRP:** $7.84/35-yard roll at Walmart
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**Shockles with Muscle**
The mobile nature of the RVing lifestyle frequently calls for strapping stuff down, but sometimes you need more than just a common bungee cord to feel confident your belongings will stay secure. The, uhh, interestingly named MiniShockles from Davis Instruments are made from durable black nylon webbing sewn over a marine-grade elastomer, with a 316 stainless-steel wire gate snap at each end. Boasting a safe working load of up to 300 pounds, or 10 times the capacity of a standard bungee cord, according to the company, MiniShockles are easily opened with one hand, and the soft, rounded edges help protect fingers. MiniShockles are available in 12-, 18- and 24-inch lengths. The company calls them “A bungee cord on steroids.”

**MSRP:** $13.99 to $15.99
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**Tent Amping**
Most of the time when we use portable generators, we’re camping in good weather. But have you ever thought about using it in driving rain or even snow? Odds are, your idea of protecting it under these conditions is putting it underneath the trailer, but this can allow poisonous carbon monoxide to enter your living space. GenTent Safety Canopies help solve this problem by making the generator virtually weatherproof. As the name implies, GenTent is an application-specific mini-tent that goes over a portable generator, protecting it in wet weather from any angle, according to the company. Simply clamp on the base, attach the frame and cover it. GenTent Safety Canopies are available for all popular portable generators, and they’re made in the USA.

**MSRP:** Starting at $199, 781-336-8368, www.gentent.com
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**PRODUCT SPOTLIGHT**

**Tent Amping**
Most of the time when we use portable generators, we’re camping in good weather. But have you ever thought about using it in driving rain or even snow? Odds are, your idea of protecting it under these conditions is putting it underneath the trailer, but this can allow poisonous carbon monoxide to enter your living space. GenTent Safety Canopies help solve this problem by making the generator virtually weatherproof. As the name implies, GenTent is an application-specific mini-tent that goes over a portable generator, protecting it in wet weather from any angle, according to the company. Simply clamp on the base, attach the frame and cover it. GenTent Safety Canopies are available for all popular portable generators, and they’re made in the USA.

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**Turbochargers**

Turbochargers have revolutionized the towing of heavy trailers arguably more than anything else. These relatively simple devices dramatically increase the engine’s volumetric efficiency, and therefore power output, by taking advantage of exhaust energy. First, they were universally adopted in the trucking industry for big-rig diesels, then more recently by manufacturers of light diesel trucks.

A turbocharger (frequently called a “turbo”) increases power by pumping additional air into the combustion chambers of an engine using an exhaust turbine and a compressor wheel, usually connected by a common shaft. Naturally aspirated (non-turbocharged or supercharged) engines rely on atmospheric pressure to push air into the combustion chamber. This limits the amount of air that can be drawn in and therefore limits power potential.

By forcing more air (and proportionately more fuel with proper controls) into the combustion chambers, dramatically more torque and power can be produced. This is especially true at higher elevations, as air density drops. Turbocharged engines can maintain power outputs similar to sea level performance at altitudes of 10,000 feet or more. Without turbocharging, diesels, especially at high altitude, are typically sooty, smoky and underpowered.

**Background**

In the early days, turbochargers were often called “turbo-superchargers” at a time when all forced-induction devices were lumped together as superchargers. The essential difference between a turbocharger and a supercharger is that a turbocharger is driven by a turbine spun by the engine’s exhaust gases, while a supercharger is mechanically driven by the engine via gears, shafts or a belt.

Turbochargers tend to be more efficient but less responsive, compared to superchargers, which provide near-instant response. To combine the advantages of both types, some engines have “twinchargers,” using both a supercharger and a turbocharger, but this is complex and expensive, and is not commonly used.

Turbocharger outlet air temperature is cooler and therefore denser than the air produced by a supercharger, creating more power potential. Turbochargers often develop 15 to 30 percent greater horsepower because of their greater adiabatic (thermal) efficiency than superchargers. However, they do still add considerable heat (see “Intercooler” below).

A turbocharger doesn’t put a direct mechanical load on the engine, although it does increase exhaust backpressure, which raises pumping losses somewhat. Still, turbos are more efficient than superchargers, because much of the energy that spins the turbine comes from still–expanding exhaust gases that would otherwise be wasted as heat energy out the exhaust pipe.

The main operational downside of turbocharging is lag time (also known as “turbo lag” or “boost lag”), which is the delay between the accelerator pedal being pressed and the time it takes for the turbocharger(s) to spool up and provide increased boost. Below a certain flow rate, a compressor develops insignificant boost. Lag occurs because a turbocharger requires exhaust gas pressure to spin the turbine.

At low rpm and low throttle settings, there’s insufficient exhaust pressure to spin up the turbine. The turbocharger’s boost threshold is the lower portion of the compressor’s operating range. Only when the engine reaches sufficient speed does the turbine section start to spin fast enough to develop intake-manifold pressure (boost). Boost pressure may be monitored on a dashboard gauge, usually displayed in pounds per square inch (psi) or metric BAR units.

Turbocharging works on gasoline and diesel engines, and both types of turbocharged engines are gaining popularity due to upcoming stricter fuel economy standards. However, turbodiesels have some advantages over gas models. Turbocharging a gas engine generally raises its octane requirement, because the resulting higher cylinder pressures can lead to detonation on lower-grade fuels. Newer engines have sophisticated systems in place to prevent engine-damaging detonation, but if the recommended octane isn’t used, the engine’s performance potential cannot be fully realized. Increasing combustion temperatures also raises the amount of nitrogen oxides in the exhaust, which is a regulated pollutant and must be controlled.

Because diesels essentially function on controlled detonation, they generally still work fine on the same cetane-rated fuel as before. Diesels also tend to burn their fuel more completely with turbocharging, which reduces soot and particulate matter in the exhaust.

**Types and Sizing**

Turbocharger output and performance are closely related to size, and there’s always a trade-off. Turbine housing and wheel sizes determine the amount...
of air and exhaust that can flow through a system and its operating efficiency. Generally, the larger the exhaust turbine wheel and compressor wheel, the greater the flow capacity — but larger turbochargers also require more exhaust pressure to spin their turbines and therefore create more low-speed lag. Smaller turbos spin up more quickly but don’t deliver as much airflow during higher-RPM acceleration. To combine benefits of both kinds, various designs, including twin turbochargers, twin-scroll turbochargers and variable-geometry turbochargers, have been developed.

Twin-turbo (also called bi-turbo) installations utilize two turbochargers working either in parallel or sequentially. In parallel configurations, both turbos receive half the engine’s exhaust. These are often installed on separate banks of a V-6 or V-8 engine. With sequential systems, one turbo operates at low speeds and the other comes online at a preset engine RPM or load. Sequential turbochargers reduce lag time but can require complex plumbing to connect both turbos.

Two-stage, variable-turbo installations use a small turbocharger for low RPM and a larger unit for higher RPM. They’re plumbed in series; this way, boost from one turbo is further raised by the other. Exhaust gas routing is continuously variable, allowing smooth transitions from the small turbo to the larger unit. Both turbochargers operate in the midrange, with one feeding into the other, while at higher RPM, only the larger turbo runs. A bypass valve controls exhaust flow to each turbo.

Variable-geometry or variable-nozzle turbochargers are now widely used as original equipment. These units employ movable turbine vanes to control flow into the turbine, allowing optimal efficiency across the power curve. The vane’s angle is adjusted by an actuator to vary airflow to the turbine. This variation helps maintain flow velocity and backpressure throughout the engine’s RPM range, resulting in improved fuel efficiency and reduced turbocharger lag.

Turbonetics, maker of the GT-K turbo shown here, offers a wide variety of custom and standard replacement turbochargers.

**Wastegates**
Boost pressure must be limited to keep the engine components, including the turbocharger, within their mechanical and thermal operating ranges. Over-boosting an engine causes damage, including overheating, overstressing the engine’s internal components and, in gas engines, detonation. To avoid damage, boost pressure must not get too high, thus the pressure at the intake manifold must be controlled.

Opening the wastegate allows the excess pressure headed for the turbine to bypass it and exit into the exhaust pipe, thus reducing boost pressure. Wastegates regulate exhaust-gas flow entering the turbine and therefore limit airflow. The wastegate is used to limit maximum boost and can be controlled by a simple spring-loaded diaphragm, the engine’s electronic control unit or a separate boost control.

**Relief Valves**
Turbochargers operating at full throttle and high RPM pump large volumes of air into the engine. With gasoline engines, when the throttle is closed suddenly, compressed air can “stack” against the closed throttle valve. The sudden surge can raise air pressure high enough to cause damage, including what is known as compressor stalling. This results when the pressurized air flows backward through the impeller and out the inlet.

To avoid this, a pressure-relief valve (also known as a blow-off, anti-surge, diverters, bypass, turbo-relief or dump valve) is fitted between the turbocharger and engine, which vents excess pressure. Air is usually routed back into the turbocharger inlet [with diverter or bypass valves], but can also be vented to the atmosphere (blow-off valve). By recycling the air, the time needed to spool up the turbocharger after deceleration is reduced.

**Intercoolers**
As air is compressed, its temperature rises quickly and dramatically. Hot air is less dense [contains less oxygen] than cooler air, and it also has some serious negative affects when it is drawn into either a diesel or gas engine. Power drops off, and in gasoline engines, detonation can occur. As combustion-chamber temperatures rise to critical levels, pistons can overheat and crack or melt, and valve seats can burn and valves warp.

Intercoolers, also known as “aftercoolers,” are heat exchangers that remove heat from the air after it exits the turbocharger and before it enters the engine’s intake manifold. Newer turbocharged vehicles come with them stock, but the aftermarket also makes larger and more effective replacement units, which provide even more cooling. Additional cooling increases air density and power, while reducing thermal stress on the engine’s internal parts, and is recommended for modified and even stock vehicles subjected to heavy use.

**Operational Tips**
Turbocharged engines, especially modified ones, should have boost pressure and exhaust gas temperature (EGT) gauges. By being able to monitor boost and EGT, the driver can detect problems early and prevent major failures from occurring by intervening right away. Throttle position can be reduced to lower boost pressures and temperatures below critical levels.

Turbochargers spin at extremely high peak speeds; some reach as high as 250,000 RPM, and 150,000 RPM is not uncommon. Their bearings must receive a good flow of oil to survive. Synthetic oil is more resistant to high temperatures than conventional oil and is recommended for turbo use.

Original equipment turbochargers are usually water-cooled via the...
engine’s cooling system. Coolant should be kept fresh and at the proper level, and the correct antifreeze/coolant ratio should be maintained to prevent freezing and ensure the boiling point is high enough.

If an engine is shut off when the turbocharger is too hot, some of that extreme heat is absorbed by the motor oil that is circulated through the turbocharger bearings by the engine’s oil pump. When the oil gets too hot, it begins to break down and carbonize, or form hard carbon “coke” (which comes from coal terminology). These hard particles will quickly destroy bearings.

After a hard pull, the engine should be allowed to idle for several minutes to allow the turbo to cool down and oil to circulate through the bearings. When diesel engines idle, the exhaust cools down substantially. Some engines incorporate a feature that controls the engine idling cool down. If your truck doesn’t have this, an aftermarket turbo timer product can be installed. This allows the engine to idle for several minutes and then shut down after you have left the vehicle.

**Future Technology**

One new technology undergoing development is electrical-assisted boosting, which employs an electric motor to spin the turbocharger up sooner with only available exhaust gases. Another new technology is to separate the turbine and compressor units to create a turbine-generator and an electric-motor-driven compressor. This is called a hybrid turbocharger and allows the compressor turbine speed to be independent of the exhaust-driven turbine speed.

**Hot-Rodding**

There are always folks who aren’t satisfied with the performance of their stock vehicles and want to accelerate and climb hills a little faster (OK, sometimes a whole lot faster). Turbochargers can boost power more than almost any other device, and many aftermarket companies offer custom turbocharger kits that can produce extra boost, volume and power.

It’s very tempting, and substantial improvements in torque and horsepower can be achieved. Just keep in mind that moderation is usually best for longevity and reliability, especially with the extra strain of towing. Also consider the effects of modifications on warranties (if still in effect) and emission controls, particularly in states where smog checks are performed. Products that have a California Air Resources Board (CARB) executive order (EO) number are legal for use in all states on applicable vehicles.

**Sources**

Banks Power/Gale Banks Engineering
800-601-8072, www.bankspower.com

BD Diesel Performance
800-887-5030, www.dieselperformance.com

Turbonetics

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Once upon a time, you could look at a tire and tell that it was running low on pressure. Those days are long gone. Radial construction, combined with stiffer sidewalls means that, by the time a tire looks low on air, it is severely underinflated. As you are probably already aware, just being low a few pounds can result in shorter tread life and reduced fuel economy — but in the case of a truck and/or trailer, which often carries heavy loads, the consequences of underinflation can be far more dire, including a possible blowout and resultant body damage. Keeping tabs on tire inflation pressure values with a gauge is OK while the RV is in a park or storage area, but what about monitoring while on the road? Tire pressure monitoring systems (TPMS) are the answer, of course, but not all of them are created equal and not all are designed for the unique requirements of RV owners. Recently, however, Doran Manufacturing developed the 360RV, its next-generation TPMS made especially for RVs and tow vehicles.

The Doran 360RV is designed to take accurate readings of air pressure at each tire and communicate real-time data to the driver via a dash-mounted monitor. Complete with low-air-pressure alarms, the Doran TPMS is always on call to alert you to a potential problem. This system has multiple visual and audio warnings including a new, fast-leak warning that is triggered when pressure in a tire drops 2.8 PSI in less than 12 seconds. In addition, the high temperature alarm will warn of tire failures, as well as brake shoes that are dragging or a wheel bearing that may be failing.

The Doran 360RV is equipped with an easy-to-read LCD monitor that is roughly the size of a dollar bill. This smart TPMS is outfitted with simple programming to read baseline and current tire pressure and temperature. The Doran is easy to install and offers multiple mounting options by way of its suction-cup base.

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inspect all valve stems and tires thoroughly to make sure they are in good condition. Mounting the sensors on a basic four-tire system should run approximately 35 minutes, but labor time will increase to about 1½ hours with the remote antenna and the hardwiring process of the monitor.

The first part of the installation requires mounting the monitor and plugging it to a 12-volt DC accessory outlet, then following the directions for programming each sensor in the desired tire position (right front, left front and so on). Write the sensor numbers on a piece of paper with the corresponding tire position diagram. Once the programming is complete, the sensors can be installed. Be sure that each tire sensor and tire match the diagram of the wheel positions on the monitor once installed.

Doran designed its durable tire sensors with a three-piece seal that will minimize the potential for air leaks. Each tire sensor is secured with an adjustable locking ring, and the valve stem inserts can be changed, if necessary, to keep the sensors from leaking. An included tool can be used to gauge insert depth and make sure the sensors will seal properly. After installation, the sensors should be checked with soapy water to confirm there are no air leaks.

There are multiple optional accessories available through Doran, including a remote antenna to extend RF signal reception, and flow-through valve stem extensions and adapters that will eliminate the need to remove the sensors when adding air to the tires.

We installed the optional remote antenna kit on the test truck. In doing so, the signal reception of the RF (radio frequency) is moved to the rear of the truck, improving the reception of the wheel sensors’ signals. The

[Above from left] Doran’s testing tool takes the guesswork out of proper installation, allowing the user to achieve optimal signal from each sensor. The windshield-mounting kit features replaceable suction cups specifically designed to fit multiple angles.

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[Above from left] Doran’s testing tool takes the guesswork out of proper installation, allowing the user to achieve optimal signal from each sensor. The windshield-mounting kit features replaceable suction cups specifically designed to fit multiple angles.
antenna option is imperative for long trailers, where the RF signal has a much greater distance to the monitor. Find a suitable location for the remote antenna, install the bracket and route the coax cable along the frame and through the firewall to the monitor. The coax cable will attach to the monitor in place of the supplied short antenna.

The test trailer tires were set at 80 PSI. Driving approximately four hours in 45-degree weather, we saw that the pressure rose roughly 6 to 8 PSI in each tire. The pressure from the base number will rise more in higher ambient temperature.

One week later, we checked the cold pressure in all the tires to be certain there were no air leaks by simply turning on the ignition and checking the monitor. If there had been a tire with low pressure, the Doran 360RV monitor would have alerted us. Pressures were checked against the readings from a manual gauge, to confirm accuracy.

Once you go back to the manual gauge for checking each tire, you’ll quickly realize the value and convenience of a TPMS. By adding a TPMS to your RV, you are also installing safety and peace of mind. The Doran 360RV retail for $499.99 and comes with a two-year warranty.

Doran Manufacturing LLC
866-816-7233
www.doranmfg.com

Doran TPMS Sensor and Monitor Specifications:

<table>
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<tr>
<th>Specifications</th>
<th>Details</th>
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<tr>
<td>Sensor Dimensions</td>
<td>1.31” W x 1.16” H</td>
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<tr>
<td>Sensor Pressure Range</td>
<td>10 to 188 psi +/-2 psi over operating pressure range</td>
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<tr>
<td>Monitor Dimensions</td>
<td>5.7” W x 2.16” L x 1.1” D</td>
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<tr>
<td>Fast Leak Alert</td>
<td>2.8 psi drop within 12 seconds</td>
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<td>High Temperature Alert</td>
<td>175 degrees F</td>
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<tr>
<th>Model</th>
<th>TV</th>
<th>Computer</th>
<th>Coffee Maker</th>
<th>Small Microwave</th>
<th>Electric Fry Pan</th>
<th>Small Heater</th>
<th>Large Microwave</th>
<th>Fridge/Freezer</th>
<th>Air Conditioner</th>
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**RV CLINIC**

**SPARKING BATTERY SOURCE**

Q In February’s “Mystery Power Draw” RV Clinic letter, John Kester had questions about seeing and hearing a spark when he reconnects his battery lead. I had a 2008 Forest River Rockwood with the WFCO power converter. I discovered the converter has capacitors in the electronic circuit. These discharge over time when the battery is disconnected.

When John reconnects the battery lead, these capacitors draw a momentary current that causes the little spark he sees and hears. I found the same spark when I unplugged either of the two 40-amp fuses found in the top center of the fuse board. These are safety fuses that blow in case a battery is connected with reverse polarity.

My solution and recommendation to John and many other folks is to install a battery-disconnect switch. This will save the battery(ies) from gradual discharge by those phantom loads found in all RVs.

**Danny Dobson**

Louisville, Kentucky

A Installing a battery-disconnect switch is one of our standard answers for solving a battery-drain-in-storage problem. Thank you for sharing your note about the capacitors in the converter. — J.J.

---

**SHAKY TRAILER BRAKES**

Q I purchased a 2014 Shadow Cruiser 313BHS late last summer. I have found that the trailer brakes do not seem to have enough braking force.

**Tim Sielaff**

Forestville, Michigan

A You’re right, Tim. Grease saturation can make the brakes ineffective. You can easily check to verify the grease theory by removing a wheel and drum to see if everything’s clean inside.

Given that your trailer isn’t very old, I’d look elsewhere for the problem — and I’d start with the Suburban’s gain setting on the integrated brake control. Gain is the adjustment that regulates the maximum voltage that’s sent to the brakes, and they drag slightly. With the wheel raised off the ground, the wheel stops rolling when the brakes are applied. However, the trailer can still be pulled forward at engine idle, even with the emergency brakeaway cable pulled. I suspect that either the wires are undersized or the brake shoes are saturated with grease. Any suggestions would be helpful.

— Jeff Johnston

---

**TOWING IN REVERSE**

Q I have a 2005 Dodge Ram 3500 longbed 4x4 with a 5.9-liter diesel engine, a 48RE automatic transmission and single rear wheels. I tow a 33-foot fifth-wheel that weighs approximately 11,000 pounds loaded.

When I back up on level ground, it does fair. When I try to back up a 5 percent grade (the grade I have in my yard to garage my trailer) or steeper, I get a torque converter stall and a transmission fluid heat-up alarm. The local Dodge service department says this is normal. If this is a true statement, then maybe Trailer Life should test trucks (Ram, Ford, Chevy, etc.) in reverse on a grade also. If you cannot back up your RV, why have the truck?

**Emil Zgabay**

Adkins, Texas

A A truck should be able to move its rated load in reverse, Emil, but many owners of these trucks have cited a torque converter that feels “too loose” (has too high of a stall speed for the application). BD Diesel Performance and other companies offer “tighter” torque converters that remedy this issue. You did not mention if your driveway is curved or not, but if it’s straight or slightly curved, you might consider backing up in 4WD low range, which will take advantage of torque multiplication and let you move the trailer into its spot very easily. — Jeff Johnston
should be able to stop the truck and trailer with the manual-application brake lever. The trailer brakes shouldn’t lock up but just draw the combo to a stop. This may take some trial and error to find the right setting. If it doesn’t work with the gain set at 100 percent, move to the next step.

To check for wiring flaws, turn the gain all the way up and have a helper apply the manually activated emergency brake lever. In a process of elimination, use a multimeter to check the voltage in the power wire at the brake magnet. With the gain up, the voltage should be in excess of 12 volts. If not, check the main power line where it meets the axles and is distributed to the drums. Next, move to the front of the trailer and check the voltage at the plug. If you find good voltage, the problem lies “downstream” from that point, and you have something wrong in the wiring, either a faulty ground connection, bad power wiring with a faulty connection or some such defect. Inspect the wiring and you may well find your problem, which can then be repaired. — J.J.

**REFRIGERATOR FANS REVISITED**

Q I have a 2013 Evergreen Bay Hill fifth-wheel with a double-door Norcold gas/electric refrigerator in the streetside slide. I read the two “Refrigerator Fans” letters in the April 2015 RV Clinic regarding refrigerator cooling fans. While I feel that the refrigerator works OK, the cabinets around it stay pretty warm. I removed the upper vent door to see if there was a fan, and to my surprise, two-thirds of the opening is covered by a piece of paneling. Is this normal, or should I remove it and install an aftermarket fan?

Don Frank, Phoenix, Arizona

A If the vent opening is partly blocked by a type of wallboard or paneling due to some “misunderstanding” at the factory, that could cause a reduction in refrigerator performance. The fridge vent door opening has a specified square-inch dimension, per the fridge manufacturer, to provide a certain amount of airflow, and if that airflow is partially blocked, it’s going to harm performance. I’d start by talking to your dealer about the situation and see if you can get them to perform the modification to make it right. If you feel comfortable with such projects, be sure to check for wiring or plumbing behind the area you’ll be cutting.

Absorption refrigerator cooling fans are optional and not required to make the unit perform as it should. Some manufacturers install them at the factory because they designed the cabinetry or located the refrigerator in such a way that cooling airflow is not up to manufacturer’s specifications. If the refrigerator works OK as is, you don’t need one, but it sure can’t hurt if you do choose to install one. — J.J.
I read the "Refrigerator Fans" letters in April’s RV Clinic, and they caused me to again contemplate something I’ve often pondered.

My fridge is on the totally exposed road side of my camper, and at many campsites it gets full sun for a good portion of the day. I’ve thought about making a fabric sun blocker, the same size as [or slightly larger than] the exterior fridge panel. I envision it being mounted about an inch [maybe 2] out from the wall and removed for travel. While blocking the direct sun, it would still fully allow air to flow through the panel’s vents.

Is this a good idea and would it be beneficial [or potentially harmful] to the efficiency of the refrigerator?

Michael P. Gleason, Bangor, Maine

Your idea sounds perfectly plausible. Absorption or compression, the cooler a refrigerator’s environment, the better it’s going to perform. A portable shade seems like a great way to help keep your fridge operating in top shape. As long as you leave enough space between the shade and the RV side wall for air circulation as you intend, it should be fine. — J.J.

HITCH-WEIGHT CALCULATIONS

When a manufacturer, specifically Forest River, determines the hitch weight of a trailer, are the propane cylinders installed and filled and a battery installed? The weight of these two items alone could add 100 pounds to the weight. Are those weights also taken into consideration when determining the gross weight of the trailer? The only thing documented on my Forest River trailer is the deduction of a full tank of freshwater from the cargo weight. Love your magazine for RV Clinic alone, but the rest is pretty darn fantastic as well.

Tom Poe, Finksburg, Maryland

Thank you for the kind words, Tom. Most trailer manufacturers measure the unit’s weight without the propane cylinders filled or battery aboard, just as they leave the freshwater tank empty, and in some cases, the weight...
also doesn’t include certain options they install. At best, a manufacturer’s posted weight figure is just a guideline or starting point when making your tow rig and trailer setup calculations.

If, for example, the trailer has a 6,000-pound gross vehicle weight rating (GVWR) and the manufacturer says it weighs 4,500 pounds dry and empty of cargo (leaving an alleged 1,500 pounds of payload capacity), you should add the full propane cylinders and battery weight to that base figure, as well as the freshwater weight. The hitch weight will definitely be boosted by the battery and LP-gas weight. Better yet, take the trailer to a certified scale to determine its actual weight, and you’ll know exactly where you stand. — J.J.

**EMPTY OR FULL WATER TANKS?**

Q My wife and I are fairly new to RVing. We recently traded in our 2014 Coachmen 27-foot motorhome for a 2015 Grand Design Solitude 37-foot fifth-wheel. A few days after the purchase, we were talking to one of the salesmen and were told that we should make sure all water tanks were empty when traveling or risk damage to the tanks. I asked what we should do if we were going dry camping. He said to try to find somewhere close to the campground to fill up. For some reason, this does not sound right. Is it safe to travel with water in the freshwater tank?

James Holliday, Sebring, Florida

A Just when you think you’ve heard it all, something like this comes along. There is no danger to your freshwater tanks if you travel with them full or semi-full of fluids. That salesman could have been concerned that, with the fresh and waste tanks full or partly full, the trailer could be overloaded by exceeding its gross vehicle weight rating (GVWR), in the event it has a minimal cargo capacity in addition to its wet, loaded weight. You can check that by taking the trailer to a certified scale and weighing it, wet and fully loaded for the road, and comparing that figure to its GVWR. And use your
fluid tanks on the road; that’s what they’re for. — J.J.

**SUMMER RV STORAGE**

We are planning to leave our 2014 40-foot fifth-wheel in Apache Junction, Arizona, for the summer. What plans should we make to keep it from getting too hot? We have the wheels covered, but should we cover the two air conditioners? We plan to spray conditioner on the slideout seals and put the slides in. We will also put water containers inside so it will not get too dry. High temperatures can range from 100 to 115 degrees Fahrenheit here in the summer. Could you advise us about anything else we should do?

Dennis and Rosemary Howard
Buffalo, Missouri

A You’re taking the right steps, and one more item would be to use a fitted RV cover on the trailer. A good quality RV cover will shade the trailer from direct sunlight and provide some small degree of insulation. The trailer will still get hot, of course, but the cover avoids having the skin, window and door seals, plastic A/C covers and the like exposed to direct sunlight. Be sure to leave roof vents and some windows open a bit to provide air circulation. That’s about the best you can do under the circumstances. — J.J.

**RV WIND RESISTANCE**

I have been a Trailer Life subscriber for about three years, and I have never seen an article about methods to reduce wind resistance on travel trailers. I just finished a trip from Kentucky to Arizona and back, and could not help noticing how much the 18-wheelers have been doing to reduce their wind resistance. They have rear fairing arrangements and even fairings under the body of the trailer.

There must be a way for us to capitalize on that research and add a fairing of some sort to our trucks that would help the air move more smoothly over our travel trailers, and even a way to attach some type of fairing on the rear of
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Black-Tank Dumping

We have a 2013 30-foot fifth-wheel Keystone Montana Mountaineer. I have a hard time dumping the black-water waste tank, even when the trailer is level. The first few times it took more than an hour. I had to beat on the drain-pipe to get it to drain. Then I found if I raised the front of the fifth-wheel 6 to 8 inches, it dumps much easier but causes extra wear on the landing gear. So I had a septic company send a camera through the line and tank. There were no clogs, but when the camera entered the tank, it dropped down, meaning the bottom of the tank is lower than the drain. I contacted the dealer where I purchased the fifth-wheel, and they said they had never had the problem. I tried to contact the manufacturer concerning my problem and got no response.

Homer Rhodaback, Waldport, Oregon

The drop-down discovered in your tank plumbing is odd, Homer, since most waste holding tanks are designed with a lowered area with the drain plumbing.
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RV CLINIC

(continued from page 138)

attached at the lowest point. The way such tanks are usually built into an RV makes replacement an expensive and complex process, although it can be done if absolutely needed. Many such tanks are large and flat to fit between the frame rails, and that doesn’t help the waste flow any. Rather than use your landing-gear jacks, you may choose to run the tow vehicle’s rear tires up on some leveling blocks to raise the trailer’s front end during dumping.

It sounds as if you didn’t have enough water in the tank in addition to the waste solids. That can cause slow or incomplete draining in even the best waste-tank plumbing setups. As a workaround, you can try adding freshwater to the tank until it’s nearly full, then dump it, and the extra volume of freshwater will help flush it clean. — J.J.

SLIDEOUT SEALS

Q In the March RV Clinic letter “Slideouts…Don’t,” you gave Frank Guinan several tips on his RV’s slideout problem. One of those tips was to clean and lube the slideout seals. How do you clean the seals, and what lubricant would you use?

Tim Rodkey, Clearfield, Pennsylvania

A The type of cleaner needed depends on what type of dirt is getting on the slide seals. If it’s just dust, a universal cleaning product would be sufficient, but if it’s tree sap, for example, you’ll need to get a stronger cleaner to remove the pitch. I’d start with Simple Green or another mild spray-on product, and, if needed, use something like Fantastik spray cleaner. For slideout seal lubrication, avoid any petroleum-based product. Protect All, Camco, 303 Aerospace and a number of other companies offer slideout care kits and sprays, which are available at Camping World and other sources. — Ken Freund

DISCONNECT SWITCH

Q We own a 2014 travel trailer that has a battery-disconnect switch.

(continued from page 138)
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When I pull the switch out, the battery is in use. Pushing it in disconnects it. My question is, do I keep the switch in when plugging it in at a campsite or at my home?

Tom Watson, Phoenix, Arizona

The battery acts to stabilize system voltage and absorb alternating current “ripples” that get through the power converter into the 12-volt DC system. This helps protect circuit boards and reduces hum in audio devices. Therefore, the battery should be connected when the RV is being used. You need to determine if you have a “smart” charger in the power converter or not. If it has a multistage charging regimen, then you can leave the battery connected when the coach is parked at home and plugged in. If not, then the battery should be disconnected and kept properly charged by using a special maintenance charger, such as a Battery Tender or equivalent. — K.F.

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We recently purchased our camping trailer, an Amerilite by Gulf Stream, which we like very much. My working experience has been maintenance of cars, trucks, heavy equipment, power plants, etc. Therefore, I know the importance of preventive maintenance. My question: Is there a book that covers the care and maintenance of a camping trailer?

Charlie Russell, Fairmount, Georgia

There are a number of good books on this subject. Our own Bob Livingston authored *Trailer Life’s RV Repair & Maintenance Manual*, which, although it is out of print, is still available through sources such as Amazon. A quick Google search for RV maintenance manual will also lead you to what you are looking for. — K.F.

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I got tired of moving around dirty hitch spring bars, so I came up with this solution. I simply store my trailer’s Eaz-Lift hitch spring bars in a clean, easy-to-carry space using a fabric rifle case I purchased for less than $20. Zip it up, and it’s neatly put away.

Paul Krutsch
McMinnville, Oregon

Chock It Up

I went to my local Lowe’s and got a twisted/bent 4x6-inch piece of wood that was 16 feet long. In speaking with the store manager, I was able to get it for only $5, since it was a piece of scrap wood. I cut two pieces to 13-inch lengths and mitered the corners to 45 degrees to fit between my trailer’s tires. They don’t have to fit too tightly; just leave a little space so they won’t be too snug on uneven ground. I put an eye hook in each block, so I can use our RV’s awning wand to pull the blocks out without even bending over.

I then cut the rest of the 4x6-inch lumber into leveling blocks for under the jacks after making two sets of chocks for my friend’s trailer. These literally cost me less than a couple of bucks for each set, and they work well going forward or reverse. I’ve seen people with rubber mallets hammering chocks so they don’t pop out. Not me; I just set them in between the tires.

Mark Wisor, Madera, Pennsylvania

At-a-Glance Battery Check

We installed a DC voltmeter (purchased online for $5) into our RV’s stove hood. Carefully cut a hole (we used a Dremel) to fit the meter. There are a lot of wires inside the hood to select from to connect the meter, so be careful when cutting the hole. Now we can tell at a glance the condition of our RV’s batteries.

Jerry B. Prickett, Santa Rosa, California

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Bingo!

Many casinos are RV-friendly and offer a different game of chance in a decisively more tranquil environment.

I discovered years ago that casinos outside of the big cities are consistently RVer-friendly. I think they look at a group of RVs in their parking lots — aside from housing a captive audience — as a mini-hotel in which they don’t have to change the towels.

I have a new discovery from a recent casino visit: There actually is a place to escape the masses and find tranquility: It’s the bingo room. At this casino it reminded me of a big-city public library. Folks were quietly busying themselves at tables, some hunched over papers, scratching with colored markers.

The place was huge, big enough to seat 700 people. I don’t think anybody was talking, or if they were, the sound did not carry. This was the one place in the casino I could relax in a comfortable chair, enjoy free popcorn and drinks, do nothing and still be in the game.

I remember playing bingo at the Riverside Casino in Laughlin, Nevada, years ago. We bought bingo cards and sat at long tables, as you would at a church potluck dinner. A man in a steady monotone called out the B-7s and the O-61s, etc. Every few minutes somebody would yell “Bingo!” causing the rest of us to shift in our seats and moan. Life would stop while the numbers were confirmed. Then came a new game — again anticipation and suspense took over the room.

Today bingo is a whole new thing.

I am in Southern California, in Temecula, at Pechanga Resort & Casino. It is just off Interstate 15, 50 miles north of San Diego. Bingo players can still buy a card here, but most people go for the Electronic Buy-In that starts here at 55 bucks. For that you get a Planet Bingo tablet that is like an iPad encased for battlefield use. It has 48 cards built in, plus some peripheral ways to win. It is connected wirelessly to a computer apparently controlled by the guy who calls the numbers. The tablet really plays itself, even playing a tune when a card wins.

I had wandered into the bingo room and eventually sat down at a kitchen-size table where a guy — he was alone — had just won $150. His day job involved computers at nearby Camp Pendleton. I would guess he was a rare breed here, one of the few people in the room who was not retired.

He comes here one night a week. A bingo session runs about two hours, which gets him home before 10 p.m. “The beauty of playing with the electronic boards is that they never make a mistake,” he told me. “Some people play both. They also get a paper buy-in. It gives them something to do. But then you have to pay attention.”

Between games, the number-caller announced that a player named Susan was having a birthday, which brought scattered applause. Then he sang “Happy Birthday.” He had a pretty good voice, which got more polite applause.

Pechanga Resort & Casino also has a 168-site RV park, a golf course, 11 restaurants and the usual resort amenities, all of which are first-class. Out in front is a huge, level parking lot. A couple of dozen RVs were randomly parked at the far end where there was plenty of room. Motorhomes had levelers down, and fifth-wheels had awnings out. Obviously, folks had set up housekeeping.

Pechanga Resort even has a pump for diesel fuel near where the RVs were parked, along with a “big vehicle cleaning station” with long-handled squeegees.

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