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OF-

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FAMILY-FRIENDLY TOY HAULER WHIGHLAND RIDGE HIGHLANDER



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Why I Cover my RV with ADCO's Designer Series Tyvek® + Wind

Currently I own a Heartland Wilderness Travel Trailer. I've previously owned two Class A RVs and within the last few years I've downsized to the trailer. One thing has always remained the same, regardless of what type of RV was next to the house: **My ADCO RV Cover.**

Sure, I've had to buy a new cover every three or four years, especially when



Steve Webster, Rv Owner Since 1988

I bought and sold my RVs. I can tell you one thing though, RV Covers are worth their price. I've had no problem selling my older RVs for top dollar because they honestly looked brand new. Plus, I've seen a dramatic reduction in maintenance expenses when using a cover. RV Covers are a no-brainer for me.

This season I upgraded to ADCO's newest model called **Designer Series Tyvek®** + Wind. It not only looks fantastic next to the house, but fits better than any cover I have owned in the past. ADCO built-in what they call a **Slip-Seam Strapping** System and when tightened, it forces the cover to conform to the shape of the trailer, preventing wind from getting inside and moving the cover around. It comes with a longer warranty and even several pairs of free wheel covers.

There are no more excuses for leaving your RV exposed to the elements. Take it from this RVer, your investment in a cover will absolutely pay off in the long run.

Steve's Top 6 Tips For Using ADCO's RV Cover:

Always cover a clean RV.

- Prep the RV Cover on the ground prior to installation. It will save you a lot of time and there are several great videos on **ADCOprod.com** to show you how.
- Pad sharp edges on your RV. While this cover is very reinforced in all the right spots, I have some sharp edges that require a little attention before covering.
- Leave the cover in place when stocking up your RV for the next trip. I utilize the cover's zipper doors to come and go from the coach.
 - Store the cover by rolling it back up so that it's ready to be installed next time. I find if I spend 5 extra minutes rolling the cover, I save myself a lot of time.
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34845 28'7"-31'6"

34846 31'7"-34'

34847 34'1"-37'



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18'1"-20'

20'1"-22'

34842 22'1"-24'

Part #:

34838

34839

34840

34841

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64839	15'1"-18'	64844	26'1"-28'6"
64840	18'1"-20'	64845	28'7"-31'6"
64841	20'1"-22'	64846	31'7"-34'
64842	22'1"-24'		



OTH WHELE			
Part #:	Length:	Part #:	Length:
34851	Up to 23'	34855*	31'1"-34'
34852	23'1"-25'6"	34856*	34'1"-37'
34853	25'7"-28'	34857*	37'1"-40'
34854*	28'1"-31'	34858*	40'1"-43'6"

*With rear zipper entry door



5TH WHEEL

Part #:	Length:	Part #:	Length:
64852	23'1"-25'6"	64855	31'1"-34'
64853	25'7"-28'	64856	34'1"-37'
64854	28'1"-31'	64857	37'1"-40'

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IKAV	EL IKAILE	К	
Part #	: Length:	Part #:	Length:
52238	B Up to 15'	52243	24'1"-26'
52239	9 15'1"-18'	52244	26'1"-28'6"
52240) 18'1"-20'	52245	28'7"-31'6"
52241	20'1"-22'	52246	31'7"-34'
52242	2 22'1"-24'	52247	34'1"-37'



5TH WHEEL

Part #:	Length:	Part #:	Length:
52251	Up to 23'	52255*	31'1"-34'
52252	23'1"-25'6"	52256*	34'1"-37'
52253	25'7"-28'	52257*	37'1"-40'
52254*	28'1"-31'	52258*	40'1"-43'6"

*With rear zipper entry door

Find your cover by trailer roof length, NOT trailer length

Part #:	Length:	Part #:	Length:
36030	18' - 24'	36042	30'1" - 36'
36036	24'1" - 30'	36049	36'1" - 40'

TRAVEL TRAILER

Part #:	Length:	Part #:	Length:
74838	Up to 15'	74843	24'1"-26'
74839	15'1"-18'	74844	26'1"-28'6"
74840	18'1"-20'	74845	28'7"-31'6"
74841	20'1"-22'	74846	31'7"-34'
74842	22'1"-24'	74847	34'7"-37'



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THEY CAME, THEY SAW, THEY CAMPED!





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Time Flies

The year now coming to an end has seen some remarkable advancements in RV- and travel-related technology and design

hile attending the annual Elkhart RV Dealer Open House in 2017, I was guite impressed with all the new technology, designs, colors and floorplans that were being released in anticipation of the 2018 model year. Fast-forward another year, and the industry has outdone itself again with a large variety of introductions of interesting RVs, components and accessories.

As I see it, the year-over-year changes in the RV landscape were brought about primarily by two factors: advancements in technology and the rise of the Millennial generation. To some extent, these two aspects are tied together.

Some of the latest communication technologies, like cellular and Wi-Fi repeaters, are now standard or optional equipment on many new RVs.

Millennials have different expectations than the majority of legacy RVers. A quick look on Pinterest shows how Millennials have made their mark on the world of design, and that has flowed over to the RV industry. In general, Millennials also have different expectations with regard to technology, though

CLICK-TO-FIT FIFTH-WHEEL

Kids love technology, just like we do, yet despite all the electronic gadgets vying for their attention this season, Lego toys are still a hot item. Just in time for the holidays, the classic line of plastic bricks has added a fifth-wheel trailer and pickup truck to its fleet of build-it-yourself RVs. Equipped with plenty of gear, the fiver



unhitches from the truck, ready for imaginary camping adventures. The \$29.99 playset (kit 60182) comes with a family of three and 341 additional pieces.

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truck campers that were introduced at this fall's trade and consumer RV shows.

As we close in on the new year, I like to reflect on the year

that has passed. To quote Bing Crosby in Irving Berlin's musical Holiday Inn, "I've got plenty to be thankful for." May you have the happiest of holidays and the healthiest and most prosperous new year. See you down the road. 🎞

looked for better ways to communicate. I was pretty advanced

at the time, armed with a pocket pager and a cell phone, and

a laptop that I could plug in at campgrounds with internet

connections. Back then, Flying J locations had booths with

phone connections so you could dial in on the internet for free.

went from pay phones and pocket pagers to cell phones and PCs,

then to smartphones, tablets and watches. Indeed, some of the latest

communication technologies, like cellular and Wi-Fi repeaters, are

Speaking of technological progress, in this issue we report

on a compact hydronic heating system for towable RVs (page 42) and test Forest River's

flagship fifth-wheel, the Cardinal (page 14).

Look for more new stuff in the February 2019 issue, with a special section dedicated to the

fifth-wheels, travel trailers, toy haulers and

It was 20 years ago this past August when I started full-

timing, and I continued doing so for 10 years. In that time, we

now standard or optional equipment on many new RVs.

Chris Dougherty, Technical Editor

you don't have to be a Millennial

to appreciate the technological

advancements in RVs.



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COOL CAMPSITE



MAINE ATTRACTION

I just received my October issue and have to ask, what campground is that on the opening page of Stephanie and Jeremy Puglisi's RV Trip-Planning Guide? It looks like an amazing spot to park my fifth-wheel overlooking the water. Don Huggan, Weymouth, Massachusetts

Jeremy Puglisi replies: That's Bar Harbor/ Oceanside KOA in Bar Harbor, Maine a gorgeous place!



Meets Retro Teardrop

I read with amusement the comment toward the end of 'Contrast in Symmetry," Chris Hemer's October test of the Little Guy Max and Ram 1500. Hemer recalled his dad using the family's Dodge Polara to tow an Aristocrat Land Liner that was probably too heavy for it, but he noted in fairness that "there were no towing guides back then."

My dad bought a 1967

all the tow specs provided, so

and pictures for fabrication of

the proper receiver assembly

to fit the vehicle. Although

as one might expect.

were complete instructions



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POLL RESULTS: SOUTHERN MIGRATION

WHERE WOULD YOU RATHER SPEND THE WINTER?

33% Southeast (67% Southwest) facebook.com/trailerlifemagazine

Really? A 2019 Ram 1500 that gets 20 MPG on the highway and 8.2 MPG towing a Little Guy Max trailer that's approximately 4,000 pounds? I wouldn't exactly call that progress. Art Feather. Placerville. California

Chris Hemer replies: The towing mileage figure was combined city and highway, up and down hills, with and without headwind. As journalists, our primary concern is not squeezing the best fuel economy out of a test vehicle but driving it the way we normally would under the prevailing conditions. An owner would likely place a higher priority on fuel economy and

would doubtlessly achieve higher mileage figures during normal highway driving.

Call of the Wild

Reading Chris Dougherty's October Driver's Seat column. "Before You Go." reminded me of how much we love to find off-the-beaten-path campsites. When we make travel plans, our campground searches always include state forests and county parks. These often have few amenities but provide inexpensive stays and bring in the nature and recreation aspects we seek like rivers and lakes to kayak, and trails to hike or bike. Ben Hansen, Cosmos, Minnesota

GREAT LAKES OF COLORADO

Regarding "Colorado's Calm Waters" in the August issue, I agree with Lisa Ballard that Pearl Lake State Park is a hidden gem. The park is about 25 miles north of Steamboat Springs and has 38 reservable campsites. No electric hookups or dump station, but the restroom facilities are spotless and well lighted. Be aware that this is not big-rig country, and 35 feet is pushing it.

Steamboat Lake State Park is less than 8 miles west of Pearl Lake and can handle larger RVs like our Keystone Montana High Country 362RD. The facilities are great, but not all sites have electric or sewer hookups. The road is a paved county highway all the way and well maintained, even in winter. The park is open year-round, but snow comes early. The KOA in Steamboat Springs is also open year-round, but good luck getting in during ski season. Thom Fisher, Evergreen, Colorado



CORRECTIONS: In the November article "Bonjour, Missouri!" about the French Colonial village of Sainte Genevieve, the route of the 2017 total solar eclipse was mistakenly edited from going west to east to going east to west. In November's "Towing 2019," the 2.7-liter turbo in the Chevrolet Silverado/GMC Sierra was referred to as a V-6; it is an I-4. We regret the errors. 🎞

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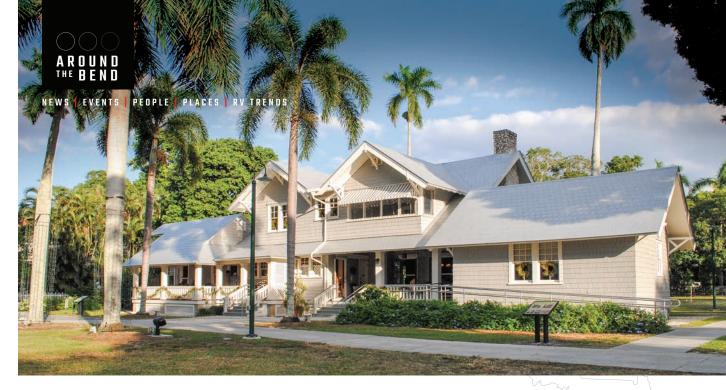
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SOUTHWEST FLORIDA

American Treasure

On 20 acres in Fort Myers, the winter homes of Thomas Edison and Henry Ford open their gates to historic sites and holiday lights -by Pamela Selbert

Famous for its beaches and warm winter climate, Fort Myers, Florida, draws snowbirds to the area's many RV parks. The Gulf Coast city also attracted two of the most influential men of the 20th century, Thomas Edison and Henry Ford. The inventors and captains of industry were good friends, so much so that they purchased adjacent properties in Fort Myers for family winter retreats.

In 1947, 16 years after Edison's death, his wife, Mina, deeded their Florida estate, Seminole Lodge, to the City of Fort Myers. After Edison's death, Ford rarely visited his winter home, the Mangoes, and in 1945 he sold it to a local resident, whose family later sold it to the city. Today, the Edison & Ford Winter Estates, with more than 20 acres of historic buildings and spectacular gardens, is on the National Register of Historic Places and open to the public.

Best known for inventing the phonograph and the incandescent

lightbulb, Edison first visited Fort Myers in 1885. He bought 13 acres along the Caloosahatchee River and built two identical homes and a laboratory. Ford, who devised the assembly line and "made America more mobile" with his phenomenally successful Model T, met Edison in 1896. Edison encouraged Ford's idea for an internal-combustion engine, and a friendship was forged.

The two men, along with tire manufacturer Harvey Firestone and naturalist John Burroughs, enjoyed numerous camping trips together, calling themselves the Vagabonds. Ford created an elaborate chuckwagon from a 1918 Model T for that purpose. It's on exhibit at the estate's large museum along with many of Edison's and Ford's inventions.

If you visit, we recommend staying at Red Coconut RV Park, a Good Sam Park in Fort Myers Beach, with 450 feet of beachfront. The beach side has 53 RV sites, plus showers and laundry facilities. The rest of the park's total 267 sites are a short walking distance across Estero Boulevard. All provide full hookups, cable, internet service and a picnic table.



DECK THE HALLS

For the past 43 years, thousands of twinkling lights and traditional decorations have adorned the winter homes of Thomas Edison and Henry Ford as part of the Holiday Nights celebration. This year's festivities start with a tree lighting on November 23 and run through December 31 (closed Christmas Eve and Christmas). Guided tours take visitors through the spruced-up homes and gardens at 6 and 7 p.m. nightly. www.edisonfordwinterestates.org

• Henry Ford's winter estate, the Mangoes, and that of his equally famous neighbor, Thomas Edison (Seminole Lodge, pictured on the right), welcome more than 235,000 visitors annually.

AROUND



He's a Magic Man

Automotive wizard Randy Grubb conjures up one-of-a-kind RVs and other vehicles in his Oregon workshop

Randy Grubb isn't just a hot-rod builder; he's an automotive-sculpture artist. Grubb's latest masterpiece, the Magic Bus, was built at his shop in Grants Pass, Oregon, and completed after 18 months and 6,000 hours of labor. Much like his previous project, the DecoLiner, a motorhome-truck combo, this new creation is a double-decker bus skinned with polished aluminum, with Art Deco echoes and a '60s twist.

Combining the chassis of a GMC motorhome, the front of a Divco delivery truck, and a 1962 Volkswagen bus as the second deck, the Magic Bus is a blend of old and new. One of the coolest features is an elevator that spirals to the second deck where a sunroof opens to enjoy the breeze.

If you have deep pockets and are in the market for a unique RV that's truly a work of art, pay a visit to Grubb's website and start dreaming. — *Cate Battles* www.randygrubb.com



Season's Greetings from the Southwest

• From Florida's Gulf Coast to North Pole, Alaska, holiday lights are a jolly way to get into the spirit of the season. For those wintering in the Phoenix area, Fountain Hills, Arizona, is the place to be. The city's annual Stroll in the Glow kicks off on December 1 this year with live music. Once the sun goes down, the switch gets flipped, and more than 60,000 twinkling lights will cast a magical glow across downtown's Avenue of the Americas, followed by Santa's arrival in a firetruck. From classic Christmas trees to palm trees radiating tropical cheer and even a few saguaro cacti, the lights will keep shining through the first week of January. — *Emily Fagan* www.fountainhillschamber.com/stroll-in-the-glow

That's the number of snowbirds researchers estimate flock to the greater Phoenix area each winter to enjoy central Arizona's mild climate and desert scenery.

NICHE WITHIN A NICHE

Beyond the devoted followers of fiberglass travel trailers (see page 23), there's an even more specialized fanbase for fiberglass truck campers

- by Stephanie and Jeremy Puglisi



British Columbia-based **Bigfoot RV** has been building molded-fiberglass travel trailers and truck campers for more than 30 years. Its 1500 Series of all-season truck campers features three floorplans for shortbed trucks and two for longbeds. All come with spacious beds, comfortable seating and compact wet baths. The 2500 Series ups the ante on amenities and creature comforts. MSRP: \$30,185 to \$43,260. www.bigfootrv.com

Another longtime British Columbia manufacturer, Northern Lite also builds light-



weight, all-weather truck campers. The company produces more than a dozen floorplans in five series, each with different specifications, standard offerings and options. All feature Northern Lite's Four Season design, which includes thermal-pane windows and skylights, a double-dome Fan-Tastic Vent fan and heated holding tanks. MSRP: \$37,075 to \$47,280. www.northern-lite.com

Bahn Camper Works builds elite custom truck campers in Hood River, Oregon. Fiberglass shells with walls and floors sell for \$45,000, while fully equipped campers are in the \$250,000 range. That may seem staggering, but the finished projects will please the most demanding consumers. A truck camper, yes. A family heirloom, even more so. www.bahncamperworks.com



Trailer Life E-Bike Giveaway

What's better than a ride in Santa's sleigh? A **Pedego Latch** electric bike with a bow on it



Prize: Pedego Latch, valued at \$2,795. The electric bicycle weighs 50 pounds, including the motor and lithium-ion battery, and folds to a compact size. Learn more about the Latch at www.pedegoelectric bikes.com/shop/latch.

Details: For a chance to win, complete the online entry form by December 20, 2018. Mailed entries must also be received by that date. One winner will be chosen at random on December 21, 2018, and announced on the *Trailer Life* website and Facebook page. To enter, go to www.trailerlife.com/ pedegogiveaway/2018.

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MAGIC MOMENTS

Step inside Randy Grubb's Magic Bus and watch author Cate Battles ride the spiral elevator ("Magic Man").

NEW & NOTABLE

Take a peek at some of the latest RVs, from lightweight towables to Lance's longest trailer yet ("10 New RVs for 2019").

SHOW STRATEGY

Before heading to an RV show, take some advice from our experts ("10 Tips for RV Show Shopping"). **II**





Cardinal Rules

Forest River's flagship fifth-wheel offers spacious living, augmented by a large galley, separate office and a roomy bedroom

– by Donya Carlson

wo-plus decades. That's how long Forest River has been manufacturing its flagship Cardinal fifth-wheel. According to the company, the Cardinal is one of the longest-standing fifth-wheel brands in the RV industry. After testing the well-appointed Luxury 3525SOX model, it was clear that towable giant, Forest River, pulled out all the stops when it designed and produced the highly livable Cardinal.

With its kitchen island and seating for nine, the 40-foot, 9-inch SOX fifth-wheel has a dream galley for people who like to entertain or simply enjoy spreading out when preparing meals, a walk-around king bed complemented by plentiful bedroom storage, a roomy bathroom, a huge pass-through exterior compartment, and the kicker: a separate office off the kitchen. Climbing the stable MORryde StepAbove steps and entering the Cardinal, you will find yourself in the hallway, with the living area to the left, and the bedroom and bathroom up three steps to the right. Inset shelves and a coat closet are located by the entry for dropping off keys and jackets.

TO THE LEFT

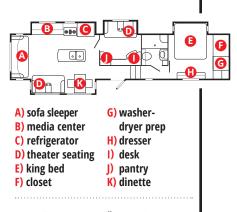
The living area radiates luxury with its 8-foot-high ceiling, crown molding and raised-panel Monticello Maple hardwood cabinetry accenting white roundededge solid-surface countertops. Add to that a ceiling fan, a fireplace, tan leatherlike sofas and a plethora of LED lights that can set the mood. The focal point is the large center island with a deep two-basin stainless-steel sink and overhead pendant lights that's truly a showpiece. It divides the room between the stainless-steel 20-cubic-foot residential refrigerator and freestanding dinette table (featuring lift-up storage) with its two chairs. Lighting fixtures over the dinette and on the wall are lovely, as is the accent lighting around the island and above the cabinetry.

A two-place theater-seating group faces a 50-inch LED TV that is housed in a cabinet and is mounted on a lift so it disappears into the counter behind the 31-inch Greystone electric fireplace that offers two levels of heat. The Lippert OneControl panel near the bedroom controls much of the fifthwheel's lights and functions, including raising and lowering the TV, and can also be operated via an app on an iOS or Android smart device through the OneControl system. Entertainment possibilities are endless with the Cardinal's Bluetooth Bose soundbar, a Samsung Blu-ray disc player, JBL Flip 4 portable Bluetooth speaker, over-the-air King antenna and WiFiRanger Sky3 wireless router and signal-booster.

The theater seating with footrests (electric operation is optional) is housed in the curbside slideout. The seats have well-positioned armrests and cupholders, but the footrests work better for short folks. Tall RVers who wanted to stretch out had to slide their feet off to the side of the footrest to get comfy since the leg supports weren't quite long enough. Longer legs will partly cut off the walkway from that side of the island. The sofa's backrest also partially blocks the knobs used for opening and closing the lower portion of the windows behind it.

The rear sofa, suitable for three without crowding, is fabulous, with cushions that feel just right. Since this sofa doesn't have footrests, I liked sprawling out lengthwise on it to read, listen to music from my phone through the Cardinal's sound system or enjoy the surroundings through the large windows. It was so comfortable that one night I didn't bother to make the trek to the other end of the Cardinal to the king bed and slept on the couch instead.

A friend, however, who popped in for a visit, slept on the sofa's hide-a-bed 4-inch-thick queen mattress. Jody spent a couple of nights camped out on the "guest bed" and appreciated all the sur-



rounding space to "spread out and make myself at home." She described the bed as "mostly comfortable. but I could feel the mattresses coils." Then again, she was using only a sheet, so adding a thick comforter may do the trick. The fluid-operating Slow-Rise Roller Shades kept the room wonderfully dark, even with full sunshine in the mornings. The two-layer shades consist of a black mesh that blocks a good amount of sunlight during the day, keeping the inside cooler, and a tan blackout shade for full darkness.

One evening in preparation for a grill fest and potluck for a group of 14 people, there was a flurry of activity in the Cardinal sautéing veggies and cooking couscous on the Furrion RV Chef Collection

The living area radiates luxury with its 8-foot-high ceiling, crown molding and raisedpanel maple hardwood cabinetry accenting rounded-edge solid-surface countertops.



Above left: It was a joy to cook in the Cardinal's well-equipped kitchen with the Furrion RV Chef Collection three-burner cooktop and oven. The island, with pendant lights, provides a well-lit central area for efficient food prep. The door to the right of the 20-cubic-foot French-door refrigerator leads into the office (above right). The office can double as a media room and has abundant storage (a portion not shown). Set up for relaxing, the living area is appointed with comfy seating for at least five and a TV that lowers into the cabinet to disappear from view.

IN THE LAP OF LUXURY

Right: A large skylight over the spacious shower lets in plenty of light. The shower has a tri-slide glass door and a seat, and the bathroom's storage includes a medicine cabinet. Far right: The deluxe king pillowtop mattress is of excellent quality, and mirrored closet doors make the room appear even larger.

cooktop, baking brownies in the RV Chef Collection gas oven (we really liked the oven's heavy-duty door handle) and nuking ingredients for a spinach-artichoke dip in the 30-inch convection microwave. The first-rate three-burner cooktop has a stainless-steel finish and center oblong burner, all covered with cast-iron grates. We also had fun "playing" the residential refrigerator's chimes for lights, filter-change-due, water, ice and door-left-open warning. The quiet-running stainless-steel LG 20-cubic-foot French-door fridge (10-year warranty on the inverter linear compressor) has a Slim SpacePlus Ice System — leaving more than enough room for a stockpile of half-gallon containers of ice cream that occupied the bottom freezer.

The island houses the stainless-steel sink with pull-down

sprayer off to the left, leaving

the TV and the cooktop, so it's natural to have utensils and plates at the ready in this area. But when the TV is in the up position, there's nothing covering the open space in the counter, so if something drops down there, the fireplace may

for a third 13,500-Btu A/C).

more than 4 square feet of counter space. There's plenty

of under-sink storage and deep drawers, plus elbowroom

galore for multiple chefs to work in harmony. We also liked

the heat coming from the kitchen appliances were the two

Dometic air conditioners, a 15,000-Btu and 13,500-Btu (the

the rabbit hole: the opening in the counter where the TV

resides when not in use. This one-piece counter houses

bedroom has a separate control, and the fifth-wheel is wired

All was going well, until a paper plate disappeared down

the pop-up "tower of power," with electrical outlets and USB ports, flush-mounted in the island's counter. Combating all



+ WHAT WE LIKED

Comfortable king-size bed, galley island with offset sink, Furrion oven and cooktop, hidden TV, separate office.

WHAT WE'D LIKE TO SEE

Longer footrests on theater seating in living area, larger display on OneControl panel, better grip on steps leading to bathroom. have to be pulled out (removing four screws) to get to it. Lesson learned. We also noted that, with the TV retracted, the small opening in the counter might be susceptible to spilled liquid. Otherwise, the hidden TV is wonderful, and when it's in the down position, there's another window to look out of.

Across from the island is a large pantry and, to the left, off the kitchen behind another door, an office with a window. The office is also TV-ready and has a two-place theater-seating group, so these quarters work as an extra entertainment room or place to kick back in privacy. There's a built-in desk with deep drawers sized to work as a file cabinet and lots of additional storage. If dinner is cooking in the neighboring kitchen, the flow-through vent above the door may entice the one locked away in the office to join the group for supper.

TO THE RIGHT

Leaving the living area, we head down the hall and up three wide steps to the bathroom and bedroom. At the top, the Beauflor laminate flooring gives way to plush tan carpeting. Safety features include a sturdy wood handrail to hold on to as you climb the steps and a light switch below the control panel. Those steps could be slick when our flip flops were wet; we'd like to see some grip tape added.

Inspiring tranquility, the bedroom, with small windows bookending the head of the bed and a 32½-by-16½-inch frameless tinted window that lets in minimal natural light, did not get overly bright during the day. Those who like daytime naps or waking late will appreciate the night shades, which kept the room dark even when the sun was high in the sky. In contrast, when the bedroom's LEDs are turned on, the mood changes and the room goes from translucent to radiant. Even the individual reading lights are bright — so much so that if one person is reading, the other person may have a hard time escaping its high-beam if trying to sleep.

Neutral tones, a king-size bed with wood headboard, matching designer bedding and mirrored closet doors with wood inlays add an elegant touch. The closet's cedar-lined interior offers plentiful storage with built-in drawers and a large shelf below a shoe cubby on the left side; the natural position was to sit on the bed to reach them. On the right side of the closet are four 7-inch-deep

Above right: The 50-inch LED TV is on a lift and lowers into the cabinet behind the Greystone electric fireplace. A Bose Bluetooth soundbar and Samsung Blu-ray disc player offer theater-quality sound. Right: The two-seat dinette expands into cozy dining for four with the drop-leaf table and two folding chairs that are stored in the bedroom closet. smooth-gliding drawers and plumbing for a stackable washer and dryer. The closet doors rolled easily, and the full-height clothing rod kept my one dress from dangling on the floor.

Bedside power outlets are on both sides of the walk-around king, and there is about 21/2 feet of space between the end of the bed and the dresser with cedar-lined drawers. The plush 91/2-inch-thick deluxe pillowtop mattress was nothing short of insanely comfortable with its right mix of firm and squishy. The head of the bed faces a 32-inch TV centered between cabinets, and a King Jack HDTV antenna, parked in the ceiling with its glowing blue light (which can be turned off), acted as a nice little nightlight. Below the mattress platform, held up by gas struts, is a 41/2-inch-deep storage area, and







the room has a port for the Dyson central vacuum.

The bathroom, with single access in the hallway to the bedroom, has a door that opens out toward the stairs. When the door is fully open, it blocks the walkway into and out of the bedroom — so you'll want to be careful that someone isn't making a spirited jog up the stairs just as you open the bathroom door. There's lots of practical storage, and we two women with our varietypack of shampoos, conditioners, facial cleansers, combs and every anti-aging cream known to womankind couldn't fill half of the five-shelf cabinet next to the sink.

The spacious molded-fiberglass shower with seat has a tri-slide glass door and 6 feet, 5 inches of height with the skylight that also brightens the bathroom. The adjustable showerhead was sturdy, though we were disappointed it did not have a shutoff valve. When seated on the porcelain Dometic throne, there's adequate clearance between one's knees and the vanity. A remote control for the MaxxAir powered roof vent with rain sensor is conveniently located in a holster by the door. The vent did a great job of pulling out shower steam.

On the wall above the stairs is where the 3525SOX's command center resides: the aforementioned Lippert **OneControl Wireless with** a 5-inch digital screen. The app-based OneControl allows users to operate and monitor the Cardinal's systems — including lighting, extending or retracting the awnings, auto leveling, checking the holding tanks...the list goes on — from the panel itself or from a smartphone, tablet or computer. A digital version of the trailer's owner's manual is also on here in case you need to brush up on the unit's various systems.

TAKE IT OUTSIDE NOW

Our campsite was on a lovely grass area, and we enjoyed our downtime seated in camp chairs under the height-adjustable 18-foot power awning

SPECIFICATIONS

2019 FOREST RIVER CARDIN	NAL LUXURY 3525SOX
Exterior Length	40' 9"
Exterior Width	8' 4"
Exterior Height	13' 6"
Interior Width	8'
Interior Height 8'	living; 6' 9¾" bedroom
Construction 2-inch weld	led-aluminum framing,
vacuum-bonded walls, h	igh-density block-foam
insulation, 3-incl	vacuum-bonded floor
with welded-a	aluminum truss, 5-inch
double-radiused alu	uminum truss TPO roof
Freshwater Cap.	64 gal.
Gray-Water Cap.	70 gal.
Black-Water Cap.	40 gal.
LP-Gas Cap	14 gal.
Water-Heater Cap.	12 gal.
Refrigerator	20 cu. ft. residential
Furnace	42,000 Btu
Air Conditioner (2)	15,000/13,500 Btu
Converter	70 amp
Inverter	1,000 watts
Battery	Dealer supplied
Tires	ST235/80R16 LRG
Suspension	MORryde CRE3000
Weight (freshwater and LP-	gas full, no cargo)
	14,900 lbs.
Hitch Weight	3,100 lbs.
Axle Weight	11,800 lbs.
GVWR	16,575 lbs.
GAWR (2)	7,000 lbs.
Cargo Carrying Cap.	1,675 lbs.
MSRP, Base	\$80,908
MSRP, As Tested	\$109,378
Basic Warranty	1 year
Part of the second second second	

Forest River, www.forestriverinc.com Circle 135 on Reader Service Card with LED light accents. At night, the sunshine was replaced with an amber patio light and two security lights.

A large, lighted pass-through storage compartment with slam-latch doors, tall enough to store the spare ST235/80R16 tire upright, is easily accessible from the passenger side but is under the bedroom slideout on the driver's side. Likewise, one gray-holding-tank valve is not-so-conveniently located under the living area's slide; we had to crawl under it to pull the valve when the tank (servicing the shower) was full. A pair of gray and black dump valves is conveniently located in the enclosed bay up front where the freshwater hookup, water filter and outside sprayer are housed. Other notable features on the test unit included awning toppers for all slideouts, 50-amp service, a full-length ladder, a heated and enclosed underbelly and prewiring for solar panels.

In keeping with the luxury theme, we paired the Cardinal Luxury 3525SOX with a Cajun Red Chevy Silverado 3500HD High County 4WD dually with the Duramax 6.6-liter V-8 turbo diesel and Allison six-speed automatic transmission. Outfitted as it was with leather bucket seats (memory adjust for the driver's seat), remote vehicle start, remote keyless entry, Chevy MyLink Audio System with 8-inch color touch screen, navigation, HD radio and Bose sound system, we couldn't ask for anything more. Safety features include StabiliTrak (GM's stability control system that automatically intervenes when a loss of lateral traction is sensed) with trailer sway control and hill-start assist, lane-departure warning, forward-collision alert and antilock brakes. With its 22,700-pound tow rating, the Silverado pulled the 14,900-pound Cardinal with ease.

Some Cardinal Rules of RVing include making memories, having fun, enjoying time with family and friends, being comfortable and getting a good night's rest...all of which we experienced in the 3525SOX. Thinking back to our grill fest and potluck with friends gathered around, and the Cardinal filled with laughter and the delicious aromas of dinner and brownies baking, it felt like home. Twenty-plus years and counting — the Cardinal still rules the roost as one of the longest-standing fifth-wheel brands, and Forest River sure got leisure right with the Luxury 3525SOX.

Deborah Hirschy and Scott De Ladurantaye of North Fort Myers, Florida, who were visiting Elkhart, Indiana, the RV capital, for the first time, joined us one evening outside the Cardinal Luxury.

Cardin



(WO)MAN CAVE

The Highlander fifth-wheel garage-style toy hauler has the right stuff to keep the whole family happy

QUICK	INFO
Exterior Length	39' 11"
Exterior Width	
Interior Height	6' 4"
Exterior Height	
Freshwater Cap	110 gal.
Black-Water Cap	41 gal.
Gray-Water Cap	114 gal.
LP-Gas Cap	14 gal.
UVW	11,365 lbs.
Hitch Weight	2,534 lbs.
GVWR	16,850 lbs.
MSRP, Base	\$67,353

he first toy-hauler manufacturers had humble aspirations. Create a trailer that had adequate cargo space in the back for a couple of motorcycles or ATVs, and bestow it with the capacity needed to carry them.

And that's about as far as the thought process went for an undetermined period of time. Yes, these early beasts had the basic necessities, but there was never any escaping that, once the toys were unloaded, you were essentially living in a box. This fact was not lost on the female half of the buying equation, who, while

> recognizing the positive effects of tribal patterns and a "killer stereo" on the

male ego, were otherwise unimpressed with the apparent lack of accoutrements.

Well, no one ever accused us guys of being quick on the uptake, but eventually we caught on, and manufacturers started making toy haulers more family-friendly, well-equipped and, dare we say, luxurious. One of the latest is the 2019 Highlander HF327G by Highland Ridge RV, a nearly 40-foot fifth-wheel that should tick most of the boxes for families seeking an adventurous lifestyle — in comfort, of course.

Highlander toy haulers are, in industry parlance, garage-style toy haulers, meaning that the cargo area is isolated from the living area by a solid wall and entry door. This design, while not offering as much cargo space as a comparable open-box layout, goes a long way toward making the trailer more livable, in our opinion. As in a home, vehicles and people needn't share the same space — although, like other toy haulers, the Highlander's garage does convert into a separate living and sleeping area.

A) ramp/patio B) drop-down bed C) theater seating D) television/fireplace E) king bed





Far left: The Highlander's garage and living area are separated by a door with a frosted center pane and a small bunk above it, which could also serve as a storage loft. A theater-seating group with room for four faces a well-equipped kitchen, and blackout shades are used throughout. Left: The bedroom features a mirrored wardrobe, overhead cabinets and a king bed.

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SEAMLESS





Opposing bench seating as well as a queen-size bed lower from the ceiling, and the loading door can be supported horizontally by cables to form a patio, complete with railings that can be installed to keep the kids (and inebriated adults) from toppling. The forward bulkhead offers TV prep with ceiling speakers to turn the garage into a viable entertainment area, and the curbside front corner is plumbed for a washer and dryer. The composite diamond-plate floor houses nine D-rings to tie down the toys.

Walk through the residential-style door that has a frosted center pane, and you'll find yourself in a comfortable, dedicated living area designed for family time, with another bunk above the doorway. In the streetside slideout is a comfy Thomas Payne Collection



Above: The L-shaped kitchen offers lots of counter space. Forward entertainment center has a TV on an extending/swiveling mount and an electric fireplace. Above right: Jack-and-Jill bath features a large shower and linen closet.

theater-seating group, which accommodates four across, each with his or her own pop-up footrest. The seats are directly across from the roomy L-shaped kitchen, featuring dark woods, a solid-surface countertop and stainless-steel appliances, including a Frigidaire residential microwave, Dometic range with standard oven and a Norcold PolarMax 18.3-cubic-foot double-door refrigerator. There is plenty of cabinet and drawer space, including a pullout pantry that is appropriately sized for canned goods and spices.

The forward hutch features a 43-inch Furrion flat-screen television on an extending/swiveling mount, a Furrion DVD player and a Titan Flame electric fireplace. A floor-to-ceiling cabinet on the street side can serve as a pantry or storage for extra blankets and pillows. There is additional storage above the TV with matching frosted-glass panels, and another, smaller compartment to

The garage area is 13 feet long and has a 3,000-pound max cargo rating. A composite diamond-plate floor houses nine D-rings for securing toys. Opposing bench seats and a bed lower from the ceiling.

RV Armor, Inc., Circle 122 on Reader Service Card



the right of the fireplace. In the hallway is the command center where you'll find the necessary switches for lights, slideouts, tank levels and the Onan 5.5kilowatt gas generator, if so equipped (a \$4,350 option).

A quick hop up the stairs takes you to the bath area, which utilizes an efficient Jack-and-Jill layout for easy access from the bedroom as well. Nothing fancy here, just a good-size one-piece fiberglass corner shower with a sliding-glass door, porcelain toilet, vanity with mirrored medicine cabinet and a roomy linen closet, which is housed in the bedroom slideout along with the adjacent wardrobe. Like many newer fifth-wheels, this one is equipped with a king bed that is fairly wedged into place — there is room for the streetside sleeper to get out of bed, but the curbside partner will have to scoot off the end (just so you know, guys, that will be you).

Four-point auto leveling, Equa-Flex rubberized suspension, fully enclosed and heated underbelly, JT Strong Arm stabilizers, power awning, exterior speakers, solar prep and a 30-gallon fuel station are standard.

Highland Ridge RV

www.highlandridgerv.com Circle 136 on Reader Service Card

Special thanks to Blue Dog RV in Troutdale, Oregon. www.bluedogrvportland.com



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Lippert Components, Circle 110 on Reader Service Card



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SMOOTH MOVES MOLDED-FIBERGLASS TRAILERS, FEATURING ROUNDED CORNERS AND

SHINY SIDES, ARE AERODYNAMIC, LIGHTWEIGHT AND BUILT TO LAST

A molded-fiberglass travel trailer is not just an RV. It represents a lifestyle. Shoppers who dive into researching these RVs will quickly discover that this niche is markedly different than the rest of travel trailer culture.

Many folks start looking at molded-fiberglass RVs simply as attractive lightweight options in the towable market. They soon find out their relatively light weight isn't the only quality that sets these "egg" trailers apart from the crowd. The purchase process, online community and rally culture are all distinguishing — and fascinating — features. What began as an ordinary RV shopping experience may morph into something more like an epic quest when potential buyers start searching for the perfect molded-fiberglass RV.

But first, the basics. What makes the bones of moldedfiberglass travel trailers distinct from traditional stick-and-tin RVs? They are made from pouring fiberglass into production molds that are expensive to produce. Typically, a molded top and bottom are sealed together by a band around the middle, but some are made with a right and left half. The primary benefit is an extremely strong yet lightweight exterior shell that is virtually impenetrable by water because it has far fewer seams than traditional types of construction. This manufacturing process yields a higher price tag, for sure. However, the life span of these trailers tends to be much longer, and the resale market is strong.

The high cost of fiberglass molds leads to some industry norms that you may notice while perusing the models featured in this roundup. Most manufacturers offer a very limited selection of sizes and floorplans. Most molded-fiberglass trailers will range in length from 13 feet to 17 feet, with some larger options up to 25 feet. A wet bath or no bathroom at all are typical, although it is possible to find full baths in the larger models.

With its two-tone paint job and classic egg shape, the Trillium Outback looks vintage but can be outfitted with the latest technology.

While most of the RV industry is controlled by a few large manufacturing conglomerates, the molded-fiberglass market continues to operate a bit like the Wild West. It's made up of more than a dozen small manufacturing companies spread throughout North America. Most do not sell their trailers through a traditional dealer network, so buyers place custom orders and often travel to the factory to take ownership. Exceptions include the Airstream Nest and Little Guy MyPod, both featured in this roundup, and the Liberty Outdoors ParkLiner, with new models due out in the near future.

Potential owners may find their best sources of information are rallies and online forums for fiberglass enthusiasts. Given the dispersed nature of the manufacturing, internet resource hubs like www.fiberglassrv.com can help newbies sort through the far-flung options and hook up with manufacturer-specific groups. And since shoppers won't find a variety of molded-fiberglass models at a traditional RV show, many folks attend enthusiast rallies before they buy an egg trailer of their own.

Navigating the realm of molded-fiberglass travel trailers is not for the casual RV shopper. You will likely have to do a bit more leqwork to track down your dream trailer. But, according to all those passionate fiberglass RV owners out there, the payoff will be worth it.

HOHENWALD, TENNESSEE

Oliver Legacy Elite II

Among fiberglass aficionados, the Oliver name is synonymous with "understated elegance." The 231/2foot Legacy Elite II is available in two floorplans: one with a convertible U-shaped dinette, and the other with twin beds, a nightstand and a storage drawer. Both offer additional seating with a two-person side dinette. The interior is bright, cheery and modern, with ample lighting and overhead cabinetry. The front bathroom may eliminate some natural light, but it brings more space and comfort than other floorplans in this category. A fully outfitted kitchen with a pantry will please RV chefs. For gadget geeks, upgrades and add-ons abound. Options include a solar-power system, Wi-Fi booster and composting toilet.

Exterior Length	
Exterior Width	
Interior Height	6' 6"
Exterior Height	
Freshwater Cap	30 gal.
Black-/Gray-Water Cap	18.5 gal./30 gal.
LP-Gas Cap	
UVW, Base	4,600 lbs.
Hitch Weight	
GVWR	7,000 lbs.
MSRP, Base	\$53,900
www.olivertraveltrailers	com

UNIONTOWN, OHIO Little Guy MyPod

Looking for a tiny trailer for smaller tow vehicles? The 630-pound (dry weight) MyPod, with a 110-pound hitch weight, fits the bill. The interior contains a 52-by-76-inch mattress and an entertainment center with a stereo, speakers and flat-screen TV, along with a three-speed Fan-Tastic Vent fan and stylish window shades. The sleek exterior has a practical gravel guard and an optional roof rack for the outdoor adventurer. Liberty Outdoor's Tear Drop Shop (www.teardropshop.com) sells a wide variety of accessories to outfit the rig, including an attachable screen room that allows for added living space. To mix or match with a variety of tow vehicles, the MyPod comes in five colors: white, silver, black, blue and red.



Exterior Length	11' 7"
Exterior Width	6'
Interior Height	3' 1"
Exterior Height	5' 2"
Freshwater Cap	
Black-/Gray-Water Cap.	NA
LP-Gas Cap.	
UVW, Base	30 lbs.
Hitch Weight 1	10 lbs.
GVWR	200 lbs.
MSRP, Base\$	10,027
www.golittleguy.com	

OLIVER LEGACY ELITE II

JACKSON CENTER, OHIO Airstream Nest 16FB

The Nest's streamlined fiberglass exterior won't be instantly recognizable as an Airstream, but step inside, and it all makes sense. Luxurious and, according to the company, "decidedly modern," the Nest manages to be refined and practical. Panoramic front windows in the 16FB allow for breathtaking views, while blackout shades provide privacy when needed. The handcrafted Italian cabinetry, seamless vinyl flooring and stainless-steel sink make the Nest feel like a hip urban apartment. Thoughtful interior touches abound including USB ports, a flatware organizer and integrated soap dispensers in the shower. The 58-by-80-inch queen bed provides comfortable sleeping for two, while a separate couch allows for seating anytime, making this a flexible floorplan for couples on different schedules. Continuous hot water and surprisingly generous storage space make this Nest feel like home.

Exterior Length	16' 7"
Exterior Width	
Interior Height	
Exterior Height	
Freshwater Cap.	
Black-/Gray-Water Cap. (combo tank)	0
	0
LP-Gas Cap	0
UVW, Base	
Hitch Weight	
GVWR	
MSRP, Base	\$45,900
www.airstream.com	



Casita Independence Deluxe

Three wrap-around windows surround the rear twin beds of the Independence Deluxe, offering cross-ventilation and natural light. There's also ample lighting and overhead cabinet space. Buyers can add an optional flat-screen TV, making this the perfect nook for relaxing with a book or watching a movie on a rainy night. The compact kitchen with a three-burner cooktop makes smart use of space with a folding countertop that drops down above the sink. Range and sink covers allow for additional room to prepare food or make coffee in the morning. The front bathroom is relatively spacious for a 17-foot trailer, offering a compelling option for couples who want a lightweight towable that doesn't skimp on livability.

Exterior Length	
Exterior Width	6' 8"
Interior Height	
Exterior Height	
Freshwater Cap	
Black-/Gray-Water Cap	
LP-Gas Cap	10 gal.
UVW, Base	2,480 lbs.
Hitch Weight	
GVWR	
MSRP, Base	\$18,785
www.www.oooitetrovaltroilar	s 0.0m

www.casitatraveltrailers.com



ENDER LOVING CARE

Keeping a fiberglass RV clean and protected from the elements is key to longevity

Fiberglass is the leading choice among RV manufacturers because it's durable and cost-effective — and will look great for years if you take care of it.

The biggest enemy to fiberglass (molded or otherwise) and its gelcoat surface are the elements — sun, wind and dirt. With that in mind, it's crucial to keep the surface clean by washing your rig at least once a month if possible, more often if you live in a dirty, dusty climate. Waiting too long to wash it allows dirt to accumulate on the surface, increasing the likelihood that you will scratch the gelcoat surface while rubbing it with a sponge.

Use soap designed specifically for washing RVs, cars or boats, as household detergent products can strip any wax that has already been applied. There are a number of good car-wash soaps out there, both in the automotive, marine and RV segments, and if you can find one that also contains wax, this will help keep a protective layer in place between washes. Wax the RV twice a year, at the beginning and end of each season. Slightly oxidized surfaces can be restored using a fiberglass polish, followed by wax.

Keep the trailer out of the sun if possible; if not, consider a high-quality, UV-resistant cover; those made from Sunbrella material are the best and longest lasting. Go with a custom-made cover if you can afford it, or at least one that fits snugly and can be tightly secured with straps. A loose-fitting cover can actually do more harm than good, as flapping material combined with dirt can rapidly damage the surface. — Chris Hemer



ARMADILLO TRAILERS

THINKING OUTSIDE THE EGG

The small world of fiberglass trailers has grown in some quirky and quixotic directions in recent years. Companies like Southern California's Happier Camper, Oregon's Dub Box, Washington's Relic Custom Trailers, and Armadillo Trailers in British Columbia are making small trailers that should find equal appeal among Millennials buying their first RVs and Baby Boomers with a sense of retro style.

Happier Camper targets the outdoor enthusiast with its large rear hatch, wide entry door and panoramic windows. The retro-style exterior is charming and nostalgic, and its modular interior system is flexible and customizable. According to the company, "Configuring and reconfiguring is a snap" — and it also looks like a whole lot of fun.

The Dub Box's body and moon-capped wheels may look like a VW camper van straight out of the Summer of Love, but its gelcoat exterior colors, stylish and customizable interiors and pop-up roof represent something new in the world of fiberglass trailers.

The Armadillo could easily pass for the granddaddy of "egg" trailers, the Boler, and for good reason. Its rounded fiberglass body is made from the original molds of its trailblazing ancestor. Modern interiors and trendy decor bring its three floorplans up to date.

The story behind Relic Trailers is every bit as interesting as its mid-20th-century design. It involves a high school welding teacher, a warehouse in Michigan and an ad on Craigslist. Relic offers a wide variety of options in three layouts: one with a full bed, one with two twins and one with a convertible U-lounge. The rest is up to you.

No matter what options you choose, these trailers are sure to make a splash at the campground.

www.armadillotrailers.net www.dub-box-usa.com www.happiercamper.com www.relictrailers.com



RELIC CUSTOM TRAILERS



HC

The wide side door and tall rear hatch on the Happier Camper HC1 open to fit bikes and more big gear.

HENDERSON, COLORADO Weiscraft Little Joe

The 12½-foot Little Joe offers comfortable seating and sleeping areas in a small package. The two 78-inch sofas positioned along either side wall provide plenty of room to kick back and



Exterior Longth	12 6	
Exterior Length		
Exterior Width	5' 8"	
Interior Height	6'	
Exterior Height		
Freshwater Cap	5 gal.	
Black-/Gray-Water Cap	. 5 gal./NA	
LP-Gas Cap	5 gal.	
UVW, Base	.1,100 lbs.	
Hitch Weight		
GVWR	.2,999 lbs.	
MSRP, Base	\$15,300	
www.weiscrafttrailers.com		

relax. The sofas convert into a 78-by-63-inch bed for sleeping space usually found in much larger trailers. This dedication to spacious seating and sleeping arrangements means the kitchen is small by necessity, with a two-burner cooktop on one side, a kitchen sink on the other and room for an optional refrigerator. Flip-up counters are available on both sides of the kitchen for more room to prepare meals or make coffee.



chilliwack, british columbia 19-Foot Escape

With a dry weight just under 3,000 pounds and a gross vehicle weight rating (GVWR) of 5,000 pounds, Escape's 19-foot trailer is a good match for properly equipped SUVs. The trailer is small enough to take just about anywhere but still packed with amenities and generous storage and cabinet space. The 60-by-80-inch queen bed with a coil-spring mattress is ideal for taller travelers. while abundant overhead cabinets provide room for clothing and food storage. The dinette seats four comfortably and can be turned into an extra bed. The wet bath with a sink, shower and toilet comes standard, as do the cooktop. sink and fridge. Custom wood interior and oak cabinetry create a homey atmosphere. Generous tank sizes make the trailer ready for adventure.

Exterior Length	
Exterior Width	7'
Interior Height	6' 4"
Exterior Height	8' 6"
Freshwater Cap	
Black-/Gray-Water Cap	19 gal./28 gal.
LP-Gas Cap	10 gal.
UVW, Base	2,950 lbs.
Hitch Weight	256 lbs.
GVWR	5,000 lbs.
MSRP, Base	\$24,380
www.escapetrailer.com	

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RV ROUNDUP / MOLDED FIBERGLASS

BACKUS, MINNESOTA

Scamp 13-Foot Standard

Weighing 1,500 pounds unloaded, Scamp's 13-foot trailer can be towed by a variety of vehicles and will fit in even the smallest state park campsites. Despite its compact size, the trailer manages to pack in the basics. One of two floorplans, Layout 1 includes a rear dinette that converts into a bed with storage underneath. The kitchen contains a two-burner stove and a sink plus overhead cabinets. Layout 2 has a wet bath, but tank sizes are limited, so plan on combining use of bathhouses and the wet bath when sewer hookups are not available. With a starting price of \$10,500, this model makes a great alternative to a teardrop or pop-up trailer and provides an affordable entry into the often pricey world of molded fiberglass.





Exterior Length	13'	
Exterior Width	6' 7"	
Interior Height	6' 2"	
Exterior Height	8' 6"	
Freshwater Cap	12 gal.	
Black-/Gray-Water Cap.	9 gal./21 gal.	
LP-Gas Cap	10 gal.	
UVW, Base	1,500 lbs.	
Hitch Weight	200 lbs.	
GVWR	2,200 lbs.	
MSRP, Base	\$10,500	
www.scamptrailers.com		

CALGARY, ALBERTA Trillium Outback

With almost 25 customizable options, the Outback can be built with your own camping style in mind. Made with molds used to create the original Trillium trailers in the 1970s, it comes in four floorplans with possibilities for bunk beds. a mini couch, a flush toilet and a front dinette. Options include a solar-power system, a custom

appliance package, oak interior and many others that help make this small trailer feel like home at the campground or miles off the grid. The interior is stylish and modern, and shoppers can pick from more than 100 exterior colors, and even choose the sequencing of those colors to create a fiberglass trailer that is truly one of a kind.



Exterior Length	14' 2"	
Exterior Width	6' 2"	
Interior Height	6' 2"	
Exterior Height		
Freshwater Cap		
Black-/Gray-Water Cap	ŇA	
LP-Gas Cap	5-10 gal.	
UVW, Base	878 lbs.	
Hitch Weight	270 lbs.	
GVWR	2,004 lbs.	
MSRP. Base		
www.trilliumtrailers.com		





ARMSTRONG, BRITISH COLUMBIA Bigfoot 25RQ

Looking for a fiberglass trailer without compromising on size, seating and creature comforts? You'll want to check out the 251/2-foot 25RQ. The dinette extends into an L-shape, allowing for comfortable dining and a seat for stretching your legs. Counter space will fit a coffeemaker and toaster with room to spare for food preparation. The walk-around 60-by-74-inch bed will appeal to those who dislike climbing over their partner, and the wardrobe and drawers make it easy to pack for longer trips. Generously sized black, gray and freshwater tanks are perfect for boondocking, and ample cargocarrying capacity allows for the possibility of adding solar. Heated and enclosed tanks, high-density insulation and thermal-pane windows make the 25RQ a year-round travel trailer.

Exterior Length	
Exterior Width	
Interior Height	6' 4"
Exterior Height	9' 2"
Freshwater Cap.	45 gal.
Black-/Gray-Water Cap	45 gal./45gal.
LP-Gas Cap	10 gal.
UVW, Base	4,863 lbs.
Hitch Weight	610 lbs.
GVWR	7,500 lbs.
MSRP, Base	\$55,965
www.bigfootrv.com 🎞	



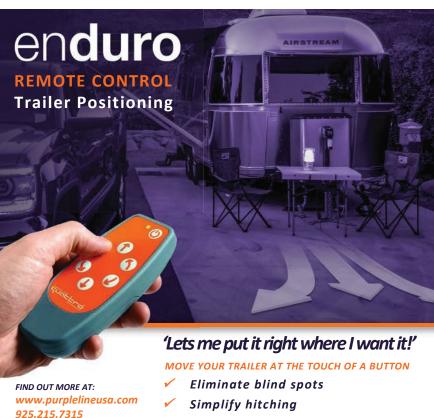
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HIT THE SLOPES!

The mountains are calling, fresh snow is falling, and with a little preparation, you can explore ski and snowboard resorts in the comfort of your RV

– by Lisa Ballard

Starting in 2006, Bode Miller, the charismatic bad boy of the U.S. Ski Team who won a remarkable six Olympic medals in alpine skiing, spent several years of his downhill-racing career traveling from ski area to ski area in an RV, despite the

fact that it was against the team's rules. Racers were supposed to stay in the team's designated hotels during the competition season, which spanned from early December through early April. Miller complained that moving from



hotel to hotel every few days adversely affected his sleep patterns, which was detrimental to his ability to perform on the slopes.

"It's completely counterproductive for me," Miller said in an Associated Press interview at the time. "I need that rest to maintain a level of training and conditioning."

Miller and his coaches remained at odds about his traveling in his luxurious Concorde motorhome, plastered on the outside with his many sponsors who helped underwrite the cost of it. He recruited a good friend from his

Traveling by RV to ski and snowboard destinations puts you where the action is. The author's son, Parker Densmore (top photo), takes to the air in a terrain park at Big Sky, Montana, while author Lisa Ballard (left) arcs turns on a corduroy-groomed slope. Right: Steamboat Springs is known for its deep powder and cowboy atmosphere. Off the slopes, you can go winter fly-fishing, cross-country and backcountry skiing, snowshoeing or take a ride in a horse-drawn sleigh. Far right: The author and a friend ride the chairlift at Mount Spokane.

hometown of Franconia, New Hampshire, to drive and cook. Not only could Miller sleep in his own bed every night, but he could hang out with friends and family and manage his own meals and travel schedule.

When the Winter Olympics in Italy arrived that February, he opted out of the Olympic Village.

Instead, he parked his RV near the slopes in Sestriere, where the men's alpine events took place. He used the same lot as the television-production trucks, which also provided him with plenty of security.

Miller was not the first person to use an RV for his lodging at a ski area, but he definitely started a trend among top athletes. His teammate Daron Rahlves, who won three world championship medals and the famous Hahnenkamm downhill in Kitzbühel, Austria, followed Miller's lead and began traveling in his own RV to ski races with his wife and dog.

Today, at many World Cup events, not just for alpine skiing but for all on-snow events, you'll find athletes in

their RVs for the same reasons as Miller and the rest of us, regardless of the time of year. It's our own place on wheels.

SNOW PLAN

Since then, camping at ski and snowboard resorts has become more and more popular. Mercedes Sprinters and similar small motorhomes are common sights in ski towns because they are nimble enough to maneuver

CONSIDER THE ELEVATION WHERE YOU ARE PLANNING TO CAMP. TEMPERATURE DECREASES 3 TO 5 DEGREES FAHRENHEIT FOR EVERY THOUSAND FEET OF ELEVATION GAINED.



A fall blizzard in Colorado's San Juan Mountains makes a beautiful backdrop while camping in an RV.



around town yet big enough to be comfortable on a multiday trip. A trailer is arguably even better than a motorhome because you can unhitch your vehicle and be free to drive around.

If you're thinking of an RV trip that incorporates skiing, snowboarding or other winter sports, here are some things to consider:

TOWING TIPS

- Leave plenty of room between you and the vehicle ahead of you.
- □ Traction is crucial: Be sure your tow vehicle and trailer are outfitted with the right tires for the conditions and are properly inflated. Some jurisdictions (which should be marked) require tire chains on at least one axle of a trailer. If you'll be towing in snow a lot, consider mud and snow or all-terrain tires for the trailer.
- Limit travel to daytime, when there's less chance of freezing or black ice.
- Do not use cruise control.
- Use the brake control carefully. You'll need the trailer brakes, but don't set the control too aggressively.



Camping at ski areas. In addition to sleeping in your own bed and having the luxury of being lax about packing, one of the prime reasons for traveling to a ski resort in an RV is saving money on lodging, even more so than in the summer. While it may be prime time at the ski resort's hotels, it's off-season at local campgrounds. In fact, many are not open, and those that are may have limited amenities compared to the summer. It's important to plan ahead, not only to reserve a spot, but also to know what's available when you get there.

Consider the elevation where you are planning to camp, too. Temperature decreases 3 to 5 degrees Fahrenheit for every thousand feet of elevation gained. Camping 10 miles down-valley from the resort might not be as convenient to the slopes, but it can make a big difference warmth-wise.

Ski area parking lots. Many ski areas allow RVs to park



IVENE AND STATE & SNOW-COUNTRY RVING TIPS

Traveling with your RV on a ski, snowboard, snowshoe or even a snowmobile trip is like other types of winter RV camping. Here are some key things to keep in mind for a cozy stay:

1. Watch the weather. It's important to know the travel conditions from home to the resort, and the weather once you get there. If deep snowfall or bitter temperatures, especially after rain, are in the forecast, consider different dates for your trip. There may be powder on the slopes, but driving conditions may be dangerous, and chances are higher that your RV will freeze up.

2. Bring or find a source of extra LP-gas. In cold weather, RVs use much more LP-gas than during warmer months, mostly to generate heat.

3. Use a small dehumidifier. Just breathing while you sleep causes more condensation than usual inside your RV. A small dehumidifier helps keep things drier.

4. Keep your utilities warm. Unlike your house, your RV's water and sewer lines are above ground and not well insulated. Take steps to keep them from freezing. Some people put insulating foam boards around their RV, between the bottom of the frame and the ground, to help insulate tanks and lines, and to keep the floor warmer. Skirts help but don't insulate as well.

5. Use small heaters to keep water lines from freezing. If you have an electric hookup at the campground, consider electric pipe heaters, holding-tank heaters and small portable heaters. Keep all pipes and hoses off the ground and out of the snow.

6. Empty the tanks when temperatures are above freezing to prevent ice from forming inside them. Consider adding RV antifreeze to holding tanks in addition to toilet chemical to prevent freezing.

7. Install insulated curtains and check the seals around the windows, skylights and doors to reduce heat loss.

8. Put a block of wood under the RV's stabilizing jacks to prevent them from freezing to the pad.

9. Bring a blow-dryer in case you need to thaw something.

10. Bring a plastic snow or grain shovel. You may need it to clear snow around the RV and from its roof. Use a plastic shovel on an aluminum or fiberglass roof. If you have a membrane roof, use a broom (like a wide push broom), and sweep the roof continually as the snow falls, as the layer closest to the roof will melt and refreeze.

11. Slideouts can freeze up and become jammed, especially if snow has fallen on them and frozen. If you have to extend your slideouts, consider covering them with a tarp and adding a layer of foam-board insulation on top of the box for added comfort.

12. Pack a windshield ice scraper. Don't pour warm or hot water on a freezing windshield, since it could crack.

overnight in a designated lot, but only for a limited number of days and sometimes for a limited number of RVs. You probably won't find any hookups. What's more, you may have to move at some point during the night or very early in the morning so the plows can clear snow. On the bright side, you'll wake up virtually slope-side, ready for first tracks!

Winter extras. Snow may be your friend on the slopes, but it can be a foe in a campground. RVing for skiing and

snowboarding is similar to any winter RV camping. You need to be prepared to protect your RV against the cold and for snow removal.

Campgrounds typically plow their roads and common areas, but you may need to keep the area immediately surrounding your RV clear of snow, as well as the roof of your rig, which is not designed to bear heavy loads. Pack a snow shovel. Consider bringing a small snowblower, too, especially if your RV has a large toy box or storage area where you can easily transport it.

Keeping yourself and your RV warm is also a concern. Most RVs are not as well insulated as houses, so you will definitely go through a lot of LP-gas, even if you supplement with portable electric heaters. It's worth watching the weather before you leave. If temperatures where you're camping are going to be below 20 degrees, consider rescheduling, or at least bringing lots of extra blankets or sleeping bags rated for subzero temperatures, in case you run out of LP-gas during the night.

Even if you don't mind sleeping in such cold, it's tough on your RV. Unless you keep it moderately warm, moisture will accumulate on the inside from your breathing, cooking, use of the bathroom, and as your clothing and gear dries out overnight, which can ice up windows, doors, floors, walls and ceilings. Consider bringing a small dehumidifier to help control humidity inside. For ideas on how to prevent your RV's utilities from freezing, see "Snow-Country RVing Tips" on the previous page.

Skis and snowboards. One of the biggest challenges of skiing and RVing is moisture management inside your RV. What you do with skis. snowboards. boots and other gear can have a big impact. If you need to store your gear inside your trailer while traveling to a ski



A gondola at Vail, Colorado, whisks skiers and snowboarders quickly up the slopes. Vail's back bowls are legendary for great snow.

area, consider putting your skis and poles, or snowboard, inside a bag, which keeps them together and prevents them from dinging up the walls, furniture and floor. However, once they are snowy and wet from use, if you put them back in a



bag and zip it up, the edges will rust.

Ideally, you should store your skis and poles, or snowboard, at the ski area's ski-check or in a rented locker, which is secure and also allows them to dry overnight away from your RV. If this is not an option and you're driving an SUV, clear off the snow and water as much as possible from your gear, then store them in your tow vehicle rather than your trailer. Store them inside your RV only as a last resort.

Boots are a different story. They need to dry thoroughly overnight for your feet to be warm on the slopes the next day, so they need to be inside where it's warm. To help them dry out, consider an electric boot dryer. There are three types: the kind that slides inside your boots and emits a low heat, the kind that blows air into your boots, and a boot bag that emits a low heat and plugs into an outlet in your RV or the 12-volt lighter socket. All three types of boot dryers should be used only if you have an electric hookup, as they require an overnight cycle to work.

If the campground has laundry facilities, it's worth throwing your wet ski clothes in the dryer rather than trying to dry them inside your RV. They'll dry more quickly and thoroughly, and they won't contribute to the interior humidity level.

Lift tickets. Staying in your RV certainly makes skiing and snowboarding more affordable compared to staying in a hotel room and eating every meal in restaurants. You can also reduce the cost of your lift ticket if you plan ahead. Many ski resorts belong to pass partnerships. Epic Pass (Vail Resorts) and Mountain Collective are the most well-known. If you buy one of these passes, you can ski or snowboard at a number of resorts around the United States and Canada. The majority of regional resorts also honor season passes from other designated mountains. If you plan to ski at only one place, you can often find discounts on lift tickets if you purchase them online ahead of time.

Bottom line. There's no need to leave your RV at home on your next ski and snowboard trip. You'll find the same convenience and camaraderie at campgrounds in the winter as in the summer, and you'll save money. And you'll double the feeling of freedom by both camping and gliding down a mountain!



TOASTY FEET To dry your boots overnight, put them inside a heated Transpack boot bag (top) or insert portable boot dryers inside them (above). Both devices plug into a vehicle's lighter or a wall socket.



SNOW CAMPING: WHERE TO GO

Many ski towns are RV-friendly, including the iconic destinations around the country. Here are some of the more popular bucket-list mountains with a few insider's tips about camping and skiing, snowboarding and snowshoeing there.

BRECKENRIDGE, COLORADO

Like many towns in the Rocky Mountains, Breckenridge was originally a mining camp. When the ski resort opened in 1961, it saved Breckenridge from becoming a ghost town. Today, Breckenridge is a huge ski resort, with 2,908 skiable acres and a vertical drop just shy of 3,400 feet. A third of its terrain is groomed daily, and 40 percent is open bowls. With 350 historic buildings, it's not just a place to ski but also a charming place to visit, and it has one of the best sushi bars in Summit County.

Pass: Epic Pass Campground: Tiger Run RV Resort. Free Wi-Fi. Free bus every 30 minutes into town and the ski slopes. www.tigerrunresort.com

GUNSTOCK, NEW HAMPSHIRE

Gunstock Mountain Resort is part of a county-owned



The coaster at New Hampshire's Gunstock Mountain takes thrill-seekers on a wild ride with 360-degree turns, rolling drops and banked corners.

recreation area. When it opened in 1937 with the first chairlift in the eastern United States, more people came to watch the top ski jumpers of the day, rather than to turn down its slopes. Though it is one of the oldest ski areas in America, today it's modern and much bigger with 55 trails (not including glades), 90 percent of which have snowmaking and 24 are lit for night skiing. Not an alpine skier? You can walk out your door onto 50 kilometers of cross-country skiing and snowshoeing trails, go tubing



down a prepared track, ride the Mountain Coaster or watch a few jumpers fly through the air on the newly renovated ski jump.

Pass: Gunstock season pass or lift tickets only

Campground: Gunstock Mountain Resort. Fullhookup RV camping at the ski area! www.gunstock.com

HEAVENLY VALLEY, CALIFORNIA/NEVADA

Heavenly Valley is, well, heavenly for skiing and snowboarding. Its 28 chairlifts take you to 4,630 skiable acres, the most of any ski resort in the Lake Tahoe area. It's also the highest, with a summit elevation of 10,067 feet. Its 3,500-foot vertical drop is the longest on the West Coast. The mountain has a variety of trails, from wide-open cruisers to steep chutes. It's also uniquely located on the California-Nevada line. You can ski from one state to the other.

Pass: Epic Pass

Campground: Zephyr Cove RV Park and Campground. Near South Lake Tahoe's restaurants and casinos. Backcountry snowmobile tours from the campground. <u>www.zephyrcove.com</u>

PARK CITY, UTAH

Park City Ski Resort was host to several of the alpine events during the 2002 Winter Olympics in Salt Lake City. The beauty of visiting Park City is the chance to also ski Deer Valley and the Canyons, which share the same historic mining town, now an upscale resort, with boutiques, interesting restaurants and numerous events. The Sundance Film Festival fills up the place, but hardly anyone skis, and you never know which of your favorite movie stars might walk by. You're also an hour's drive to Snowbird, Alta, Brighton and Solitude. There's so much skiing near Park City that you can't possibly experience it all in a week.

Pass: Epic Pass Campground: Park City RV Resort. Minutes away from the slopes and festivities in town. Seasonal and nightly reservations available. www.parkcityrvresort.com

SUN VALLEY, IDAHO

Founded in 1936 by railroad tycoon Averell Harriman, Sun Valley was the first ski area in the country to install a chairlift. Today, its "big" mountain, Baldy, offers some of the best fall-line groomed slopes in the world. Its state-of-the-art snowmaking system does a remarkable job of creating fantastic conditions when Mother Nature doesn't. Its "little" mountain. Dollar. is a treeless dome with a top-notch learning area. Free-riders can take their pick of three parks, two cross courses and 76 rails. The resort also has 25 miles of groomed Nordic ski and snowshoeing trails. **Pass:** Mountain Collective **Campground:** Meadows RV Park. Views of the ski runs on Baldy. Free Wi-Fi, 50-amp full-hookup sites and on-site laundry. www.meadowsrvpark.com 🎞

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WATCH YOUR BACK

INVESTING IN A TPMS FOR TRAILERS AND FIFTH-WHEELS CAN REDUCE ADVERSE WEAR AND BLOWOUTS, AND BOOST SAFETY AND FUEL ECONOMY

- by Bruce W. Smith

It's easy to know when a tire is underinflated on today's later-model tow vehicles because a flashing icon on the dash screams out there's a problem that requires immediate attention. Automatic monitoring of tire pressure has been standard on vehicles sold in the United States since September 2007.

Having mandated tire-pressure monitoring systems (TPMS) has saved countless lives over the years, not to mention improving fuel economy and reducing operating costs related to running tires at pressures lower than recommended by the vehicle manufacturer. However, that's not the case when it comes to trailers, where monitoring tire pressure is left up to the owner. That means checking trailer tires before heading out and keeping a close eye on the mirrors for signs of tire problems on the road.

The latter isn't always easy, especially when towing longer trailers, towing at night and on bad roads, or when weather conditions are on the poor side, making it difficult to see the trailer tires. Running a tire at low pressure as a result of poor

TIRE FAILURE ON A TRAILER ISN'T ALWAYS EASY TO SEE, AND THE DAMAGE THAT RESULTS FROM A BLOWOUT CAN FAR EXCEED THAT OF JUST REPLACING A TIRE AND WHEEL. A TRAILER TPMS CAN HELP PREVENT SUCH PROBLEMS. maintenance practices, damage or a puncture can result in accelerated tread wear and, more importantly, excessive heat buildup that can lead to ply separation and a blowout. In too many cases, collateral damage, leading to expensive trailer repairs, is the direct result of a tire blowout.

Fortunately, the TPMS industry is aware of safety concerns when it comes to trailer tires. This has resulted in a robust aftermarket of TPMS products that affords trailers the same tire-monitoring benefits as those in the tow vehicle. It's just a matter of finding a system that fits your needs and budget.

TPMS Fundamentals

In the automotive world, there are two types of tire-pressure monitoring systems: direct and indirect. Direct TPMS measures actual air pressure in the tire through a battery-powered sensor mounted to the valve stem or a sensor on the inside of the tire.

Indirect TPMS uses the vehicle's onboard computer system to compute tire pressure by wheel RPM through input from sensors on the antilock brake system and other parameters, and comparing one tire speed against the others. A tire with lower air pressure is smaller in rolling diameter than one with higher inflation, so the computer "infers" there's a low-pressure problem because the underinflated tire will consistently roll at a higher RPM.

Regardless of the type of TPMS on the tow vehicle, when the system senses low air pressure

through actual or inferred tire pressure, the tire-pressure warning flashes on the dash, and it will remain on until the issue is resolved and the TPMS is reset.

Systems designed for trailers work in much the same way, but all utilize the direct method because there're no onboard computers involved. When a tire pressure drops below a certain level, the TPMS warns with a visual or audible alert, or both, that there's an issue.

"It's important for consumers, especially those that tow, to understand the long list of benefits added by

 (A) Cap-style TPMS sensors are the least-expensive way to monitor trailer-tire pressures, other than using a handheld gauge. This one from RealWheels replaces the valve-stem cap. It flashes a warning when tire pressure drops 5 to 10 PSI lower than when the sensor was initially installed. These are especially good for small trailers.
 (B) Wireless sensor caps send data to a signal booster, which then broadcasts that constant stream of information to a display monitor located in the cab of the tow vehicle or a smart device. Some TPMS systems can monitor tires on multiple trailers.

Monitoring Trailer Tires

For trailers, tire-pressure monitors are available in basically two types: flow-through and pressure-cap. Both rely on measuring actual air pressure, as direct TPMS does on the tow vehicle. But aftermarket systems don't integrate with the vehicle's system and rely instead on separate sensors and monitors.

The most basic systems for towables have some sort of indicator that replaces the screw-on valve-stem cap. The indicator in the cap lets you "see" when tire pressure is below a preset level, and some light up as a warning. These systems are inexpensive, but even the brightly illuminated ones may not be noticed while in transit.

That's where the more sophisticated, and more expensive, trailer systems come into play. They employ a traditional battery-powered intire-type sensor, but are attached to the valve stem or a flow-through cap attached to the valve or valve



installing a TPMS on trailers," says Vanessa Hargrave,

COO/CMO of Advantage PressurePro, a leading TPMS

pressure isn't just important for adding fuel efficiency

and extending tire life, but also because under- or over-

inflated tires have a negative effect on handling, reduce

braking ability and increase the chances of experiencing

[tire] failure that leads to danger for not just the driver and

the occupants but for others on the road," Hargrave says.

Providing the data needed to maintain optimal tire

supplier for towables.

stem that broadcasts tire pressure. These types of sensors often transmit internal tire air temperatures as well.

All of the above sensors have a tiny transmitter that sends a constant stream of data via a very weak radio signal to a repeater (or signal booster), which broadcasts the data to a stand-alone monitor on the dash or transmits it to an app on a smartphone or similar device.

Some of the more expensive systems for trailers allow the end user to set low-pressure, highpressure and high-heat warning levels as needed for that application. But setting those pressure-warning parameters isn't always as easy as it might seem.

"From an educational standpoint, the sidewall of every tire has the maximum pressure for that tire at a given load," says Al Cohn, director of product development at Pressure Systems International, parent company of Truck System Technologies (TST), noting that the preferred inflation is based on the actual weight carried by that tire as noted on the tire manufacturer's load-and-inflation table, if available.

Aftermarket systems for towables operate in a different frequency range (433.92 megahertz in North America) than factory automotive sensors, and with different signal strengths and protocols dictated by the FCC so the two systems won't interfere with each other.

"Manufacturers embed unique ID numbers within each sensor," says TST Vice President Mike Benson. "In our case, you have to physically pair each sensor with a TST display."

That's what keeps the TPMS



Right: Some TPMS applications monitor trailer tires even when the trailer is not attached to the tow vehicle, which can prevent tire damage caused by the trailer sitting on the rims.

on your vehicle or trailer from picking up the sensors in other vehicles on the road. Another way to understand this concept is to think telephones: each TPMS sensor has its own unique phone number, and the monitor is programmed to take only the constantly streaming phone calls from the sensors mounted on your vehicle or RV.

Worth the Investment?

Is it worth it to invest in a trailer TPMS? That's a question you can answer by weighing the expense of the system against the safety aspects it offers, along with such things as the potential costs of replacing a damaged trailer tire and rim and repairing collateral damage to the trailer, and the benefits of reduced tire wear and improved handling and fuel economy.

On the tire side alone, it's not unusual for a good-quality trailer tire and matching aftermarket rim to cost between \$150 and \$300, depending on brand and style, not counting the time lost making the repairs. Catastrophic trailer-tire failures also tend to damage the underside of the trailer, wheel well and body panels, all of which cost far more to repair than replacing a tire and wheel. Then there's the possibility of the ensuing debris causing damage to vehicles that are sharing the road.

Granted, installing a TPMS on a trailer doesn't guarantee an end to tire-related problems. But a good system can monitor what's happening inside each tire in real time and warn the driver when there's an issue. When it comes to tires, air carries the load, and a TPMS lets you see how well that's being done.

To give an idea of what's on the market, we've assembled 13 systems that are suitable for towing applications.





Originally designed for horse trailers, the **Bellacorp TPMS** monitors any combination of trailer axles and tires running air pressures up to 178 PSI. The user sets high-pressure, lowpressure and high-temperature alerts, while the system automatically trips slow- and fast-leak alarms. To install, the user screws on the preprogrammed sensors to the tire stems and turns on the monitor. The kit comes with 10 sensors, a repeater and a signal booster. MSRP: from \$209. www.bellacorptpms.com

Low-energy Bluetooth sensors are the heart of the **Blu TPMS** that allows users to monitor pressure and temperature on up to 32 tires from an Android or Apple IOS device. Warnings can be set up to sound through the vehicle's audio system. Available with external (screw-on) or internal (professionally installed) sensors in two-, four- and six-wheel kits, the TMPS has an optional signal repeater for long vehicles. MSRP: from \$75. www.techbyblu.com



The **Carchet TPMS for RV Trailers** features screw-on caps that wirelessly transmit pressures and temperatures to a dash-mounted LCD monitor where the data is displayed. The system handles air pressures up to 99 PSI (so trailers with bigger wheels need not apply) and temperatures up to 176 degrees on as many as six tires. Visual and audio alarms go off when user-set upper and lower limits are reached. MSRP: from \$200. www.carchet.com



Compatible with 2-, 4-, 6-, 8- and 10-tire applications, the **Dill Trailer TPMS** allows the user to program a custom baseline air pressure on internal sensors for each tire. The back-lit, dash-mounted display shows pressures up to 188 PSI and temperatures from -40 to 257 degrees Fahrenheit. Kits include a 12-volt DC plug-in and a fused hardwire kit. MSRP: from \$399. www.trailertoms.com

www.tratter.pms.co



The **Doran 360RV** provides the driver with updates via the digital LCD monitor, which mounts on a pedestal or clips to the visor. The flow-through-cap system monitors up to 36 tires. Visual and audible alerts are provided through multiple alarms for low pressure, fast leaks and high temperature. MSRP: from \$200. www.doranmfg.com



The **EEZ RV EEZTire E518** monitors up to 26 tires and pressures up to 210 PSI. Sensors screw on in place of the valve-stem cap. If there's an issue, the monitor flashes the tire position and gives visual and audible alarms. The USB-charged monitor is motionsensitive and shuts down after 15 minutes when no vibration is detected. Flow-through and anti-theft sensors are available. MSRP: from \$259. www.eezrvproducts.com



The sun powers the HawksHead Solar Impulse 4 monitor, while four screw-on sensors keep an eye on trailer-tire pressure up to 80 PSI. The system comes with a signal booster to extend the sensors' range for trailers up to 30 feet. The user customizes the monitor's visual and audible alarm settings to match the trailer's tires. MSRP: \$195. www.tpms.ca

Keeping an eye on trailer tires with the user's existing smart device, the **PressurePro FX** provides 24/7 monitoring of pressure up to 280 PSI and temperature. It features five different alerts

(two low-pressure, high-pressure, high-temperature and cross-axle), and sends data from its screw-on, waterproof sensors. MSRP: \$225. www.pressurepro.us Valve-stem sensors on the **RealWheels LED AirGuard Set & Go** memorize tire pressure when initially installed and flash bright red if tire pressure drops. Sensors monitor tire pressures up to 180 PSI and can be recalibrated by removing and reinstalling. An optional locking system helps keep the sensors from being stolen. MSRP: \$70/four-pack. www.realwheels.com

Designed for single- or dual-axle trailers up to 25 feet long running tire pressures up to 70 PSI, the **TireMinder Trailer TPMS** has a solarpowered LCD monitor. The windshield-mounted color display simultaneously shows pressure and temperature readings for up to four tires. The kit includes a hardwired signal booster for maximum distance and reliability of its screw-on sensors. MSRP: from \$149. www.minderresearch.com





TPMS systems can take 10 to 20 minutes to set up and pair all sensors. RV Innovations' **Tire Patrol TPMS** expedites the process with pre-assigned sensors clearly labeled for each tire. The monitoring system comes with a hockey-puck-size Wi-Fi hub that's mounted in the trailer where it broadcasts the tire data to a 7-inch Command Center tablet mounted in the tow vehicle. Tire Patrol can monitor up to 14 tires on two vehicles, with audible/visual warnings for flats or over-heat situations. MSRP: from \$395.

www.rvibrake.com

Capable of monitoring up to 22 tires, the **TireTraker TT-500** features an easy-toread display and continuous monitoring of pressure up to 232 PSI and temperature with automatic updates. Visual and audible alarms alert to low and high pressure, high temperature and rapid pressure loss. MSRP: \$289/ four-tire system.

www.tiretraker.com

The highly configurable **Truck System Technologies 507 Series** can monitor up to four towables, plus the tow vehicle, if needed. Several external sensor types are available to suit the application: flow-through for the tow vehicle, caps for RVs and utility trailers, and hybrids for boat trailers. All 507 Series sensors work seamlessly together and are theft-resistant. MSRP: from \$299. www.tsttruck.com







HEAT OF ΜΟΜΕΝΤ TRAVEL TRAILER AND FIFTH-WHEEL OWNERS CAN TAP INTO CONTINUOUS HOT

WATER AND QUIET, EVEN HEATING WITH THE NEW AQUA-HOT 250P

The smiles you see on the faces of families coming out of those big diesel motorhomes on cool autumn mornings in the campground have a lot to do with the good night's rest and hot showers everyone enjoyed. Long a staple in half-milliondollar-and-up mobile residences, hydronic heating systems now are available for all RVers. Hydronic

systems supply an unlimited amount of hot water and quiet, evenly distributed moist-air heating throughout the interior.

Throughout its history, beginning in 1984, Aqua-Hot has focused on making heating units for the motorhome market. The good news for owners of travel trailers and fifth-wheels is that Aqua-Hot recently introduced

a smaller LP-gas- and electricpowered system that can be installed in towable RVs.

Hydronic systems work much like radiant heaters in cars. An antifreeze-based fluid circulates through the system and maintains a temperature of 190 degrees Fahrenheit for heating. When warmth is needed, up to five heat exchangers come on to deliver a

1) Before pulling out the original forced-air furnace to make room for the new Aqua-Hot 250P hydronic heater, a reference photo is taken of the wiring. 2) The old furnace is removed, (3) along with the wiring converter and air-conditioning panel, (4) and the new Aqua-Hot unit is installed in its place.



moist, even heat without drying the air. For domestic hot water, water flows through the boiler unit and maintains a 120-degree temperature.

John Carrillo spent nine years at Aqua-Hot as a production worker, service technician and technical adviser before leaving in 2008 to start Heat My RV and do business as an independent hydronic-heating specialist. With his office located across from Aqua-Hot's headquarters in Frederick, Colorado, Carrillo has been a go-to guy for Aqua-Hot repairs and installations. An RVer himself, Carrillo travels to Arizona and California in January and February to service RV heating systems at events and rallies, including the giant Quartzsite, Arizona, show.

When Carrillo offered to give us an inside look at the installation of the new Aqua-Hot 250P in his Grand Design Imagine travel trailer, we took him up on it.

PREPARATION AND INSTALLATION

For the installation, the drawers and cabinet facing covering the Imagine's original forced-air furnace were pulled out. From there, the original LP-gas furnace was quickly removed.

The 250P measures about 12 by 13 by 22 inches and weighs 84 pounds. Surprisingly, it fit perfectly where the old furnace sat. There are many options concerning where to place the unit, including the front storage compartment, but with cargo space always at a premium, using the old furnace bay was a no-brainer.

Once the hole in the flooring of the trailer for the unit's exhaust manifold was cut, the technician spliced into the potable water lines and connected



Produ	ct	Aqua-Hot 250P
Difficulty		بوبوبوبوبو
Cost	\$5,887-\$10,0	00, depending on
	complexity	of the installation
Warranty		Two years
www.a	quahot.com	

them to the new system, which are on top for ease of installation. A reservoir mounted on the wall above the system will make it easy to top off the heating system antifreeze fluid through the exterior-access panel. An exhaust pipe was dropped down with an elbow, sending the heat from the unit out the side. Because the system runs on



HYDRONIC-HEATING ADVANTAGES

Continuous, tankless hot water: In the Aqua-Hot 250P, water flows at 1.5 gallons per minute, with no recovery time.

Even heating: Multiple heat exchangers installed throughout the RV warm the air.

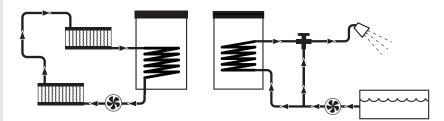
Quiet heating: The system is barely audible, without the noise of forced-air furnaces.

Fuel efficiency: The system burns LP-gas when 120-volt AC power is not available, and the electric element can be used when connected to shorepower.

Low emissions: LP-gas burns clean with no smoke or smell.

Virtually maintenance-free: All that's required is checking the antifreeze level a couple of times a year, and removing and cleaning the flame detector with a Scotch-Brite pad. The company also recommends running the unit a minimum of once per month for optimal performance.

How It Works



> INTERIOR HEATING: Specially formulated antifreeze is heated by the burner in the main heating unit (left). A circulation pump pushes the hot antifreeze to each heat exchanger using a closed-loop system of tubing. When a zone calls for heat, the exchanger fan comes on, pushing hot air. Cooled antifreeze returns to the burner plenum for reheating. HOT WATER: In the hot-water system (right), potable water is heated through an isolated loop, requiring no tank. The water runs through the coil where it is heated and flows, on demand, to the RV's faucets. propane or electricity, no smell or smoke is discharged.

The most laborintensive part of the installation required dropping the underpinning beneath the trailer to run the plastic piping for the antifreeze and electrical wiring to operate the heat exchangers. Runs were made to each of the five







10-11) Water lines are hooked up,
12) and the fittings are tightened.
13) A harness pigtail is made for the Aqua-Hot 250P's eight-pin connector.

heat exchangers, which consist of a combination of the two-fan, 8,200-Btu Cozy units and the smaller single-fan, 4,000-Btu Whisper units.

At the rear of the trailer, the existing water heater was pulled out, and one of the heat exchangers was mounted in its place. That left additional storage space, and Carrillo plans to have a detachable door fabricated to cover the opening.

After mounting the heat exchanger in the waterheater opening, a vent passage to heat the primary living space was cut. Additional exchangers were placed beneath the kitchen island, in the primary living area, and inside the bathroom to heat it and the bedroom. One heat exchanger was mounted in the front storage bay to keep it and the entry point for the water systems warm. A direct connection was established from the heat exchangers to the vents, plus the existing ductwork, to move heat throughout the trailer.

After the plastic pipe and heat connections were made, 6 gallons of propylene-glycol antifreeze solution were used to fill the system. Aqua-Hot recommends making a 50-50 mix, which can change depending on the brand of antifreeze used. The connection for the electrical element was then completed. The LP-gas and electricelement switches were mounted next to the existing thermostat using the wires from the original switches. The furnace wires were connected to the LP-gas switch and the water-heater wires to the electric-element switch.

OPERATION AND EVALUATION

As the Aqua-Hot 250P went to work, the antifreeze mixture got up to its 190-degree Fahrenheit target within 10 minutes, before shutting down the LP-gas connection and using the electric element to maintain temperature. For daily dish- and handwashing, the electric element will be up to the job, requiring use of LP-gas only when taking showers or other high-use hot-water tasks.

The 250P was, in fact, whisper quiet, sounding similar to a white-noise unit. Once the cabinets in the bedroom are reinstalled, the noise will likely be barely perceptible. Hot water left running for more than 10 minutes had no drop in temperature. Little noise was apparent, but you could feel hot air by placing your hands or feet near the heat registers.

Aqua-Hot tests show a usage of .7 gallons of LP-gas per hour when in constant use, compared to approxi-



14) An 8,200-Btu Cozy heat-exchange unit is shown here on the bottom, with a smaller 4,000-Btu Whisper heat-exchange unit on top. 15) Ends of the plastic tubing that carry the antifreeze solution to the heat exchangers are taped together, (16) then the tubing is routed underneath the trailer. 17-19) A Whisper heat exchanger is installed beneath the kitchen-sink cabinet. 20) A Cozy heat exchanger is installed beneath the bathroom sink using a plenum. 21) The plenum allows the heat exchanger to hook up to the existing ductwork.

mately .5 gallons per hour when the stock furnace (40,000-Btu) and water heater (10-gallon/10,000-Btu) were in operation. That said, having the burner run continuously is uncommon, as it engages only until the internal temperature reaches roughly 190 degrees, then shuts off, according to the company.

Harold Odgen, Aqua-Hot's director of sales and marketing, says the retail

22

TECH TI<u>P»</u>

Winterizing the potable-water side of the Aqua-Hot system

Since there is no tank or bypass, winterizing your RV with the Aqua-Hot 250P is essential and easier than with a standard water heater. Do not use compressed air on any RV with a demand water heater. Drain the freshwater tank completely, then connect a pickup hose to the intake side of the demand water pump. Insert the end of the hose into a gallon of RV/marine potable antifreeze, turn on the pump and open every faucet in the RV one at a time until the antifreeze starts flowing. It will probably take at least a couple of gallons. Make sure the antifreeze flows through both hot and cold lines, and that you get the washer and dryer hookups, outside shower and low-point drains flushed as well. There is no need to winterize or drain the antifreeze solution from the circulating system for the heat exchangers.

price for the 250P is \$3,887, plus the heat exchangers, plastic tubing and accessories, which add from \$1,000 to \$1,500 to the installation cost.

Labor can range from \$1,000 to \$5,000, according to Carrillo, with the final cost being determined by the length of the trailer or fifth-wheel and number of heat exchangers required. Owners will be encouraged to send photos and any wiring diagrams they have to determine the installation cost estimate. Aqua-Hot has more than 200 authorized service centers with more than 800 certified technicians.

22-24) The vent is modified to hook up to the ductwork. 25) The original water heater is removed from the back of the trailer.



26) A hole is cut in the wood for a Whisper heat exchanger, which will be mounted in the location of the old water heater. 27-28) The Whisper unit installed in the front storage compartment will heat the utilities. 29) Old ductwork is removed underneath the trailer, (30) and wiring for the heat exchanger is installed.

31) After connecting the LP-gas line, a test for leaks is performed. Once the install is complete, a full-system leak down test should be completed. 32) Antifreeze mixture is pumped into the Aqua-Hot unit. 33) The exhaust pipe is connected to the unit through the hole cut in the floor. 34) Propane and electric switches are mounted inside the trailer. 35) Viewed from outside the trailer, the Aqua-Hot unit now occupies the space where the original furnace was located. 36) A fitting closes off the propane lead to the old water heater, which is also disconnected underneath the RV, as required by NFPA 1192. 37) The connection is made for the electrical element. 38) Antifreeze is topped off through the old furnace entry point.



TECH

LIPPERT COMPONENTS OFFERS A SYSTEM THAT APPLIES THE TRAILER BRAKES TO PREVENT POTENTIALLY PERILOUS LATERAL MOVEMENT FROM GETTING OUT OF CONTROL

- by Chris Dougherty

LCI SWAY COMMAND

Cost \$369.95 Difficulty هر مر مر مر Time 1 hour As a trailerist, you've likely had at least one encounter with trailer sway. If you haven't, you're lucky. Trailer sway can not only be frightening, but it can lead to a catastrophic accident, if allowed to get out of control.

Many factors can induce sway, including a mismatched or poorly set up hitch, an imbalanced trailer with inadequate hitch weight, bouncy tow-vehicle suspension, broken trailer suspension, and a short tow-vehicle wheelbase combined with high-profile tires. Other contributors include crosswinds, passing vehicles, emergency lane changes, driving off the edge of the road and tire blowouts.

Having a suitable tow vehicle equipped with a goodquality, properly adjusted weight-distributing and sway-control hitch, along with good trailer weight and balance, can minimize sway, but nothing can eliminate it altogether. The key is reacting properly before it gets out of control.

Some 2019 tow vehicles are equipped with systems that arrest sway on the tow-vehicle side by applying individual brakes using a predetermined algorithm. However, sway is best controlled by applying the trailer brakes in a timely fashion to bring the trailer back in line with the tow vehicle. A driver can do this by using the manual brake lever on the brake control, but often a sway event causes the driver to panic, apply the brake pedal and try to turn into the sway, which usually amplifies the lateral movement. And, if the brake control is not adjusted correctly, it will not apply enough power to the trailer brakes.

Sway Command from Lippert Components is an easy-to-install system that senses sway and applies the trailer brakes to control the lateral movement. It utilizes gyroscope and accelerometer technologies with proprietary algorithms that continuously monitor for sway events.

1) The Sway Command was installed on the front cross. The central unit must be located between 4 and 10 feet from the hitch. Mounting it farther back would necessitate dropping the underbelly and fabricating a mounting plate to attach to a truss, which would make it impossible to disconnect, should the trailer be towed with an incompatible vehicle. The device is water-resistant but not waterproof, according to Lippert, so mounting must be in a location where it will not be subject to a high-pressure spray. 2) The included multipin wiring harness connects the Sway Command to power, ground and the brake wire on the trailer.



When the device detects the absence of sway, it returns to its normal monitoring mode. An LED monitor is mounted on the front of the trailer, which flashes red for active sway and green when the trailer is behaving normally. The green light also lets the driver know that the system has been activated.

Sway Command does an excellent job of regaining control of the trailer, but it's important to note that electronic sway-control devices are not a panacea for trailer sway. To reduce sway and improve towability, the mechanical factors mentioned above must be addressed.

Lippert Components www.lci1.com/sway

REQUIRED TOOLS

- □ Screw Gun/Drill
- 🗆 Drill Bits
- 🗆 Wire Stripper
- □ Wire Cutter
- Tape Measure
- □ Marking Pencil/Crayon
- 🗆 Utility Knife

ADDITIONAL MATERIALS

- Trailer-Brake Cable
- Solderless Butt
 - **Connectors with Heat Seal**
- □ Heat-Shrink Tubing
- □ 3M Scotchlok Connectors
- 🗆 Ring Terminal
- □ Self-Drilling Screws
- 🗆 Sealant
- Cable Stays
- □ Cable Ties

3) The wiring harness was too short to reach the junction box on the test trailer, so we used a cable to extend the power and brake wires, and grounded the unit to the frame. 4) The connections to the brake cable were sealed with heat-shrink tubing before tying the harness up neatly.



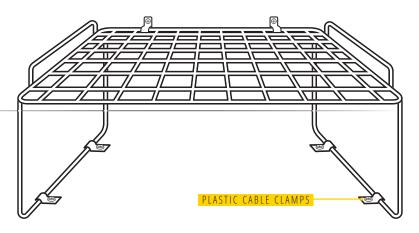
VEHICLE COMPATIBILITY It should be noted that Lippert's Sway Command is not compatible with all tow vehicles, including most GM vehicles produced since 2014 with an integrated trailer-brake control. Visit www.lci1.com/sway before purchasing, to verify compatibility. There's also an excellent video on the website that shows how the device works, and what happens when the unit is turned off and sway is induced. It's quite convincing.



5) The 12-volt DC power wire from the seven-way umbilical cord and the brake-activation wire were connected in the junction box. 6) A useful feature is the light pod, which is mounted to the front of the trailer in view of the driver. It was at the center of the test trailer, above the view normally obstructed by the truck bed. Alternatively, it could be mounted on the driver's side so it could be viewed via the mirror. The light glows red when the device is activated during sway and green when the event has been terminated. Cable mounting bases and ties were used to secure the light-pod cable to the front of the trailer where the battery box and propane cylinders mostly hide it. It is also possible to run the cable inside the trailer, if desired.



We used wire-grid stacking utility shelves to add "second level" internal shelving inside some of the cabinets in our RV. To keep them from moving around during transit, I fastened them in place with ¼-inch plastic cable clamps. I attached the clamps on the back of the top edge and the front of the bottom of the legs to act as anchors. I used Phillips #8-by-3/8-inch pan-head screws to fasten the clamps to the wall and floor of the cabinet. **Leonard Enger,** Newnan, Georgia





Put the Clamps On

• We do not have gas struts on the upper cabinet doors in our RV. It has always been a hassle to hold a door open while putting things inside or taking them out, so I installed a baggage-door holder on the ceiling for each cabinet. Problem solved. **Dennis Andreas,** Boise, Idaho

Tech editor's note: Be sure to use properly sized

screws so you don't breach the roof. Also, you want to keep the screws from pulling through the ceiling material. Using double-sided mounting tape in addition to the screws would be helpful.



Get a Grip

• The woven-web plastic handle that came with the water-softener tank was wearing out and needed to be replaced. The new handle had to be something substantial that would make lifting the heavy and bulky tank easy. I cut a 1¼-inch wooden dowel to fit the width of the water-supply housing. I then drilled two ⁹/₃₂-inch holes in the dowel and threaded a length of ¼-inch poly rope

through each hole, making loops to fit around the water fittings. I tied figure-eight knots and burnished the ends with a torch to prevent unraveling. **Dan Quinn,** Sioux Falls, South Dakota

EXPERT ADVICE

Checking air pressure and lug-nut integrity on trailer tires is an important aspect of towing. While it may seem like a chore, the actual time it takes to confirm that the pressure is right and the lug nuts are torqued to spec is minimal, and it should be part of your regular routine before driving out of an RV park or storage lot. To facilitate the process, purchase a ³/₈-inch ratcheting torque wrench from a tool or auto-parts store and an appropriately sized deep socket. Make sure the socket walls will clear the spacing between the lug nuts and the wheels. It may be necessary to purchase a short extension, depending on fender clearance. If you don't have a tire-pressure monitoring system (see "Watch Your Back," page 38), Milton makes a dual-head service gauge that is very accurate, and Roadmaster markets a dial-type gauge that's easy to read. Having a portable air compressor onboard will circumvent the need to chase filling stations. -Bob Livingston Publisher Emeritus 🎞

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To submit a DIY tip, email 10minutetech@trailerlife.com or write to *Trailer Life*, 10-Minute Tech, 2750 Park View Court, Suite 240, Oxnard, California 93036. Provide a selection of good-quality high-resolution photos. *Trailer Life* will pay \$35 for original 10-Minute Tech ideas. All payments require an SSN or FEIN.



*Original coupon only. No use on prior purchases after 30 days from original purchase or without original receipt. Valid through 3/14/19

t Harbor Freight Tools, the "Compare to" price means that the specified comparison, which is an item with the same or similar function, was dvertised for sale at or above the "Compare to" price by another national retailer in the U.S. within the past 90 days. Prices advertised by other ray vary by Icostion. No other meaning of "Compare to" should be implied. For more information, go to Harborfreight.com or see store associate

ECH RV MAKEOVER



WINGED WONDER A CLASSIC 1960 SHASTA COMPACT

INVESTMENT () Total Cost: \$6,500 | Time: 9 weeks

TRAVEL TRAILER GETS SPRUCED UP

My husband, Lee, and I searched for two years to find the perfect vintage travel trailer to restore. When we finally found our baby, a 1960 Shasta Compact that we bought for \$1,200, people thought we were nuts, but I had a clear vision of the end result.

Although the jalousie windows were in great shape, the back window had leaked, so I told Lee that was all he needed to fix. Boy, was I wrong! We wound up replacing most of the wood paneling and cabinetry, and putting in new wiring, insulation, plumbing and vinyl flooring.

Our idea was to keep the interior looking as

RV RENOVATIONS

possible while adding modern conveniences. We replaced the stove and refrigerator with a larger fridge. We made the closet bigger and turned it into a bathroom with a sink and portable toilet. And we added a small closet and a cabinet with two drawers, as well as a TV, DVD player and compact air conditioner. We decided to paint

close to the original as

the trailer's exterior yellow and white to match our tow vehicle, a 1957 Chevy Bel-Air four-door Townsman wagon. Surprisingly, after spending a week stripping off the four coats of paint, we found



VINTAGE VIBE The trailer's original dinette table was missing, so the Gearys had one made with retro-style coral laminate that was also used on the counters. The table detaches and rests on the seat ledges to make a full-size bed.

that those were the trailer's original colors. The iconic Shasta wings were missing, so we had new ones made.

Lee was retired when we bought the Shasta, and he worked on it day and night for nine weeks. We have been happily camping in it ever since.

Lu Ann Geary Owensboro, Kentucky 🎞

Have you modified your RV or remodeled it completely? Tell us about it in 250 words or less, including the total cost and time spent, and email your description to **info@trailerlife.com**. Include an ample selection of photos illustrating the project, along with your full name and mailing address. We'll pay \$50 for every RV Makeover we publish.



SOMETIMES TAKING A DIFFERENT PATH LEADS TO THE



ABSO DC-DC BATTERY CHARGER \$349.99

The Abso DC-DC DMT-1250 50-amp multistage battery charger from Kisae Technology is ideal for off-the-grid RVing because it can charge up to a six-battery bank from the tow vehicle's alternator or from a solar panel through the charger's microprocessor-controlled, three-stage circuitry. The MPPT (maximum power point tracking) solar side (built in) of the dual-input DC-to-DC charger maximizes power and shortens recharging time of gel-cell, flooded, AGM or lithium batteries. www.kisaepower.com



KING DISH TAILGATER FROM \$299

RVers can lock into the Dish network from coast to coast with either of King's newly reengineered Tailgater satellite-TV antennas that view both western and eastern satellites. The compact Dish Tailgater (DT4400) and premium Dish Tailgater Pro (DTP4900) automatically target satellites at 61.5, 110, 119 and 129 degrees when used with a Dish HD Solo receiver; upper-Northeast coverage requires use of the Wally receiver. The clear-domed Tailgater Pro works with multiple TVs. www.kingconnect.com



SUPERHITCH MAGNUM 30K \$890

Concerns about towing heavy trailers are easily soothed with the SuperHitch Magnum 30K from Torklift. Part of the SuperHitch Outlaw Series, the high-capacity hitch receiver is rated to tow an impressive 30,000 pounds and carry 3,000 pounds of hitch weight, or the maximum tow and rear-axle weight ratings, respectively, of your tow vehicle, whichever is less. The SuperHitch Magnum's dual stacked receiver, capable of handling 2- or 2½-inch ball mounts, provides towing versatility. Most applications don't require drilling. www.torklift.com

PEDEGO ELECTRIC BIKES FROM \$2,295

The secret sauce in Pedego e-bikes is the pedal-assist technology. Set your preference on the touch screen on the handlebars, and just as the pedaling starts to get tough, the electric motor helps you get up that hill or accelerate from a standing stop. The 15 models, including a tandem and a trike, look similar to conventional bicycles except for the lithium-ion battery pack and, on most models, the touch screen. Of course, there's also the electric motor, but the motors are surprisingly small and cleverly built into the rear hub or integrated into the downtube near the pedals. Pedego bikes also work just like their conventional counterparts in that you can ride them in manual mode, pedaling at up to five speeds. The lower pedal-assist settings provide a combination of exercise and cruising, while the higher settings feel like let's just say it — cheating. Using the throttle or pedal-assist, the bikes go up to 20 miles per hour. Pedego estimates the range to be from 20 to 60 miles, depending on battery-pack capacity, the motor on the various models and, of course, riding conditions. www.pedegoelectricbikes.com



STAFF PICK I tried out a bright-green Latch bike at the Santa Barbara, California, Pedego store, and it zipped easily to the top of the bluffs overlooking the harbor. The Latch folds down to fit in a decent-size RV storage compartment. Hey, Sweetie, the holidays are coming (*hint, hint*). — Bob Dawson, Production Director

FREE RIDE! ENTER TO WIN A PEDEGO LATCH FOLDING ELECTRIC BIKE AT www.trailerlife.com/pedegogiveaway/2018. See Page 13.

BRIDGESTONE BLIZZAK LT TIRES FROM \$180

Winter is drawing close, and those who travel in snowy, icy and slushy conditions can drive with confidence riding on Bridgestone Blizzak LT tires for heavy-duty pickup trucks and SUVs. Manufactured in Canada in 11 sizes, the dedicated winter tires feature a new rubber compound that Bridgestone says extends tire life. The tires also have a new tread pattern with biting edges for enhanced snow traction and numerous water-evacuation channels to help reduce the chance of hydroplaning. www.bridgestonetire.com





REPAYMENT IN FULL

Following a tire incident that damaged his dual-axle trailer, a Florida reader asked RV Resolutions to intervene when part of his insurance claim was denied:

A while back, we lost a tire and wheel on our travel trailer. The damage to the undercarriage of the trailer was completely repaired. The problem is that the original wheel rims are no longer available, and the RV repair shop purchased a replacement wheel that has a different offset. Because of the different offset, the tire that extends further out on a turn takes more of the load than the tire on the other axle. This can cause the tire to wear or, at worst, destroy the sidewall.

When part of a pair is damaged, my insurance policy covers the cost of a substitute part that "reasonably matches" the remainder of the pair. My insurer denied the claim for a different wheel rim, saying it was not a reasonable match and that it would result in "betterment," making the trailer better than it was. No, it would result in making the trailer safe, like it was.

Enclosed are copies of the repair bills showing damages paid for by the insurance company and those I paid out of pocket. I am asking for your help getting reimbursement for the \$256.43 cost of the replacement rim, center cap and lug nuts.

Mark O'Connell, Rockledge, Florida

THE COMPANY RESPONDS

RV Resolutions reached out to Mark O'Connell's insurance provider and heard back from an adjuster in the Fort Lauderdale office:

We've resolved all issues of your reader, Mark O'Connell, and thank you for bringing this to our attention.

Garen Bedau, Special Lines, Progressive Corporation, Fort Lauderdale, Florida

O'Connell confirmed that the matter had been settled:

CF A few days after I received a copy of the letter you sent to Progressive, I received a phone call from an agent asking what I was looking for. It's not like I hadn't explained it to them half a dozen times already. After explaining the situation again, I was told that a check for full reimbursement would be sent out. A few days later, I received it. Thank you. **M.O.**

Flaked-Out Furniture

An Alabama reader came to RV Resolutions for help with cracked and peeling upholstery in his fifth-wheel trailer:

11 purchased a new Coachmen Chaparral Signature 327RLTS in 2014. During my second year of ownership, the DuraBlend furniture started blistering. Now I am approaching four years of ownership, and the leatherblend material is peeling off.

Since it is made by Ashley Furniture, I contacted Ashley's customer-service department. I was told that Ashley has been honoring this problem for original owners for up to five years after purchase. The representative requested that I send photos and the receipt.

Four days after sending the requested documents, I received a letter denying my claim because I didn't have a purchase receipt for the furniture since it was installed as original equipment in my RV. It seems that Ashley's coverage extends only to furniture in residential houses.

Thank you for any help you can provide in this matter. **Clayton Powder,** Deatsville, Alabama

RV Resolutions sent two letters to Ashley Furniture Industries describing Clayton Powder's circumstances. After the company offered partial restitution, Powder followed up with a note:

ff Thank you for your assistance. After the second letter from RV Resolutions, Ashley Furniture offered me \$200. Even though \$200 will not repair or replace the furniture, I was thankful to get it. C.P.
■

NEED HELP RESOLVING AN RV ISSUE 🖌

RV Resolutions is *Trailer Life*'s forum for the settlement of conflicts between consumers and RV dealers and manufacturers, accessory suppliers and service providers. After exhausting all other resources without success, mail a typed letter to *Trailer Life* RV Resolutions, 2750 Park View Court, Suite 240, Oxnard, California 93036. Include copies of appropriate bills, photographs and correspondence along with a self-addressed, stamped envelope. Selected letters will be edited and published unless otherwise requested.



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TRAILER-TIRE BALANCE 📎 🌉 🖪

O I took two new tires to a tire-service store to have the old ones dismounted and the new ones mounted, as well as having them balanced. This was not my first

time having this done on wheels and tires, and no one had ever tried to explain what they did until now. Here is what went on, and I find it a bit confusing.

The wheels are aluminum, so I can understand them not wanting to put wheel weights on the outside and damage the finish, but here is the confusing part of the explanation. As the spin balancing was being done, the store manager told me the rims come static balanced to the trailer manufacturer, and even though the spin balancer was calling for weights to be added to both inside and outside beads, the only way he would balance the tires was to "static balance" them.

He changed the machine to a new setting, which told him where to place a weight, and if the reading on the machine was under 20, it was considered balanced. One wheeland-tire assembly came in at 11, and the other was 7, as I remember.

What does the customer do? I have never, on any form of vehicle or trailer, been told the rims come static balanced from the manufacturer. Do I believe this guy, or should the wheels and tires be pulled off and rebalanced? I am not against using stick-on weights, as a properly balanced tire saves both the tire and the trailer. I would appreciate your feedback on this.

Bill George, Bloomfield, New York

"Static balanced" likely refers to the use of an old-style bubble balance device once used as the standard wheel-balancing system. It's possible your trailer tires and wheels were checked at the factory, but unless you saw some type of weights on the wheels at the beginning of this process, it's possible your tire dealer led you astray. If the dealer meant it was just the rims that came "static balanced" from the factory, that doesn't take into account any imbalance by the tires, so they should still be rebalanced. You may want to check with a different tire dealer for follow-up service.

There's no reason the tire dealership can't do a spin balance on the wheels and tires, just as they'd do for a passenger vehicle. It isn't necessary to have the stick-on weights on the outside of the wheel. The balance can be achieved with the weights added on the inside, or back side, only.

More on Axle Greasing

I read your response to Robert Lauzon's "Axle Greasing" comment in the May issue with interest. I have a 2014 Keystone Montana Big Sky fifth-wheel. We pulled it to Soldotna, Alaska, this past May with our Ram 3500 dually diesel. When I stopped to refuel in Tok, Alaska, I noticed accelerated wear on the outside bead of the right-forward tire on the trailer. I put the spare on and continued our trip.

I didn't notice any suspension/ shackle problems, so I contacted Kenai

Diesel & Marine with suspicions of a bent spindle or axle. John inspected the tires and suspension, and found a broken spring bolt on the left side of the fifthwheel. This allowed the left axle to creep forward. The end of the bolt that remained showed a lot of wear. I suspect the bushing is missing or badly damaged. The inside bead of both left tires showed serious wear.

These bolts have Zerk fittings for a reason, and I had the wheel bearings repacked before we left Arizona. On inspection, the fittings on these suspension bolts showed no indication that they had been greased. This is a reminder to me that I need to be more specific when getting my "home" prepared for the road.

I'm having all of the bolts and bushings replaced and greased on both sides before we begin our return trip. I'm also considering replacing the shackle assemblies with the Roadmaster Comfort Ride system. **Doug Gold,** Sioux Falls, South Dakota

Wheel-bearing and spring-bolt maintenance are two different jobs, Doug. If the dealer doing the wheel-bearing repack wasn't told to also grease all available fittings, that would explain why they appear dry, although the original installer should have greased them as part of that project. Greasable spring and shackle bolts are terrific safety and durability additions to a trailer suspension, and they're always worth installing. It's a good reminder for all towable RV owners to include those fittings in a regularly scheduled maintenance program.

Brake-Control Failure

August's "Breakaway-Switch Brake Failure" reminded me of the same problem I had with my 2011 Chevy

TECH TIP: PRESSURE REGULATOR WITH WATER FILTER?

• I have a 2017 Genesis Supreme fifth-wheel. When hooked up to shore utilities, I use a Camco water filter, the blue-cylinder type. Is it necessary to also use an in-line pressure reducer? The filter itself seems to cut down on the water pressure inside my rig. I've had a few RVs over the years and several different answers to this question.

Bill Wilson, Henderson, Nevada

Your theory is understandable, Bill, using the natural water-flow restrictions in a filter to protect the RV's water system from too much pressure. However, while the filter may reduce the flow volume, it won't hold back the water-system pressure for long; it just takes more time to build up in the RV's plumbing. Campground watersupply pressures vary a great deal from place to place. Stick with using a pressure regulator to make sure your RV's water system isn't damaged by too much shore-utility pressure. Silverado 2500HD with the Duramax engine while towing my Alpenlite Augusta 34-foot fifth-wheel. I was using the GM-supplied brake control that was installed in the truck. I noticed that even at full braking that control would not stop the trailer or lock the trailer brakes. This control is made for smaller trailers. I replaced the controller with a new one from Camping World and, boy, what a difference it made with the braking the brakes will now lock the wheel with room to spare in the controller. John Abel, Prescott, Arizona

A couple of items stand out, John. The integrated brake control in your Chevrolet is fully rated and designed to handle the braking needs of any trailer the truck can haul, according to its tow rating. The brake control, like the truck's other hardware, such as suspension, braking, cooling and so on, is part of the full system, with all the parts rated to handle, for example, the truck's 17,400pound maximum potential tow rating. That brake control was either defective and in need of repair, or it was way out of adjustment with the gain and/or the braking rate set too low.

Ideally, a trailer-brake control should be adjusted so that the truck and trailer feel like a single unit when stopping. The trailer should not seem to be dragging on the truck, with the brake control adjusted for too much gain, and it shouldn't be pushing the truck when the gain is too low.

The trailer-brake control should never be adjusted so it can lock up the trailer brakes. That can lead to loss of control and jackknifing during an emergency stop when the tow-vehicle brakes have activated the antilock braking system (ABS) while the trailer is fully locked and skidding. The truck is in directional control due to its ABS, while the trailer is sliding anywhere it wants. To avoid this, the brake-control gain should be adjusted so that, even fully applied, the trailer brakes are just short of seizing up and locking the wheels. Once that gain adjustment is set, you set the rate, or how the brake control applies the trailer brakes relative to the

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truck's brakes, to suit your preference. If in doubt, a qualified RV-service center can help you with the fine-tuning.

Tacoma Brake-Control Connection

I just bought a 2018 Toyota Tacoma truck with the tow package. Do I need a wiring harness to connect the brake control? It is supposed to have a service connector for the towing brake controller, but I cannot find it. Do I need a harness?

Donald Burkart, Vancleave, Mississippi

Your truck has a brake-control plug receptacle under the dash, Donald, and there should be an included pigtail that you wire to the brake control on one end and plug into the receptacle with the other. Your Toyota dealer tech guys can locate the plug for you; it's under the far-left side of the dash behind a plastic molding.

Once you locate the receptacle, the rest is pretty easy. There are generally four wires to connect the brake control, and between the brake-control instructions and the Toyota pigtail-wiring diagram, you should have it figured out in no time. In the event your truck didn't include a pigtail adapter, you can purchase an aftermarket wiring harness that plugs into the brake control and the Toyota receptacle so you don't need to do any wiring except attaching a ground-screw connection.

Backing Dilemma

I'm the new owner of a 26-foot Winnebago Micro Minnie and have no experience backing up a trailer. I pull it with a 2004 Ford Explorer Sport Trac with a very short wheelbase. Do you have any suggestions, or do you think I should buy one of those powered-wheel trailer jockeys that moves with an 18-volt battery? Roger Cohee, via email

Backing up a trailer is definitely a learned skill, Roger. Fortunately, once you figure it out and get the hang of it, you'll be surprised at where you can safely position the trailer.

The motorized trailer-moving devices work great, but buying one can be

to water pump bearings and EGR coolers.

RAND

expensive, and it should be a decision of last resort if your back-in trailer parking spot proves too difficult. They work really well when it comes to backing the trailer into very tight storage areas, like the side of your house.

There are many different video tutorials, both on online sharing sites and commercial DVDs, that can help you get started. Be sure to check out RV Education 101's DVD Trailer Towing, Weights, Hitch Work and Backing (www.rveducation101.com). Take a look at the tutorials, and be sure to practice before you head out to a campsite.

COMMENT: CORRECT TRAILER-TIRE PRESSURE

➔ I recently purchased a 2018 34-foot Rockwood Signature Ultra Lite fifth-wheel with a dry weight of 9,500 pounds. The tires show max PSI is 65 pounds. What pressure should I use to allow for heat expansion? I currently have them at 55 pounds and did more than 2,500 miles of towing.

Steve Greenwood, Dayton, Ohio

There's no need to allow for tire airpressure increase due to heat while traveling, Steve. The manufacturers account for that minimal pressure increase when designing their tires. Check the tires for the proper pressure when the tires are cold, and you'll be fine. You should also check the Trailer Life technical questions area of our website because you'll find numerous related questions and answers there. Go to www.trailerlife.com, click on the drop-down Tech menu, and choose the Tech Q&A option. Happy hunting!

Trailer Shock-Absorber Addition

I just purchased a 2019 Grand **Design Reflection 311BHS** fifth-wheel and want to mount shock absorbers on it. I read somewhere that you like the Bilstein brand, but when I called Bilstein the rep said they don't make shocks for fifth-wheels. After a long discussion, he suggested a particular model, 24-197434. It has a short stroke (10.33 to 14.8 inches), but I thought the "valving profile" would be good. Rick Petzak, Zeeland, Michigan

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It's no surprise that Bilstein couldn't recommend a shock absorber from its catalog, Rick, because shocks on RV trailers are rare and the few models on the market vary widely in size and application. In most custom shock installation cases, you start with the mounting points, available from the aftermarket, and have them installed by a professional fabrication shop. Next, the extended maximum mountto-mount length is measured along with the minimum compressed length. These measurements, along with the size and type of mounting points, can be used by a parts counter guy to cross-reference comparable shockabsorber sizes that would be a close fit. It's a bit of a hunt, but you can find a shock that should fit your needs.

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universal shock-absorber mounting kit for trailers (www.roadmasterinc.com/ products/travel trailers/comfort ride .html). This kit will work with almost any trailer with a 3-inch-diameter axle.

Slider-Hitch Signal

On several occasions I've found Q myself towing my fifth-wheel with the slider hitch in the maneuvering position. Is this dangerous and, if so, is there a device I can install that will tell me the position of the slider hitch? If no device is available, how would you address this problem? My rig is a Ford F-250 towing a CrossRoads Cruiser Aire fifth-wheel. I have a Husky 16K slider hitch. Jason Compion, Rosenberg, Texas

I don't think driving with the hitch set the wrong way is harmful, although it moves the trailer pin weight back from center, and that takes a small amount of weight off the front suspension. It shouldn't be enough weight transfer to cause a problem, but in the long run, it's better not to tow that way. If your trailer pin box is somewhat large (one of those designed to improve the hitch ride), it may contact the tailgate with the hitch slide all the way toward the rear. Take some measurements to determine if this may affect you, and better yet, avoid driving that way for too long.

I'm not aware of any such sliderhitch monitor device on the market. Jason, but it wouldn't be difficult to set up a warning-light system using a few electronic components. Find a place at the front of the slider to install a small SPDT microswitch so it's switched one way when in towing position and the other in the maneuvering position. Use the switch to activate one of two indicator lights in the cab of the truck for example, green for towing position and red for maneuvering. As long as

the lights are visible by the driver, they should help you remember to change the hitch back to towing mode, as appropriate.

Trailer-Tire Pressures and Loads

My trailer, an Airstream Pendleton, came with Michelin LT225/75R16 E tires. The sticker on the side of the unit calls for 80 PSI. and that is the maximum pressure on the side of the tire. I have checked with Airstream, and the company simply recommends the maximum since it doesn't know how consumers will load their trailers. But that is at the maximum load of 2.680 pounds per tire. Since the gross vehicle weight rating (GVWR) of the trailer is 7,800 pounds, it would appear that 80 pounds is way overinflated. If I subtract the hitch weight of the trailer, say 900 pounds, there are only 6,900 pounds on the four tires, or about 1,725 pounds per tire.

Looking at Michelin's latest load and inflation tables, it would appear I could run at much lower pressures, even if I am running at the maximum GVWR. Am I missing something? Unfortunately, Airstream recommends running the tires at the maximum pressure, even though that appears to be about 3,000 pounds over the actual weight.

While the 80 pounds for the Michelin tires may be the maximum, there does not appear to be any way to reach the maximum capacity with the tires that came on the Pendleton. I have weighed the trailer a couple of times fully loaded for a trip, and it is a few hundred pounds under the GWR. Couldn't I run them at 70 PSI, or even 60 PSI, and achieve a smoother ride? **Chris Wall,** Terre Haute, Indiana

As you suggested, Chris, you can run your tires at a lower air pressure than the 80-PSI maximum listed on the tires and the trailer data sheet. The Airstream folks play it safe, as you said, not knowing how a user will load down the trailer. If you are going to use the load-and-inflation tables to find a per-tire carrying capacity, I suggest that the trailer is weighed, loaded for a trip, using individual tire scales. That way you can determine whether there's extra





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last-minute changes may occasionally result in omissions or errors.

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leeway when inflating the tires. It will help smooth the trailer's ride, as well as possibly improving tire life.

Alternatively, if individual wheelposition scales are not available, a multi-platform scale would be your next bet. Again, loaded for a trip, put the axles on one platform and the tongue on the front one. Take the actual weight for the axles, add a "fudge factor" of 10 percent, and divide by the number of tires. Then compare that number to the load-and-inflation chart for proper inflation pressure. Note that some tire manufacturers do not make charts available, especially for foreign trailer tires, so using the provided inflation-label ratings is the best bet in those cases.

HAVE A TECH QUESTION

Email **rvclinic@trailerlife.com** or write to RV Clinic, 2750 Park View Court, Suite 240, Oxnard, California 93036. Include your full name and hometown. Selected letters will be answered in the magazine, but time does not permit individual replies. No phone calls, please.



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Total Paid Distribution (Average No. Copies Each Issue During Preceding 12 Months): 236,949, (No. Copies of Single Issue Published Nearest to Filing Date): 234,002. d. Free or Nominal Rate Distribution (1) Outside-County as Stated on PS Form 3541 (Average No. Copies Each Issue During Preceding 12 Months): 59,326; (No. Copies of Single Issue Published Nearest to Filing Date): 5,600; (2) In-County as Stated on PS Form 3541 (Average No. Copies Each Issue During Preceding 12 Months): 0; (No. Copies of Single Issue Published Nearest to Filing Date): 0; (3) Mailed at Other Classes Through the USPS (Average No. Copies Each Issue During Preceding 12 Months): 0; (No. Copies of Single Issue Published Nearest to Filing Date): 0: (4) Distribution Outside the Mail (Average No. Copies Each Issue During Preceding 12 Months): 2,733; (No. Copies of Single Issue Published Nearest to Filing Date): 50. e. Total Free or Nominal Rate Distribution (Average No. Copies Each Issue During Preceding 12 Months): 62,059; (No. Copies of Single Issue Published Nearest to Filing Date): 5,650. f. Total Distribution (Average No. Copies Each Issue During Preceding 12 Months): 2,733; (No. Copies of Single Issue Published Nearest to Filing Date): 50. e. Total Free or Nominal Rate Distribution (Average No. Copies Each Issue During Preceding 12 Months): 62,059; (No. Copies of Single Issue Published Nearest to Filing Date): 5,650. f. Total Distribution (Average No. Copies Each Issue During Preceding 12 Months): 62,059; (No. Copies of Single Issue Published Nearest to Filing Date): 5,650. f. Total Distribution (Average No. Copies Each Issue During Preceding 12 Months): 62,059; (No. Copies of Single Issue Published Nearest to Filing Date): 5,650. f. Total Distribution (Average No. Copies Each Issue During Preceding 12 Months): 62,059; (No. Copies Of Single Issue Published Nearest to Filing Date): 5,650. f. 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Iotal Distribution (Wardage No. Copies Each Issue During Preceding 12 Months): 299,008; (No. Copies of Single Issue Published Nearest to Filing Date): 239,652. g. Copies Not Distributed (Average No. Copies Each Issue During Preceding 12 Months): 11,035; (No. Copies of Single Issue Published Nearest to Filing Date): 247,888. i. Percent Paid (Average No. Copies Each Issue During Preceding 12 Months): 310,043; (No. Copies of Single Issue Published Nearest to Filing Date): 247,888. i. Percent Paid (Average No. Copies Each Issue During Preceding 12 Months): 79.2%; (No. Copies of Single Issue Published Nearest to Filing Date): 247,888. i. Percent Paid (Average No. Copies Each Issue During Preceding 12 Months): 79.2%; (No. Copies of Single Issue Published Nearest to Filing Date): 97.6%. 16. Electronic Copy Circulation: a. Paid Electronic Copies (Average No. Copies Each Issue During Preceding 12 Months): 2,223; (No. Copies of Single Issue Published Nearest to Filing Date): 2,209; b. Total Paid Print Copies Plus Paid Electronic Copies (Average No. Copies Each Issue During Preceding 12 Months): 239,172; (No. Copies of Single Issue Published Nearest to Filing Date): 236,211; c. Total Print Distribution Plus Paid Electronic Copies (Average No. Copies Each Issue During Preceding 12 Months): 301,231; (No. Copies of Single Issue Published Nearest to Filing Date): 241,861; d. Percent Paid (Both Print and Electronic Copies): (Average No. Copies Each Issue During Preceding 12 Months): 79.4%; (No. Copies of Single Issue Published Nearest to Filing Date): 97.7%. 17. Publication of Statement of Ownership: Publication required. Will be printed in the December 2018 issue of this publication. 18. Signature and Title of Editor, Publisher, Business Manager or Owner:

las emer

ANN EMERSON, PUBLISHER, September 25, 2018

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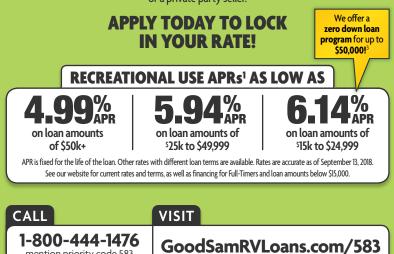
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WHOLIDAY RIDES

During this mountain town's annual two-day Christmas Stroll, locals and visitors usher in the holiday season together by walking through town or by letting a team of draft horses do the walking. Rides on a free horse-drawn trolley are one of the many highlights of the event.



The Magic of Red Lodge

A little town in Montana celebrates big for the holidays

– by Lisa Ballard

The first weekend in December, Red Lodge, Montana, hosts a Christmas Stroll. The main street becomes a pedestrian mall with carolers, bonfires and free draft-horse-drawn trolley rides. Locals don costumes and hand out treats. Shopkeepers open their doors and offer refreshments, and three Sisters on the Fly give tours of their vintage RVs decorated for the season. My favorite is a 1960s' Shasta with real hardwood floors and paneling. It's kitschy yet hip, and festively adorned with lights.

These three RVs are always the highlight of the stroll for me. When I moved to Red Lodge in 2011, I didn't realize these "sisters" were part of a nationwide all-woman's RV club that revamps classic trailers (with a woman's touch, of course) and then caravans together.

I always look forward to the Christmas Stroll, with its revelry and community cheer. And when I see the Sisters on the Fly, I know the holiday season is officially here.

Santa Claus is coming to Red Lodge November 30 and December 1 this year. III

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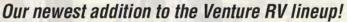
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