

RV TECHNICIAN



PUBLISHED BY THE RVDA EDUCATION FOUNDATION'S

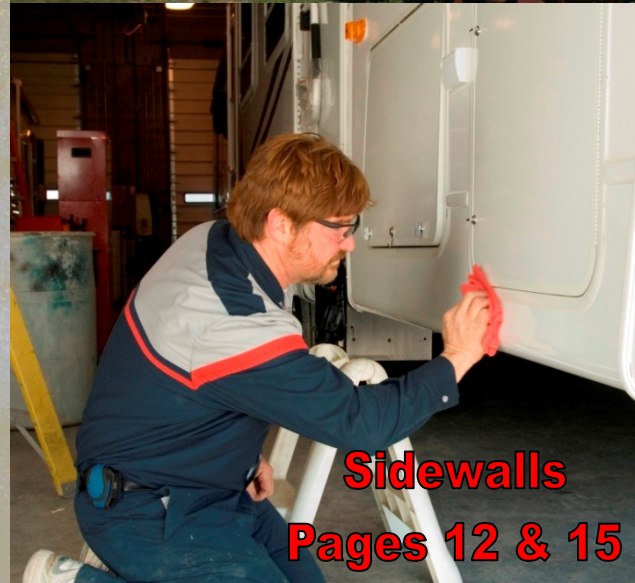
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Welcome to the April/May issue of *RV Technician* magazine. This issue is full of information on a variety of service related topics suggested by readers. This information should help technicians do their jobs better and stay up-to-date with changing products, all while helping their customers enjoy RVing more.

First up in this issue is "Making a Propane Test Apparatus," by Gary Motley of Motley RV Repair. Not only does the article explain in detail how to make the testing apparatus, but it also goes over how to perform some standard tests with it. Steve Savage of Mobility RV Service discusses different aspects of solar power in "Harnessing the Sun." This article covers all of the different things a technician should consider when working with a customer to install solar panels, and some simple installation tips. The next article is "Composite RV Construction," by Tony Yerman of RVDA. This article covers what composite materials are in RVs, how they are used in the construction of RVs, and a look at products that will be hitting the market soon. To go along with Yerman's article, Crane Composites, LLC, provided, "Repairing RV Sidewall Damage." This article gives step-by-step instructions to repair major and minor scratches, gouges, cracks, air voids, and other major impact damage. "Mobile RV Technician Tells All," by Don Crawford of Full Service RV, Inc., shares ideas for starting a mobile RV service business. SHURflo's Chris Beh gives technicians some quick tips for meeting their customers' needs in "Tech Tips: Fresh Water Pump Switch and Bypass Settings." Finally, the safety article this issue is, "Best Practices for RV Body Shops," compiled by the

Environmental Protection Agency (EPA). This article is timely since the EPA recently required body shops to file a notice with them regarding hazardous air pollutants (see page 30 for full details).

Additional Information

If you haven't ordered your updated copy of the RV Learning Center's *Service Management Guide* (flat rate manual), see page 22 for an order form. For those looking for parts manager, parts specialist, service writer/advisor, service manager, or warranty administrator training materials, check out the RV Learning Center's learning guides on page 38. You can save 50 percent by ordering them on CD between now and May 31, 2010. Also, don't forget to join the certified RV technician Facebook fan page to stay up-to-date on technician related information, such as training, articles, and news.

Training Opportunities

If you are looking for valuable training opportunities see page 37 or visit www.rvtrainingcalendar.com. Also, registration is now open for the 2010 RV Dealers International Convention/Expo. See pages 35 - 36 for a registration form. Technicians looking for continuing education or for certification preparation can sign up for the Technician Certification Preparation Course (see page 24) or the FRVTA Distance Learning Network (see page 31). An order form for the 16-volume set of the RV service textbooks is available on pages 27 - 28. The RV service textbooks are a "must-have" for your shop.

Update Your Contact Information

Because the RV Learning Center is now distributing the magazine via e-mail it is important to keep your contact information up-to-date with us. Please make sure that we have your current e-mail address to ensure that you receive each issue. To update your e-mail call the dealer services hotline or e-mail info@rvda.org.

Special Thanks

I want to give a special thanks to all the readers who suggested articles for this issue. Many articles are the result of direct requests from fans of the certified RV technician Facebook page. I hope this trend continues, so if you have requests or suggestions for articles don't hesitate to e-mail or call me directly, or to post them on the Facebook page. I will do my best to find an author for the article you suggest. We are always looking for input on how we can make the magazine better.

Finally, feel free to contact me if you are interested in being a part of the *RV Technician* Advisory Group. The advisory group deserves a lot of credit for helping to ensure the quality and accuracy of the articles.

We hope you enjoy this issue of *RV Technician*.



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PROPANE

MAKING A PROPANE TEST APPARATUS

By: Gary Motley

To perform the three propane pressure related tests, described in the fall 2009 *RV Technician*, it takes some preparation on the part of the technician. The technician must acquire or make certain supplies, gauges, and a test apparatus. The test apparatus detailed is also available for sale from Fairview Fittings & Manufacturing.

Making the Apparatus

To make a propane test apparatus you need a four-port brass block or two, three-point brass blocks attached with a nipple. One port will have a 3/8-inch male flare termination. A second port will have a 1/4-inch barbed fitting for the calibrated manometer. The third port will have a propane valve with a plug screwed into the other end of it. This plug should have a size #47/48 orifice to equate a 75,000 BTU load on the system at 11 water column inches (WC) when the valve is open. The fourth port also terminates with a 3/8-inch male flare fitting. This is used to hook up the propane hose that goes into the RV propane system. Different manufacturers sometimes use different fittings in the propane system. When this happens adapt the size of the fittings.

Suggested fittings/hoses sometimes needed to attach to the test apparatus

Low pressure hoses:

- 3/8-inch MPT x 3/8-inch male flare hose – 24-inch
- 3/8-inch female flare x 3/8-inch female flare hose - 36-inch
- 3/8-inch MPT x 1/2-inch female flare hose - 24-inch

Fittings:

- Four port 3/8-inch block MPT fitting
- 3/8-inch MPT x 3/8-inch male flare fitting (2 each)
- 3/8-inch MPT x 1/4-inch barb brass fitting
- 1/2-inch MPT x 3/8-inch male flare fitting (2 each)
- female 3/8-inch flare swivel nut (2 each)
- female 1/2-inch flare swivel nut (2 each)
- female 1/2-inch x 3/8-inch reducing flare swivel nut (2 each)
- 1/2-inch flare caps and plugs (2 each)
- 3/8-inch flare caps and plugs (2 each)
- Valve with #47 or #48 orifice attached



NOTE: You will not use all these fittings each time. However, with this assortment you should be able to hook into most propane systems at the regulator or the stovetop to do operating and lock up pressure tests.

Propane Test Apparatus with Calibrated Dial Manometer

Propane vapor is very dangerous. When making this apparatus be certain there are no leaks in the connections. Turning on the

valve to the orifice allows propane to escape when the apparatus is hooked up and the service valve of the container is opened. Open the petcock only long enough to do the proper test and close it immediately. Be aware of the dangers of the escaping propane vapor. When the test apparatus is not in use, cover all of the openings to prevent contamination. Use plugs or caps as necessary.

Connecting the Test Apparatus

This procedure applies when hooking up a test apparatus to the propane system. Hook up a test apparatus to do an operating or a lock-up pressure test. A timed drop pressure test is the only test that is done at the stovetop if the range has a regulator, which all stoves have had for several years.

Connecting the Test Apparatus at the Propane System Regulator:

1. Turn the container service valve(s) off.
2. Turn off all appliances.
3. Disconnect the propane low-pressure hose from the regulator or the hard pipe flare fitting using a back up wrench.
4. Connect test apparatus to the regulator output.
5. Connect the propane low-pressure hose to the test apparatus.

NOTE: The test apparatus must be down stream of the main regulator.

6. Hook a calibrated manometer to the test apparatus barbed fitting.

Connecting the Test Apparatus at the Stove:

1. Using a back up wrench remove the supply line from the stove manifold or the stove regulator inlet.
2. Attach the test apparatus to the stove manifold.

- A. Sometimes a flexible hose with the proper fittings may be needed.
- B. Be careful of leaks here.
3. Attach the propane supply line to the test apparatus.
 - A. Sometimes a flexible hose with the proper fittings may be needed.
 - B. Be careful of leaks here.
4. Hook a calibrated manometer to the test apparatus barbed fitting.

After properly installing the test apparatus, perform two tests. One test is an operating pressure test. This test verifies that the regulator is delivering the proper pressure to the system under a load. The other test is a lock-up pressure test. This test checks that the regulator is not letting a high-pressure leak through the regulator and into the propane system.

Many technicians advocate a timed drop pressure test or a leak test be done at the beginning for safety reasons. In any case, the operating pressure test should be done before the lock up pressure test. A leak test should always be the last test done anytime the propane system is violated to install an appliance or remove a test apparatus.

Operating Pressure Test

After hooking up the test apparatus properly, perform an operating pressure test. Perform an operating pressure test with approximately one half the potential load of the system on the regulator.

1. Open the service valve on the (a) container.
2. Open the valve on the test apparatus to simulate half the potential load on the system. A 40 to 45,000 BTU furnace burner could be used, as this would approximate about half the potential load on the system.

3. Measure inches of water column (WC) on the manometer. It should read a nominal 11 WC (10.5 – 11.5 WC).
4. Adjust regulator if measured WC is incorrect. Turn adjustment screw clockwise to increase pressure, or counterclockwise to decrease pressure.
5. Close the valve on the test apparatus.

Regulator Lock-Up Test:

Lock-up pressure is the amount of pressure required to press against the regulator diaphragm, overcome the spring, and completely seal the regulator seat assembly so no gas flows through the regulator.

Upon completion of the operating pressure test and regulator adjustment, conduct the following regulator lock-up test.

1. Close the gas cock on the test apparatus.
2. Turn off all demand on the system (pilot lights, etc.).
3. Open the service container valve.
4. Monitor propane pressure on the manometer for three minutes.
5. If pressure exceeds 14 WC or climbs during the three minutes, replace regulator.
6. Turn off propane at the service valve of the container.

Timed Pressure Drop Test

1. Ensure the temperature of both ambient air and the propane piping is approximately the same.
2. Ensure a uniform temperature is maintained throughout the test. A change in temperature will cause propane to expand or contract, which could result in a false indication of a leak or hide a leak.

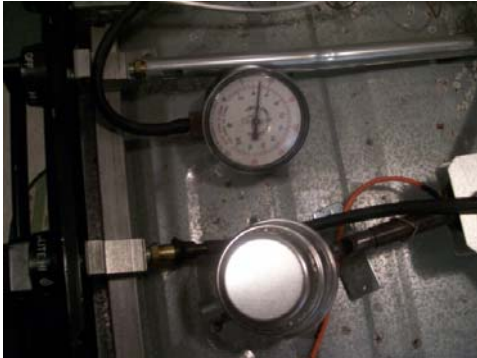
3. Ensure there is no load on the propane system.
4. Ensure the propane system is turned off at the service valve(s).
5. Turn propane on at the container service valve.
6. Listen to the regulator for sounds of escaping propane that would indicate an open line. Silence indicates the regulator has locked up.
7. Turn propane source off at container service valve(s). The system now has 11 WC nominal pressure if all is correct.

At Range Top:

To do a drop pressure test at the range top, perform the steps above and proceed as follows. Use only a manometer, without the apparatus.

1. Remove the stovetop to access the range burner orifice spuds.
2. Remove a range burner tube manifold.
3. Attach a manometer to a range burner orifice spud.
4. Turn on the burner valve with the manometer connected and ensure 10 WC nominal. This will test the range regulator.
5. Slowly open a second range burner and safely bleed pressure off to a nominal 8 WC.
6. Turn the second range burner off quickly after achieving nominal 8 WC.
7. Monitor the manometer for a minimum of a full three minutes. Ensure there is no change in pressure. Locate and repair any leak(s) and retest until the pressure holds.
8. Turn off the range burner with the manometer attached.
9. Disconnect the manometer from the range burner orifice spud and reconnect the range burner. Replace all parts removed.

10. Return stove top to original condition.
11. Return propane system to proper operating condition.



With The Test Apparatus:

The following procedure is based upon conducting the drop pressure test with a test apparatus. The apparatus is generally attached immediately following the system regulator. It may be attached anywhere in the system upstream of any appliance. The test apparatus is most often attached at the stove supply before the stove regulator port if it is not attached at the main system regulator. To do a drop pressure test with the apparatus, perform the steps above and proceed as follows.

1. Open the valve on the apparatus and slowly bleed off pressure until the manometer reads 8 WC.
2. Monitor for a minimum of three full minutes. Ensure there is no change in pressure. Locate and repair any leak(s) and retest until a successful pressure hold is accomplished. Remove the test apparatus.

Removing the Test Apparatus

After doing all tests desired using the apparatus, the following procedure should be followed to return the propane system to the intended condition.

1. Remove the test apparatus from the system using a primary and back up wrench.
2. Reconnect the low-pressure hose as appropriate using a primary and back up wrench.
3. As a final step when the propane system has been violated by installing the test apparatus, ensure there are no leaks at the point where the test apparatus was installed. There are three ways to do this:
 - Perform a timed drop pressure test at the range top using the range burner orifice spud.
 - Use an electronic propane leak detector after removing the test apparatus and reassembling the system at the point of violation.
 - Use an approved propane leak detector after removing the test apparatus and reassembling the system at the point of violation.

When performing any of these operations take care to get no contaminants in the propane system.

Document all actions on the PDI form, work order, or other appropriate record keeping form as per company policy.

Gary Motley is a master certified RV technician and an RV Technician magazine advisory group member. For more information on this article, contact Gary at rvrepairs@aol.com.

Harnessing the Sun

By: Steve Savage

I was visiting a local dealer's parts counter the other day when a customer approached. He had an RV with a small solar panel on the roof and wanted to know how large an inverter he would need in order to use his electric coffee maker in the morning. Having done a number of solar panel installations, our conversation revolved around a series of questions having to do with the size of his battery bank and the output of his panel. Quickly determining his present system was seriously undersized in terms of both solar panel and battery bank provided us the opportunity to discuss the various components that go into a successful solar system.

What the Customer Wants

Perhaps the most important thing to bear in mind when considering a solar installation is the customer's objective. This is

crucial to deciding how to design the solar system. For example, solar panels cannot replace generators when it comes to high-amp draw applications such as air conditioners. On the other hand, small five, 10, and 15 watt panels work best in maintaining batteries, when disconnect switches are off. For many RVers, not having dead house batteries is well worth the price of a small panel on the roof.

Since it is simple enough to add solar panels to a system, as a rule of thumb, one, 100-watt panel per battery is a reasonable

starting point for a frugal user. Customers who boondock may require more panels and it is possible to cover the entire roof of the RV with solar panels in extreme cases. The more power your customer wants, the more panels you will need to install on the roof, along with more batteries in the bay to store all of that power for use when the sun goes down.

Voltage

Solar panels come in various voltages and you want to match voltages and, ideally, use the same brand of panels, just as you would match batteries when installing a battery bank. Some panels come in voltages as high as 20 volts DC. You may wonder why there is a need for such high voltage.



Consider this, solar panels get extremely hot sitting in the sun, and, as they heat up, output voltage drops (sometimes as much as two volts). The voltage also has to be high enough to overcome the resistance of the wires and connections. When voltage drops below 14.1-14.3 volts, batteries begin to sulfate. Our solar controller is responsible for deciding what the batteries need, so job one for us is getting enough power to allow the controller to do its job.

Finally, we have solar controllers and wiring. As with all technology, there are differences in controllers. Higher end controllers have

the ability to push a few more amps when panels are cool and come with a higher price tag. Wire sizing is important as solar panels are passive devices and can only produce so much voltage or pressure through the wires. That means, for maximum efficiency, running wire a couple of gauges larger than normal for the amperage you intend to carry.

Installation

After we design the system, we must install it and this is where things get easy. Whenever possible we want to mount our panels off the surface of the roof to keep them as cool as possible. Many panels come with feet that you fasten to the roof in one of two ways. On rubber roofs, you can screw the panel feet to the roof, just as is done with everything else on the roof. When working with a fiberglass roof, it is possible to use a heavy-duty double back tape between the panel feet and the roof. The tape saves time and holds very well.

Next, we must run our wires to the solar controller. Usually dropping the wires down the refrigerator vent works well and you can install the controller in the wall of the refrigerator cabinet, provided it is sealed on the backside. Controllers can also be installed in cabinets or even near the batteries. To maximize efficiency, it is important to run the wire directly to the battery terminals. When it is not possible to drop the wires down the refrigerator vent, dropping them down through the roof into a cabinet is the next best choice.



Now our work is done. Solar panels are maintenance free with the exception of an occasional cleaning. Panel output will be the highest when the sun is perpendicular to the panel and will peak for 4 to 5 hours per day. One last thing, don't forget to tell your customer their new panels only work when they are parked in the sun!

Steve Savage is a Master Certified RV technician, the owner/operator of Mobility RV Service in Bristol, TN, and member of the RV Technician Advisory Group. His articles frequently appear in consumer and industry magazines. For questions or comments, e-mail Steve at mroeditor@chartertn.net.

COMPOSITE RV CONSTRUCTION

By: Tony Yerman

I am known for my knowledge of RV collision repair since I write the *RV Damage Repair Estimator* (see page 14). So, it is not surprising that people ask me questions about RV construction and anything new that is on the horizon. The questions these days are about composite construction materials used in travel trailers. Many believe RVs will soon be made from the same materials as cars and aircrafts.

Some of the questions I often hear are: "How are they built?;" "Where do I get the materials?" But mostly; "How do I fix these units?" This article should clear up a few things about composite RVs and how to repair them.

What is Composite Construction?

In automotive and aircraft applications, composite construction refers to carbon fiber panels. These are solid panels that are stronger than metal or fiberglass, and are also lighter in weight. The carbon fiber is molded into a panel such as a car fender or an airplane fuselage.



RV composite materials are a bit different and are still being developed. The composite portion of the RV construction being used today is the substrate, or underlayment. In the past, it was luan plywood. Luan is heavy and very

susceptible to water damage.

The composite materials in RVs do not replace the traditional fiberglass reinforced plastic

(FRP) sidewall skin, the styrofoam insulation, nor the aluminum tube wall frame. The composites only replace the plywood. The assembly and process are the same. All panels and framework are laminated together using a vacuum bond process.

The Composites and Their Uses

There are two new composite products, Cosmolite and symaLITE. These materials consist of plastic and fiberglass bidirectional

fibers in a polypropylene resin. They are composed of a thermoplastic material, which is produced as a sheet and rolled in coils. The materials are sold in widths of nine feet and cut to length, eliminating the seams found in plywood construction using the traditional 4X8 foot sheets.



The materials contain no formaldehyde, and are water and rot resistant. Also, the materials are up to 30 percent lighter than luan plywood.

Cosmolite is used mainly in floors and on roofs and does not require a coating or outer skin. It can be used as an exterior roofing material and is its own substrate. On floors it acts as an underbelly panel.

SymaLITE is used in sidewall construction. This material can be covered and/or coated with a finish material or skin. In the laminating process, FRP is laminated to the symaLITE, which is laminated to the framing and insulation. This material can also take the place of luan interior panels and be wallpapered or finished just like luan plywood.

How do I Fix This Type of Material?

According to the company that manufactures the materials, repairing Cosmolite with heat or conventional fiberglass repair materials is the way to do it. Since the sidewalls still use FRP, damage is repaired in the same manner it has always been repaired, using fiberglass and automotive body repair materials and paints.

The suppliers of FRP, Crane Composites, in particular, have repair manuals available for FRP damage. You can find repair methods in the next article in this issue of *RV Technician*. The material discussed here is supplied by TekModo of Elkhart, IN. They do not have any repair manuals out yet, but they are very helpful on the phone.

What's Next?

For a little peek into the future, let's look at some new products that are in development.

New composite substrates will be combined with some new coatings or exterior finish materials. One of the new products is developed by Dupont, and is called Surlyn. It is currently used as a covering for golf balls. Surlyn will be used with a new surfacing material from TekModo called SpectraLite, which will be laminated to Cosmolite and sold as a single panel, combining exterior skin and coating with the substrate.

RVDA Service Consultant Tony Yerman is a Master Certified Technician, an Ohio repair specialist, and the author of the RV Damage Repair Estimator. If you have questions or comments, e-mail Tony at tyerman@rvda.org.

WHAT DO YOU THINK?

We are looking to our readers for comments and feedback on *RV Technician*. Let us know what you want to read about, articles that would be most helpful to you, or ideas for new columns or sections.

Have specific technical questions? Submit the questions, and we will seek out answers from industry leaders on the subject. You can also submit articles to be considered for publication in an issue of *RV Technician*.

We will use your input to enhance the value of *RV Technician*. Information we receive will help the *RV Technician* staff and advisory board members provide more troubleshooting tips, articles on current concerns/problems, and information on how your peers have handled repair matters.

Please return your comments to: Editor, *RV Technician*, 3930 University Drive, Fairfax, VA 22030-2515, fax it to (703) 359-0152, or e-mail your comments to mbroadus@rvda.org.

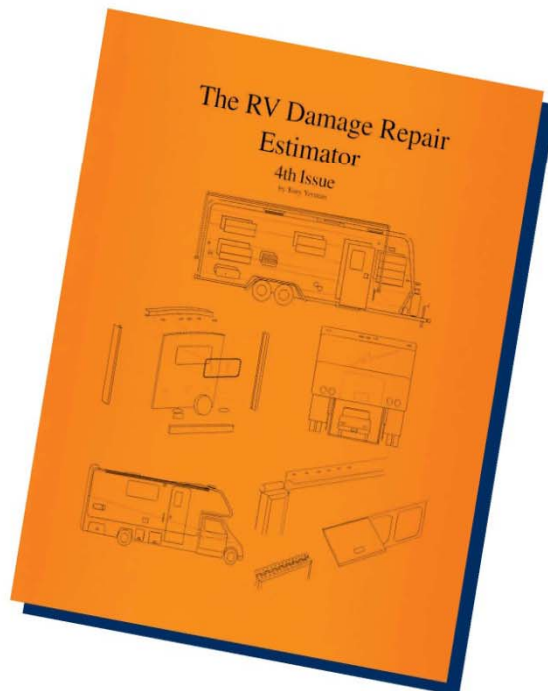
Make Money with The RV Damage Repair Estimator!



Make money with *The RV Damage Repair Estimator* by Tony Yerman. The fourth issue has more information packed into the original plus 100 new pages. A recording explaining how to use the publication is available from the RV Learning Center at www.rvlearningcenter.com. It's a free download!

Prices for parts were researched and updated and labor times were adjusted, where necessary, to reflect changing market trends. Adjustments were made using input from RV dealers, repair shops, insurance adjusters, and the author's personal experience in repairs. The 2007 release also has several new repair techniques and sections, including expanded tutorials on estimating and the actual repair damage.

You can order *The RV Damage Repair Estimator* by submitting a completed order form, visiting www.rvlearningcenter.com, or calling the dealer services hotline. The price for members is \$199.00 and \$239.95 for non-members.



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REPAIRING RV SIDEWALL DAMAGE

Courtesy of Crane Composites, LLC

Dealership service departments frequently see units with damage to the sidewalls. This happens often to units involved in accidents. Being able to repair the damage is a great revenue builder for any dealership. Below is an explanation of how to fix sidewall damage.

Read All Instructions Before Starting

These guidelines are provided in good faith, but without guarantee. The manufacturer and/or distributor of the product bear no responsibility for actions taken or not taken. There are many nuances of repair techniques that are assumed to be general knowledge; such nuances are not included in these instructions. Rather, these guidelines are strictly recommendations and are not intended to serve as a step-by-step, foolproof repair checklist. Selection of an experienced repair facility is the sole responsibility of the owner.

Since conditions of use are beyond Crane Composites, Inc.'s control, all risks are assumed by the user. Nothing herein shall be construed as a recommendation for uses which infringe on valid patents or as extending a license under valid patents.

CAUTION: Wearing disposable latex gloves, goggles, and use of an OSHA approved respirator are recommended. Read and follow all manufacturer safety recommendations on labels of materials used for repair. Some materials may be flammable and should be used with caution.



Minor Scratches

1. Be sure that the surface of the scratched area is clean.
2. Spray the scratched area with a light mist of dark spray paint, making sure that the paint gets down into the groove of the scratch. The light mist of paint allows you to see where the scratch is as you are sanding, and also gives you a guide for sanding only as much as you need to remove the scratch.
3. Begin sanding with 220 grit sandpaper. Sand an area approximately 3 inches around the scratch.
4. Begin your final sanding with 400 grit sandpaper.
5. Begin buffing with buffing compound to remove any fine sandpaper scratches.
6. Begin the final buffing with a clean buffer pad and use a 50/50 combination of buffing compound/glazing compound to restore the gloss of the original gel-coat.

Major Scratches and Gouges Through Gel-coat into Laminate

1. Make sure that the repair area is clean. Make sure that the scratch or gouge has all dust or grime removed from the scratch. Wipe thoroughly with acetone.
2. Mix 2 percent catalyst to gel. Fill the scratch or gouge with gel-coat. Apply extra gel-coat to allow for normal shrinkage. Allow gel-coat to completely set up.
3. Begin the initial sanding with 220 grit sandpaper.
4. Begin the final sanding with 400 grit sandpaper.
5. Begin buffing with buffing compound to remove any fine sandpaper scratches.
6. Begin final buffing by using a clean buffer pad and use a 50/50 combination of rubbing/glazing compound to restore the gloss of the original gel-coat.



Repairing Cracks, Air Voids, or Other Major Impact Damage

1. Begin by cutting out a rectangular or square area around the repair site with a die grinder. Cut down through the gel-coat and the laminate (Do not cut through the luan plywood backer) and then remove the gel-coat/laminate layer from the plywood backer by using a putty knife to pry it off. Use the die grinder to taper off the edge of the gel-coat/laminate around the perimeter of cut out area, taper it back about 1/2-inch at a 45-degree angle.
2. Make sure that all of the laminate is removed from the surface of the luan plywood. Lightly score the face of the luan plywood with the edge of the die grinder to promote a better bond between the luan plywood and the new fiberglass that will be applied. Clean off any dust that remains on the repair area.

3. Using 1 1/2 oz. fiberglass mat cloth, cut the mat to the size of the repair area (including the 1/2-inch of taper around the outside edge of the repair area). Use three layers of 1 1/2 oz. mat.
4. Catalyze your polyester resin as directed by the resin manufacturer. Holding the first layer of mat on the repair area, begin brushing the polyester resin onto the fiberglass mat until the mat is completely wetted out. Continue adding layers of mat in the same manner. Once all three layers of mat are wetted out, use a small roller to roll out any air bubbles.
5. Allow the polyester resin to set up (reach its peak curing temperature) and begin cooling down. Begin sanding the fiberglass repair area using 40 grit sandpaper. Make sure that the sander has a very stiff backer for the sandpaper disk so that you are sanding flat. Sand off the excess polyester resin and fiberglass. Switch to 80 grit sandpaper; continue sanding until repair area is flat. Be careful not to sand a depression into the surface of the repair area.

6. Use 220 grit sandpaper to do the final repair sanding to prepare area for gel-coat application. Sand an area about 3- to 4-inches around the repair. Wipe the repair area with clean, fresh acetone to remove any dust.
7. Mask off the area around the repair.
8. Spray un-thinner gel-coat onto the repair surface being careful not to have drips or globs. Spray enough gel-coat to allow for an approximate 20 percent shrink.
9. Allow at least four hours for the gel-coat to cure. Allowing an overnight cure is the best possible cure.

10. Wipe the cured gel-coat surface with fresh, clean acetone before sanding.
11. Begin the initial sanding with 220 grit sandpaper.
12. Begin the final sanding with 400 grit sandpaper.
13. Begin buffing with a clean buffer pad using buffing compound to remove any fine sandpaper scratches.
14. Begin final buffing by using a clean buffer pad using a 50/50 combination of buffing/glazing compound to buff gel-coat to the gloss level around the repair.

For more information visit www.cranecomposites.com, e-mail rvapplicationengineer@cranecomposites.com, or call (800) 435-0080.

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it PAYS

TO INSTALL REESE®

2010 REESE® INSTALLATION INCENTIVE

As you know, Cequent Performance Products offers a selection of some of the most well known brands in the towing industry. Beginning January 1, 2010, we are going to make your installations pay additional dividends and offer a significant opportunity for future sales.

Here are the details...

- a.** For the period January 1 through June 30, 2010 installation of selected REESE brand towing products will allow you to receive a cash rebate.
- b.** If you install a Tekonsha® brand brake control at the same time, you will receive even more!
- c.** After the sale the retail customer that makes the purchase will then receive an acknowledgement of their transaction and coupons good for additional Cequent Performance items that are only redeemable by you.

That's it!... it's simple... a rebate for you and a potential follow-on sale... here is how it works:

Step 1... You enroll in the program.

Enrollment forms are available either online at www.cequentgroup.com/Reeseenrollment.pdf, or by contacting your distributor sales person.

Step 2... You sell and install

an average of five eligible REESE or Pro Series™ towing products per month from the list below. After each installation you fax a copy of the retail customers contact information and a copy of the paid proof of sale to 734-656-3009 - Attn: Valaurie Hopper. NOTE... the installation of a Tekonsha® brake control on the same invoice must be clearly marked.

Step 3... Sit back and let us go to work.

Here is what we will do... On April 1... then on July 1, 2010 Cequent Performance will tally your submissions for each preceding quarter (3 months).

- If your quarterly installations average 5 per month, we will send you an installation rebate check for all the qualified installations you made for that 3 month period no later than April 20, then July 20 respectively.
 - There is no limit to the number of installations you submit as long as they occur between January 1 and June 30, 2010.
- Every retail customer submitted during the program period will receive an acknowledgement of their purchase and a copy of their product warranty.

REESE® Installation Incentive – Get up to \$25 back per installation!

Eligible Product(s)	Hitch Only	OR Hitch plus... 9030 Voyager® 9040 Envoy® 90155 Primus™	OR Hitch plus... 90160 Primus™ IQ	OR Hitch plus... 90185 Prodigy® 90885 Prodigy®P2 90195 P3®	OR Hitch plus... 90250 Prodigy®RF Trailer Mount Brake Control
Reese Strait Line Hitches	\$11	\$16	\$18	\$21	\$25
Reese Select or Signature Series 5th Wheel Hitches (including Sliders)	\$10	\$15	\$17	\$20	\$24
Pro Series™ 5th Wheel (including Sliders)	\$7	\$12	\$14	\$17	\$21

(NOTE: ALL \$ IN US FUNDS)

BRAKE CONTROL MUST BE INCLUDED WITH AN ELIGIBLE HITCH TO QUALIFY.

HERE IS THE BONUS! Your submitted customers will also receive printed coupons... valid until September 30, 2010 on selected items from the Cequent Performance Products family of brands that are exclusively redeemable by you!

- Coupons will be for specific Cequent products and will reflect your business name as the only place for redemption.
- Coupons will need to be submitted for

redemption no later than November 30, 2010 for reimbursement by Cequent Performance.

- Coupon submissions are subject to random audit as defined by law and may require proof of your purchase.

Copies of the eligible Reese, Pro Series and Tekonsha items guide, a consumer acknowledgement letter and a sample coupon page are included. They may also be viewed online after enrollment in the program.

One more thing... if you are a Tekonsha "Just Rewards" participant, rebate \$ can be converted into points in the program.

If you have questions, please contact Amber at Cequent Performance Products, 517 767-1259. **Thank you for your business!**

See redemption form for program rules and details

* Rebates for installations are on specific Reese, Pro Series and Tekonsha items. Installations are subject to independent verification. ** Retail coupons have no cash value to the consumer except as a discount on their purchase of a specific item and are not available where prohibited by law. *** Coupon submissions by program dealer/installers with a business identification other than their own will not be honored and will be forfeited.





IT PAYS TO INSTALL REESE®

Dealer/Installer Enrollment Form

COMPANY _____

CONTACT _____

STREET ADDRESS _____

PHONE _____

FAX _____

CITY _____

STATE _____

ZIP _____

EMAIL _____

DISTRIBUTOR

On April 1... then on July 1, 2010 Cequent Performance will tally your submissions for each preceding quarter (3 months). If your quarterly installations average 5 per month, we will send you an installation rebate check for all the qualified installations you made for that 3 month period no later than April 20, then July 20 respectively. There is no limit to the number of installations you submit as long as they occur between January 1 and June 30, 2010.

REESE® Installation Incentive Effective January 1 through June 30, 2010

PLEASE complete the Dealer/Installer Enrollment Form above to join the installation incentive program.

THEN fax your completed form to 734-656-3009 Attention: Valaurie



MOBILE RV TECHNICIAN TELLS ALL

By: Don Crawford

Some dealerships and RV service centers use a mobile tech unit as a revenue builder. Don Crawford offers some advice for those thinking about starting a mobile RV repair service.

Wish you had a road map to start a mobile service business? Maybe I can help. I've been down that road and can give you some tips to make sure your trip is a smooth ride! I started Full Service RV a year ago and have some experiences I'm happy to share with you.

Do Your Homework

First, do your homework. Having your certification (and that's a must) is not enough. Put on a marketing hat and think like the big box companies do before they build a new store. Do customers need a mobile RV technician in your area? What's the RV business like there? If you aren't in Florida, Texas, Arizona, or California (and maybe even if you are), when and how long is the RV season in your area? You'll need a steady flow of customers to make a go of it.

Secondly, once you think there's a need that you can meet, how are you going to get the word out? How are you going to distinguish your service from your competitors? You have a lot to think about: a van with signage on it, a telephone number, brochures or rack cards (9x5 postcards), business cards, a website



(yes, definitely), Yellow Pages and Yellowbook.com ads, Craigslist, etc. Finally, you have to set your business up right. You'll need tools – lots of tools, and they need to be well organized so you can find them. You'll need an inventory of parts. Your mobile van will also be your office on the road, so in addition to tools, you'll need a place for your marketing and a laptop – to keep track of your appointments and to access suppliers and customer files. And, just as you would if you ran a shop and not a mobile service, you'll need an accounting system and the "know how" to keep business records.

Ten Tips to Know

Now that you've got the research out of the way, here are our "Ten Tips to Know" for running a successful mobile RV repair service.

1. Think customer service. I know you've heard that before, but IT'S TRUE! Don't even try starting the business unless you like people, are good at building relationships, and don't mind going out of your way to help your customers.
2. Communicate! Answer your phone. In this day of voicemail, hearing a real voice at the end of the line will make all the difference in the world. Let customers know if you are running late for an appointment.
3. Market your mobile van. It can be your most important marketing tool. Consider "wrapping" your vehicle instead of the usual signage, so that when you enter an RV park, it really stands out. It will bring you a lot of business.
4. Dress for the job. Pick out a uniform for yourself, i.e. khakis and a starched blue shirt. Show up in clean, pressed clothes.
5. Price fairly.
6. Be available. Is it really necessary to charge more for calls at night and on the weekends? Remember, it's a 24-7 world out there.
7. Establish rapport with park managers and office staff. They will be your bread and butter for referrals.
8. Market yourself. Leave brightly colored and professionally done brochures or rack cards and a holder at RV parks and dealers. Have something there your customers can pick up and take with them.
9. Find good suppliers. You won't be able to carry all you need in your van. Make sure you establish accounts (and good relationships) with major RV parts and accessories suppliers. Even better, if possible, is having a supplier's warehouse locally, so you can pick up parts quickly.
10. Build good relationships with local dealers and service facilities. They can help with referrals and parts.

In summary, you have to be a good technician to run a successful mobile RV repair service. However, that's not enough. You also have to be a good marketer, a good salesperson, a knowledgeable computer user, and a good businessperson! Go for it and good luck!

Don Crawford is owner of Full Service RV, Inc. and a certified RV technician. If you have questions or comments e-mail Don at don@doncrawford.net.

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Card Number: _____ Expiration Date: _____

Name on Card: _____ Signature: _____

Billing Address: _____ Billing Zip: _____



TECH TIPS: FRESH WATER PUMP SWITCH AND BY-PASS SETTINGS

By: Chris Beh

With new products being introduced on the market, it is important for RV technicians to understand how to adjust fresh water pumps to customers' specifications. Although switch and by-pass adjustments are not recommended by manufacturers, we know that RVers often want to make changes. So, here is the way it works.



The by-pass is a spring loaded diaphragm that opens up allowing water from the discharge side back to the inlet side. The by-pass is set to begin opening at about 40 psi and creating full by-pass at about 62 psi. The pressure switch on the pump is set to shut off at 55 psi. If the switch or by-pass settings are adjusted too much, the by-pass and switch shut-off can overlap and **THE PUMP WILL NOT SHUT OFF**. Screwing the switch screw in clockwise will raise the shut-off pressure. Unscrewing the switch screw counterclockwise will lower the pump shut-off pressure. Screwing the by-pass screw in will raise the pressure at which the by-pass starts and raise the full by-pass pressure. Unscrewing the by-pass screw will lower the pressure at which by-pass starts and lower the full by-pass pressure. **WARNING: If full by-pass is reached before the shut-off setting, the pump will not shut off.** Full by-pass pressure setting should be 5 psi higher than pump shut off pressure.

Complete Setting

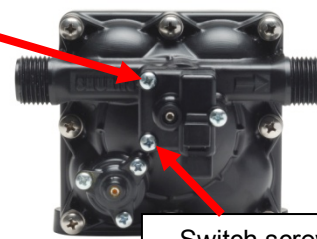
Procedure:

1. Turn off power.
2. Disconnect power wire to switch.
3. Connect power directly to the red pump motor lead. Pump will start.
4. Close all valves and adjust by-pass screw until it reaches desired full by-pass [factory setting = 62 psi].
5. Open and close valve and adjust as needed.
6. Open valve and turn off power.
7. Reconnect power wire to switch.
8. Open and close valve alternately while adjusting switch screw to reach desired shut-off pressure [55 psi].

By-pass screw

Switch-Only Adjustment:

1. To get even lower flow before cycling, only the pressure should be raised, the by-pass should not be adjusted.
2. To lower switch shut-off: turn pressure switch screw counterclockwise in 1/8th increments.
3. To raise shut-off pressure: turn the switch screw clockwise in 1/8th increments.



Switch screw

Chris Beh is an RV Product Manager for SHURflo, LLC. For more information visit www.shurflo.com or e-mail chris.beh@shurflo.com.

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- Registration gives the technician 365 days to complete the course by achieving 80% or higher score on the final assessment. The technician should plan for certification testing within the enrollment period as course extensions are **not** available.

Return completed form to: RVDA | 3930 University Drive | Fairfax, VA 22030 | Ph. (703) 591-7130 | Fax (703) 359-0152

www.rvlearningcenter.com | info@rvda.org

[code: cpwld]

BEST PRACTICES FOR RV BODY SHOPS

Compiled from the Environmental Protection Agency

Recently the Environmental Protection Agency (EPA) passed a rule on hazardous air pollutants that will affect any RV body shop that uses paint and clear coats that contains hazardous air pollutants, such as Lead (Pb), Manganese (Mn), Nickel (Ni), Cadmium (Cd), and Chromium (Cr). Here are some best practices that will not only keep your employees safe, but will also save the dealership money on paint and reduce emissions from your shop.

Spray Paint in a Well-Ventilated Room

For painters, a well-ventilated and maintained spray booth efficiently removes paint overspray from the air, minimizing contact with hazardous coating materials. For the environment, regular filter changes reduce pollutants from the shop. For business, a controlled flow of dust-free air improves the quality of the paint job. Among spray booths—downdraft, semi-down, and cross draft—a downdraft is the most effective at removing hazardous overspray. Remember, it is always better to spray inside a booth or prep station than in an open bay.

Use High Volume Low-Pressure (HVLP) Spray Guns



When operated correctly, HVLP spray guns have notably higher transfer efficiencies (60-70 percent) than conventional spray guns (20-30 percent). The result, with HVLP spray guns, more paint ends up on the RV and

less is lost as overspray. This efficiency is a great benefit to painters, who have less contact with toxic paint components, and the shop, which saves money in paint costs.



Wear Air Supplied Respirators and Chemical Resistant Gloves and Clothing

By using a supplied-air, positive-pressure respirator, painters are much less likely to breathe harmful chemicals in paint spray. Most paint manufacturers say a supplied-air respirator is a "must" when spraying highly toxic materials like isocyanates, the hardener in polyurethane clear coats and in many primers. An air-purifying respirator will not provide adequate protection unless you develop and implement a proper filter change-out schedule, which can be a complex process.



Chemical resistant gloves and paint suits help prevent skin contact with harmful paint materials. Select gloves and clothing that offer protection from the variety of chemicals in paints and coatings. For gloves, nitrile or butyl rubber make the grade, latex does not.

Put Someone in Charge of Health and Safety

The shop manager or owner should review material safety data sheets (MSDS), and communicate chemical hazards and health

and safety practices to employees. Once aware of shop hazards, employees are more likely to take precautions, stay healthy, and stay on the job!

For more information on the new EPA rule see page 30. For more information on body shop safety visit www.epa.gov or www.osha.gov.



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These RV textbooks are useful for current RV service technicians and those interested starting a career in RV service. The 16-volume series, developed by leading RV service experts, covers RV components and operating systems. SAVE WHEN YOU ORDER THE COMPLETE SET! (see next page for details)

Textbook Title	Price	# books	Total \$
Introduction to RV Service Provides an introduction to the RV industry, the various types of RVs and their structural characteristics and systems, the basic tools utilized by RV technicians, and safety in the RV workplace. Summaries of industry codes and standards and RV technician job classifications are also included as well as basic information on using RV service manuals. Developing and demonstrating solid customer relations and record keeping skills are also addressed.	\$19.95		
Basic Electricity Provides a thorough introduction to the basic principles of electricity by covering topics such as what electricity is, how it is produced, how it is used, and how it is measured; AC and DC electricity and circuits; and generators and motors.	\$26.95		
RV Electrical Systems Provides instruction on performing AC and DC voltage systems inspections and tests; servicing AC and DC power sources; servicing wiring/distribution systems; and maintaining, repairing and inspecting AC and DC devices.	\$49.95		
RV LP Gas Systems Provides instruction on inspecting and maintaining LP gas containers and fittings; inspecting and maintaining regulators; inspecting and maintaining the piping system; performing LP gas system tests; purging and filling containers; transferring LP gas from container to container; and burning off LP gas in a container.	\$49.95		
Generators Covers the installation, maintenance and repair of RV generators, the generator section and control system. This includes inspecting, maintaining and repairing generator components and verifying battery voltage, fuel source and pressures, engine operation, output voltage and frequency, and governor operation.	\$39.95		
RV Ranges & Cooktops Provides instruction on the installation, repair and replacement of ranges and ovens. This includes verifying gas pressure; verifying grate clips installation; checking lines and fittings; repairing and replacing components; verifying range burners are not affected by operation of force air furnace or other appliances; and performing function test.	\$39.95		
RV Water Heaters Covers the installation, repair and replacement of RV water heaters — Pilot, DSI (direct spark ignition) and Electric. Topics addressed include inspecting ignition systems, verifying gas pressure; troubleshooting the sequence of operation, repair and replacement of various components; draining and flushing the water heater and inspecting fittings for calcium deposits; checking fittings on the tank; inspecting and replacing the water tank; and checking lines and valves for motor aide.	\$39.95		
RV Plumbing Systems Provides instruction on performing fresh water systems tests; inspecting and repairing fresh water storage tanks, distribution systems, and fixtures and devices; performing waste water systems tests; and inspecting, repairing and replacing waste holding tanks and drainage piping systems.	\$39.95		
RV Heating Systems Covers installation, repair and replacement of RV heating systems, including gravity, pilot and DSI (direct spark ignition furnaces). Topics examined include verifying LP-gas pressure and electrical voltage; inspecting and cleaning burner, pilot, exhaust tube and air intake; troubleshooting the sequence of operation; repairing and replacing various furnace components; inspecting and correcting ducting and return air.	\$39.95		

Textbook Title	Price	# books	Total \$
RV Refrigerators Provides instruction on the installation, repair and replacement of absorption refrigerators (manual and automatic selection). This includes verifying proper venting, AC and DC power sources, LP gas pressure, and leveling; diagnosing and replacing electric and gas components; diagnosing and replacing the cooling unit; diagnosing, repairing and replacing the internal ice maker components; and performing function tests.	\$39.95		
RV Air Conditioning Covers the installation, repair and replacement of air conditioning and heat pump units, including verifying air flow, assessing the integrity of the electrical system, and evaluating the integrity of refrigerant systems.	\$39.95		
RV Pre-Delivery Inspection Introduces and explains the many important steps in inspecting the RV before delivering to the customer, including checking LP gas systems, pre-testing all appliances and accessories, testing and inspecting the AC and DC electrical system; checking safety items, lighting, window roof molding seals, and wiper blades; checking and lubricating doors; visually inspecting fluid levels; and more.	\$39.95		
RV Preventive Maintenance Examines what services to perform for preventative maintenance, including checking LP gas systems; servicing and adjusting appliances; testing G.F.C.Is; winterizing and de-winterizing coach; checking safety items; checking and lubricating doors; checking exterior lights; checking window roof molding seals; changing oil and filter on power plants; checking wiper blades; visually inspecting fluid levels; servicing batteries; inspecting belts and hoses; changing chassis oil and filter and lubricating chassis; changing transmission oil, filter and gasket; visually inspecting chassis; checking lug nuts and tire pressure; flushing and refilling cooling system; and performing a test drive.	\$39.95		
Welding Describes the types of welding, including oxy-acetylene gas welding/cutting; arc welding; MIG welding; TIG welding and plasma cutting/welding; outlines safety procedures; and shop equipment.	\$16.95		
Brake Suspension & Towing Systems Defines, identifies, and explains all major facets of brake suspension and towing systems.	\$39.95		
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RECALLS

SERVICE BRAKES, HYDRAULIC: PEDALS AND LINKAGES

Make: Forest River

Model: Charleston

Year: 2008, 2009

Recall Number: 10V079000

Potential Number of Affected Units: 456

Summary: On certain motorhomes equipped with Kongsberg Automotive adjustable brake pedals, the adjustable brake pedal arm may loosen allowing the arm to rotate around its shaft and swing in front of the accelerator pedal, reducing braking function.

Consequence: A loose brake pedal increases the risk of a crash.

Remedy: Forest River is working with Freightliner to notify owners. Freightliner will conduct the repairs free of charge. The safety recall was to begin in January. Owners may contact Daimler Trucks Warranty Campaigns Department at (800) 647-0712.

EQUIPMENT: OTHER: LABELS

Make: Heartland

Model: Cyclone, North Country, Trail Runner

Year: 2007, 2008, 2009, 2010, 2011

Recall Number: 10V077000, 10V124000

Potential Number of Affected Units: 2,401

Summary: Certain fifth wheels and travel trailers fail to comply with the requirements of Part 567, 'Certification.' It has been determined that these vehicles were manufactured with incorrect axle information printed on the federal certification label. The actual axle rating (GAWR) is 5,080 lbs. and is listed at 5,200 lbs. on the label.

Consequence: A vehicle with the axles loaded beyond the specified weight rating may result in axle failure leading to poor vehicle handling and increasing the risk of a crash

Remedy: The federal certification label will be replaced free of charge with one that has the correct GAWR listed for each axle. The recall began in March. Owners may contact Heartland at (877) 262-8032.

Make: Prevost, Itasca, Winnebago

Model: H3-41, H3-45, X3-45, Sunstar, Journey, Tour, Vista, Voyage

Year: 2008, 2009, 2010

Recall Number: 10V117000, 10V122000

Potential Number of Affected Units: 289

Summary: On certain motorhomes fitted with Ricon public use lifts, it is possible that when the restraint belt tongue is inserted, the buckle will not fully engage the buckle's latch mechanism. In this case, the restraint belt would appear to be latched and the operator could run the lift. If the restraint belt is not fully engaged in to the buckle and latch, the lift may operate with an occupant on the platform.

Consequence: The user of the lift could be injured should the lift move without the restraint belt properly buckled.

Remedy: Prevost and Winnebago are working with Ricon and Ricon will be handling the remedy for this campaign. Please see Ricon's defect report 09E-060. Ricon will provide customers with a warning decal and a DVD-based training aid. The manufacturer has not provided an owner notification schedule. Owners may contact Ricon Customer Service at (800) 322-2884 or by e-mail at www.dmata@wabtec.com.

Check recall information frequently in your service department by visiting the NHTSA website at www.nhtsa.gov.

EPA's HAP Paint Rule Requires Auto Body Shops to File an Initial Notification Form to the Agency Indicating Whether or Not You are Covered by the Rule

By: Brett Richardson, ESQ., CAE

The U.S. Environmental Protection Agency's (EPA) new hazardous air pollutants rule will impact automotive body shops using paint that contains Hazardous Air Pollutants (HAPs), commonly found in most automotive paints, primers, and clear coats. The EPA is not selectively targeting auto body shop, but they are included in a group of rules within a broad spectrum of industries. The rule only applies if coatings contain targeted HAPs:

- Lead (Pb), (> 0.1 percent)
- Manganese (Mn), (> 1.0 percent)
- Nickel (Ni), (> 0.1 percent)
- Cadmium (Cd), (> 0.1 percent)
- Chromium (Cr), (> 0.1 percent)

These chemicals are designated HAPs known or suspected to cause cancer and other adverse health effects and can be found in paint used in the automotive refinishing industry.

The HAP Rule required existing body shops to file an Initial Notification Form on January 11, 2010. The form requests information from the body shops regarding its name, address, managers, a description of operations, and a certification by the body shop manager. Full compliance with the rule is required in January 2011.

RVDA has contacted several of the EPA field offices to ask what the repercussions are for dealers who have missed the initial filing deadline. Office after office repeated that it is better to file the form, than not to file the form, and that they are still receiving

dozens of forms every day and have not opened them all. One field office emphasized that the goal is compliance, and not a "got ya" on the filing deadline.

The HAP rule requires that dealership body shops:

1. Paint only inside filtered, ventilated paint booths or prep stations.
2. Use high transfer efficiency application equipment.
3. Clean guns with non-hazardous solvents, in gun-enclosed washers, or using a method that does not involve atomized spraying to the open air.
4. Have painters trained and certified every five years.
5. Keep basic records demonstrating compliance.

In addition, the rule also allows a body shop to petition for an exemption if it does not spray coatings with any HAPs of concern and it excludes the spraying of coatings from hand-held guns with paint cups of 3.0 fluid ounces or less. Also, paint stripping involving methylene chloride (MeCl) is significantly regulated for shops using more than one ton of MeCl per year. Where possible, body shops should avoid the use of strippers containing MeCl.

Visit RVDA's Government Relations page for more information on the new rule.

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The DLN offers online training for:

- **RV Technicians** – An excellent resource for techs preparing for certification and techs seeking recertification continuing education credits.
- **Service Writers/Advisors** – Useful for new staff and experienced personnel preparing for the RV Learning Center's Service Writer/Advisor certification.
- **Greeters/Receptionists** – Emphasizes customer interaction and service.
- **Dealers/GMs** – Features hot topics, including Lemon Laws, LP gas licensing issues, and Red Flags.

DEALERSHIP REGISTRATION

Company Name: _____

Address: _____ City: _____ State: ____ Zip: _____

Phone: _____ Fax: _____

Mentor Name: _____ Phone: _____

E-mail (at dealership): _____ Fax: _____

****High speed internet access required. RVIA Service Textbooks not included****

_____ location(s) at **\$995 each** = payment due: \$_____ (select payment method below)

PAYMENT METHOD (complete lower section & mail or fax to):

PAY BY CHECK OR MONEY ORDER PAY BY VISA, MASTERCARD

Florida RV Trade Association, 10510 Gibsonton Drive, Riverview, FL 33578, (813) 741-0488, Fax: (813) 741-0688

Name on Credit Card: _____

Card Number: _____ Security Code: _____ Expires: _____

Card Billing Address: _____ City: _____ State: ____ Zip: _____

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For more information, call (386) 754-4285 or go to www.lakecitycc.edu/departments/rvinstitute

RVDA-RVIA RV Service Technician Certification Program Asks Certified Techs to “Stay Connected, Stay Certified” by Supplying Updated Contact Information

The RVDA-RVIA RV Service Technician Certification Program is reaching out to all certified technicians and asking them to “stay connected, stay certified” by providing updated contact information to RVDA.

All certified technicians are receiving a special “Stay Connected, Stay Certified” postcard at their dealership of record. The postcards were mailed in early March.

To ensure technicians receive vital recertification and other information about the RVDA-RVIA RV Service Technician Certification Program, the postcards ask techs for their current phone number, plus their business, home, and e-mail addresses. Technicians can send an e-mail with contact information to techcert@rvda.org or call (703) 591-7130, ext. 102.

If the postcard addressee is no longer employed at the dealership, RVDA is asking that dealerships pass that information on via e-mail at techcert@rvda.org or by calling (703) 591-7130, ext. 102.

STAY CONNECTED • STAY CERTIFIED

Don't let your RVDA-RVIA RV Service Technician Certification lapse because we can't find you. Help us keep our records up-to-date. Contact our office with your current information today.

Two ways to reach us:

- Send an e-mail to techcert@rvda.org include your home and business address, e-mail, and phone, or,
- Call 703-591-7130 ext.102 to update your record by phone.

For program information visit www.RVTechnician.com



The RVDA-RVIA RV Service Technician Certification Program is designed to assist the RV industry and the public by identifying those professionals who have demonstrated the knowledge and ability to satisfy established standards in RV diagnostic and repair procedures, as adopted by the Governing Board. The program tests and certifies only individuals; not dealerships, companies, or other types of business entities.

For information, visit www.rvtechnician.com.

RV Learning Center Accepting 2010-2011 Scholarship Applications

The RVDA Education Foundation Scholarship Program awards \$2,500 scholarships to deserving rising sophomore, junior, and senior college undergraduate students interested in majoring in business, finance, economics, accounting, or other RV industry related subjects. Applications are reviewed under the following criteria: academic achievement, a 500-word essay on goals and objectives in college, extracurricular activities and honors, RV industry involvement, and financial need. Since the program's inception in 2000, \$45,000 has been awarded to 18 recipients. Applications for the 2010-2011 school year are being accepted until June 4, 2010. See page 33 for an application.

The RVDA Education Foundation's RV Learning Center Scholarship



FACT SHEET AND APPLICATION: 2010-2011 ACADEMIC YEAR

About This Scholarship

The RVDA Education Foundation Scholarship Program awards \$2,500 scholarships to deserving rising sophomore, junior, and senior college undergraduate students interested in majoring in business, finance, economics, accounting, or other RV industry related subjects. A factor for awarding the scholarship may be an applicant's background of RV industry employment or a desire to work in the RV business after completing post-secondary education. It is made possible through the generosity of the Newt and Joanne Kindlund Family.

Eligibility Requirements

We will award the RVDA Education Foundation's RV Learning Center Scholarships to RV-related company employees or their dependents based on a series of factors. *Dealer principals and their dependents are not eligible.*

Requirements*

- Must have a 2.8 or better cumulative grade point average, and a 1050 minimum SAT score (1575 minimum on the 2400 point scale). A minimum ACT composite score of 22 is also acceptable.
- Must be a rising sophomore, junior, or senior college undergraduate student.
- Must complete an essay on their goals and objectives for attending college.
- Must submit a copy of Pre-Application Worksheets. These forms are available from guidance counselors or may be downloaded for no charge from the U.S. Department of Education at www.fafsa.ed.gov (FAFSA forms) or at <http://www.fafsa.ed.gov/fafsaws01bw.pdf> (pre-application worksheet).

- Must demonstrate the ability and willingness to fund a portion of their educational expenses on their own.
- Must be accepted into an accredited four-year college or university as a condition of receiving the scholarship.

**All requirements must be met by the application deadline.*

About The RVDA Education Foundation

The RVDA Education Foundation is the educational arm of RVDA. Because the Foundation is recognized by the Internal Revenue Service as a 501(c)(3) charitable organization, donations to the Foundation are tax deductible as charitable contributions.

Applicant's Name: _____

Address: _____ City/State/Zip: _____

Phone: _____ E-mail: _____

Sponsoring RV-related Company: _____

Address: _____ City/State/Zip: _____

Phone: _____ E-mail: _____

High School: _____ Year of Graduation: _____

Address: _____ City/State/Zip: _____

Phone: _____ Highest SAT/ACT Scores: _____

College Attending in 2009-2010: _____

Major: _____

Address: _____ City/State/Zip: _____

Have You Been Accepted?: _____ If No, When Do You Expect to Be? _____

Number of College Credits Completed: _____ College GPA: _____

Estimated College Expenses (One Year): \$ _____ % to Be Covered by Self/Family: _____%

Are You Employed? No Yes Employer: _____

How Long/When? _____

By signing below, I indicate that I have read the fact sheet that accompanied this application and that I meet the eligibility criteria specified for scholarship applicants.

Signature: _____

- ### Enclose with Application:
1. An official copy of your most recent college transcript.
 2. A copy of your SAT/ACT Scores.
 3. An essay of not more than 500 words on "My Goals and Objectives in College."
 4. A list of extra curricular activities, honors, etc.
 5. A copy of your FAFSA form (available at your school or at www.fafsa.ed.gov).
 6. Two photos for publicity (only used if candidate receives scholarship).
- Mail to: The RVDA Education Foundation, 3930 University Drive, Fairfax, VA 22030
or fax to: (703) 359-0152

This form is also available at www.rvlearningcenter.com.

Deadline: June 4, 2010 for the 2010-2011 School Year.

The RV Learning Center Now on YouTube

The RV Learning Center created its own YouTube channel to increase its exposure on social media sites. YouTube allows users to upload video clips and share them on the internet. The channel, located at www.youtube.com/user/rvlearningcenter, provides informational videos on the products and services offered by the RV Learning Center.

Currently Uploaded Videos:

- An introduction to the RV Learning Center
- The 10th Edition *Service Management Guide*
- *The Damage Repair Estimator*
- Technician Online Certification Preparation Course

Future Videos:

- The annual RV Dealers International Convention/Expo Workshop Speakers
- More informational videos on RV Learning Center products and services
- Testimonials from various RVDA dealer members

The benefit of the RV Learning Center on YouTube is that it provides a central location for members to find audio and text-based informational videos. It also provides a forum for those with a slow internet connection to watch videos without the hassle of long download times. In addition, subscribers to the channel will get the latest information on the RV Learning Center before anyone else.

Need Training for Your Parts and Service Departments?

Save 50 Percent on Learning Guide CDs

By: Karin Van Duyse

The RV Learning Center's learning guides are principle-based training tools that cover the core duties and competencies needed by parts and service personnel. The guides are an excellent resource for on-the-job training and certification preparation.

The following learning guides are available:

- Service Manager
- Service Writer/Advisor
- Parts Manager
- Parts Specialist
- Warranty Administrator

They are available in two formats -- in print and as a PDF document on CD. **Sale pricing is available on the CD format only.** See page 38 or visit www.rvlearningcenter.com to order your CDs. Sale ends May 31!

Join the Certified RV Technicians Facebook Fan Page

The RV Learning Center has created a fan page on Facebook for RV technicians. This page gives computer savvy technicians important updates on available training, certification, articles, and news.

Join the fan page now, by visiting www.rvda.org! Then simply sign into your Facebook account and become a fan. If you are not already on Facebook, visit www.facebook.com, and sign up.

Don't miss out on the most up-to-date information available for RV technicians.

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2010 RV Dealers International Convention/Expo

rv sales are revving up... and it's time to make plans to **GO** and **GROW** at the RV Dealers International Convention/Expo. This year's convention will be jammed with vital information that will prepare you and your dealership team to take advantage of new opportunities in today's RV market. You'll leave Las Vegas with **INNOVATIVE IDEAS** that can help you produce **REVOLUTIONARY RESULTS**.

At the 2010 RV Dealers International Convention/Expo you'll find:

- **Advice on wholesale and retail financing options**
- **New inventory management strategies**
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- **A full range of exhibitors committed to help you build profits**
- **A series of dealer-manufacturer meetings for specific RV brands**

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October 4-8, 2010

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			TOTAL DUE: \$

Please check here if you require special accessibility or accommodations.

COUPON CODE # **LV-531**

RATE CHART (All funds in U.S. dollars)

RVDA Member Dealers	\$513	\$999
Non-Member Dealers	\$1,199	

The 2010 RV Dealers International Convention/Expo has a per-person value of: \$1,865

METHOD OF PAYMENT (Note: all funds in U.S. dollars)

Check Enclosed (payable to RVDA)
 VISA MasterCard AMEX Expires: _____

Card #: _____
 Security Code (3 or 4 digit code on card): _____
 Billing Address: _____

 Signature: _____

MAIL OR FAX A COPY OF THIS FORM TO:

RVDA of America, 3930 University Drive, Fairfax, VA 22030-2515 • (703) 591-7130 • Fax: (703) 359-0152 • www.rvda.org
 RVDA of Canada, 204-6411 Buswell St, Richmond, BC V6Y 2G5 • (604) 718-6325 • Fax: (604) 204-0154 • www.rvda.ca

CANCELLATION / REFUND POLICY:

All cancellations must be in writing and received by August 31, 2010, to qualify for a refund. A \$30 administrative fee will be deducted from each refund request received by July 31, 2010. A \$100 administrative fee will be deducted from each refund request received between August 1, 2010 and August 31, 2010. No refunds will be made after August 31, 2010.

TRAINING SCHEDULE



2010 RV Dealers International Convention/Expo
October 4-8, 2010 Las Vegas, NV

Towing Seminar Series

September 16, 2010 Markham, ON Canada
September 30, 2010 St. Louis, MO
October 14, 2010 Elk Grove Village, IL
Presented by Cequent Performance Products

RV Refrigeration Reconditioning Training

May 10 – 14 Benton, KY
June 7 – 11 Benton, KY
Presented by Ford RV Refrigeration

Recreational Vehicle Technician Certification Training

July 5 – September 10, 2010 Largo, FL
September 14 – November 19, 2010 Largo, FL
January 3 – March 11, 2011 Largo, FL
Provided by the Recreational Vehicle Training Center, Inc.

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FRVTA's Distance Learning Network

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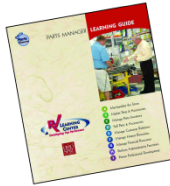
CDs On SALE Until May 31, 2010!



Looking for new training materials for your parts and service departments? The RV Learning Center, in partnership with The Ohio State University's CETE, has developed a comprehensive set of *RV Parts Personnel Learning Guides* & *RV Service Personnel Learning Guides*. The Learning Guides are a comprehensive training tool that identifies the core duties and competencies needed in each position. Here's a breakdown of what each Learning Guide focuses on:

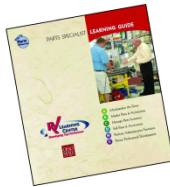
Parts Manager Learning Guide

- Merchandise the Store
- Market Parts & Accessories
- Manage Parts Inventory
- Sell Parts & Accessories
- Manage Customer Relations
- Manage Human Resources
- Manage Financial Resources
- Perform Administrative Functions
- Pursue Professional Development



Parts Specialist Learning Guide

- Merchandise the Store
- Market Parts & Accessories
- Manage Parts Inventory
- Sell Parts & Accessories
- Perform Administrative Functions
- Pursue Professional Development



Service Manager Learning Guide

- Manage Service Department Work Flow
- Provide Customer Service
- Generate Service Department Revenue
- Review Administrative Reports
- Manage Human Resources
- Supervise Support Staff
- Train Service Department Staff
- Promote Public Relations
- Perform Administrative Activities



Service Writer/Advisor Learning Guide

- Satisfy Customer Requirements
- Coordinate Customer Appointments
- Maintain Daily Operations
- Coordinate Technician Workload
- Coordinate With Other Departments
- Participate in Professional Development



Warranty Administrator Learning Guide

- Process Open/Closed Repair Orders
- Process Warranty Claims, Parts, and Payments
- Maintain Customer and Manufacturer Relations
- Perform Administrative Activities
- Pursue Training and Professional Development



To order, fill out the order form below, visit www.rvlearningcenter.com, or call the dealer services hotline.

Title	Qty	Member	Non-Mem	Total			
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Full Set (Sections A – I), CD includes:		199.50	279.95				
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Section B – Market Parts & Accessories							
Section C – Manage Parts Inventory							
Section D – Sell Parts & Accessories							
Section E – Manage Customer Relations							
Section F – Manage Human Resources							
Section G – Manage Financial Resources							
Section H – Perform Administrative Functions							
Section I – Pursue Professional Development							
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Full Set (Sections A – D & H - I), CD includes:		149.50	209.95				
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Section B – Market Parts & Accessories							
Section C – Manage Parts Inventory							
Section D – Sell Parts & Accessories							
Section H – Perform Administrative Functions							
Section I – Pursue Professional Development							
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Section C – Generate Service Department Revenue							
Section D – Review Administrative Reports							
Section E – Manage Human Resources							
Section F – Supervise Support Staff							
Section G – Train Service Department Staff							
Section H – Promote Public Relations							
Section I – Perform Administrative Activities							
Service Writer/Advisor Learning Guide – save 50% on CD format!							
Full Set (Sections A – F), CD includes:		149.50	209.95				
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Section B – Provide Customer Service							
Section C – Generate Service Department Revenue							
Section D – Review Administrative Reports							
Section E – Manage Human Resources							
Section F – Supervise Support Staff							
Warranty Administrator Learning Guide – save 50% on CD format!							
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Section D – Perform Administrative Activities							
Section E – Pursue Training and Professional Development							
TOTAL PURCHASE: (\$US)		\$					

Contact Name: _____

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Phone: _____ E-mail: _____

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The XtraRide Service Agreement Program is backed by Lyndon Property Insurance Company, a Protective company, in all states except New York. In New York this product is backed by Old Republic Insurance Company. *An RVDA endorsed product or service is one that has been extensively evaluated by the RVDA to assure quality, dependability and overall value. RVDA and the RVDA Education Foundation receive compensation from a Protective company for business generated by RV dealers. **The enhanced XtraRide Program may not be available in every state on 1/1/2010 pending state approval.