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Issue 2

The Future of Tow Vehicles?

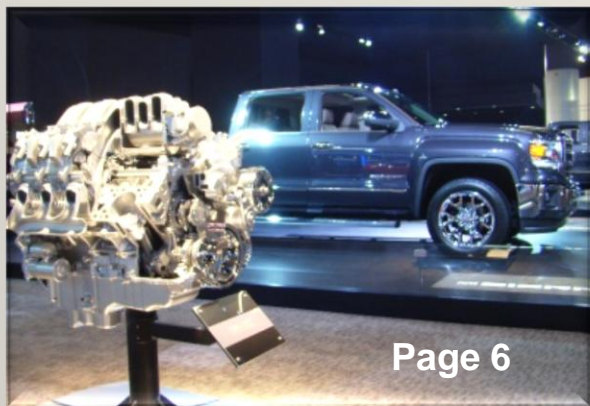


Bonus Feature

Detroit Auto Show Photo Preview

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Remember
your travels?



*The laptop we would've used to
keep in touch with the kids.*



*Cook's Field, the week after we
missed the Bluegrass Festival.*



*The guy from Ed's Towing.
Spent three hours with him.*

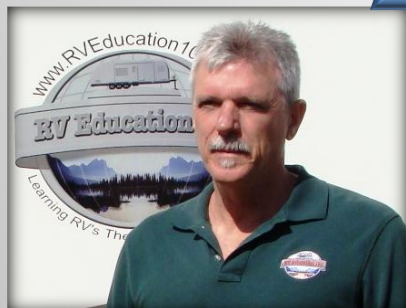
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I just returned from the North American International Auto Show (NAIAS) in Detroit. GM invited me to take a look at their all-new 2014 Chevy Silverado and GMC Sierra trucks. It was a great opportunity to not only look at all the new vehicles, but to speak with auto industry insiders, designers and engineers.

One goal I had was to find out what the future holds for tow vehicles. There is no doubt with the stringent fuel economy standards the federal government is imposing over the next decade automobiles are getting smaller, lighter and using alternative energy sources. But what about our tow vehicles? Are they in jeopardy of becoming extinct or can auto makers still get the performance and power required to tow RVs, and improve on fuel efficiency too? Take a look inside for these answers and more.

Mark

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"Your total RV experience will be enhanced through your RV education." ~ Mark Polk

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The Future of Tow Vehicles



By Mark Polk

If you haven't noticed there are major changes happening in the automobile industry. Our federal government is imposing stringent Corporate Average Fuel Economy (CAFE) standards on auto makers over the next decade. Fleet-wide average fuel economy is mandated to be 34.1 mpg by 2016 and 54.5 mpg by 2025.

This will be done on a gradual scale, meaning vehicles like ½ ton trucks will need to hit about 30mpg by 2025 while small cars in an auto maker's fleet will need to achieve about 60 mpg by 2025.

With today's ½ ton trucks averaging in the low 20 mpg range I have real concerns about the future of tow vehicles. Can a ½ ton truck get 30 mpg and still have the required power, performance and towing capacity to safely tow a 3 ton travel trailer or 5th wheel trailer?

Increasing fuel economy in a truck requires measures like making the truck lighter, using a smaller engine and making other significant changes to the power train. It would seem to me a lighter truck with a smaller engine would jeopardize the load and towing capacity.

In January GM invited me to attend the North American International Auto Show (NAIAS) in Detroit, Michigan. They wanted me to look at the all-new 2014 Chevy Silverado and GMC Sierra truck line-up.

This would be the perfect opportunity to get an inside look at what auto makers are doing in preparation for the new CAFE standards, and find out what to expect from tow vehicles in the future.

Not only did I get to see GM and other auto manufacturer's new trucks, but I had the opportunity to interview some key GM personnel and get some of my questions and concerns addressed.

It was fascinating to have all the folks involved with designing these vehicles, and all of the engineers right there under one roof. I learned a great deal about General Motors new trucks and how they planned to start preparing for the more stringent fuel economy regulations.

We had full access to the all-new 2014 Chevy Silverado and GMC Sierra trucks and were given a vehicle walk-around by lead engineers.

I like GMs approach, keeping some V8 engines in their trucks, and through the use of Direct Fuel Injection, Variable Valve Timing & Cylinder Deactivation significantly improving the truck's fuel economy.

[You can go here to read my full review](#) of the 2014 Chevy Silverado and find out what else GM did to help increase fuel economy, but still have power, performance and towing capacity.



GM Eco Tec3 Engines

On day two of the show I had a chance to interview the GM Marketing Director for Chevy trucks, the GM Executive Chief Engineer for Full & Mid-Size trucks and the GM Chief Engineer for Small Block Engines.

[Click here to watch the interviews](#)

I mentioned a moment ago that GMs approach to keeping power and performance, while improving fuel economy, was through their all-new Eco Tec3 engines with Direct Fuel

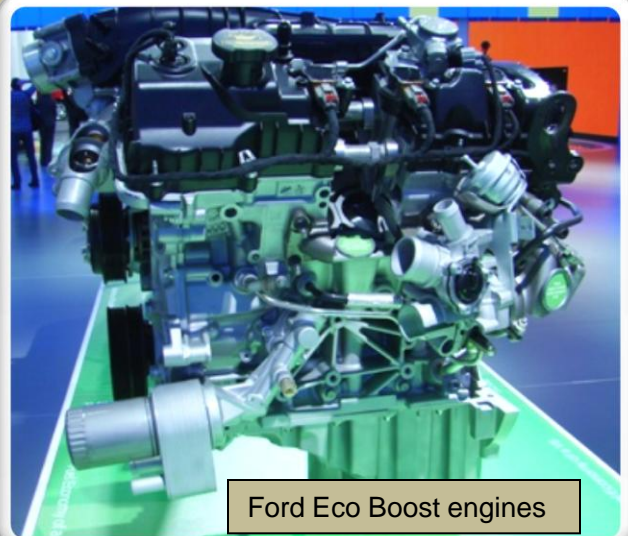
Injection, Variable Valve Timing & Cylinder Deactivation .

Fords approach to the same problem for its F150 ½ ton truck is the smaller Eco Boost family of turbocharged, Direct Fuel Injected engines.



Ford F-150

The Eco Boost technology is designed to deliver the power and torque commonly associated with larger displacement engines while improving fuel efficiency by up to 20% over those larger engines.



Ford Eco Boost engines

Although GM hasn't released fuel ratings for the new Eco Tech3 engine

line-up the 2013 Dodge took best in class gas mileage in both V6 and V8 engines.



Dodge Ram 1500

The Dodge 1500 ½ ton truck is tackling the same problems with its Pentastar V6 engine and new eight-speed automatic transmission. The Pentastar is an aluminum block, dual overhead cam, 24 valve V6 engine with increased HP & torque and 20% better fuel economy than other engines.

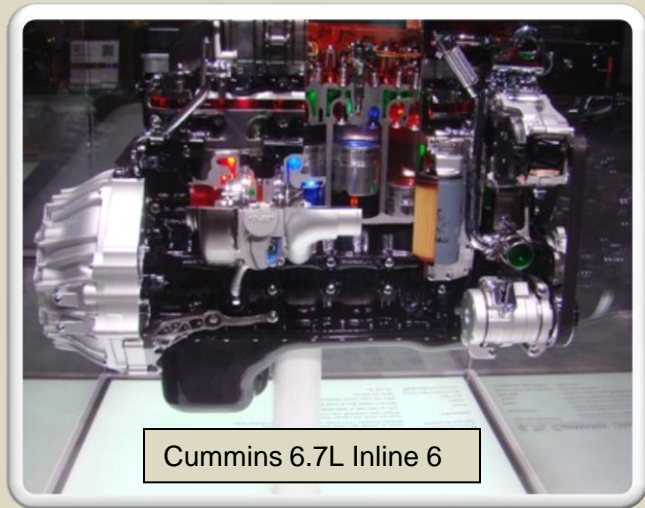
Even Dodge’s hemi V8 engine is producing more power, at 395 hp, while significantly improving fuel economy.

It seems that the big three truck manufacturers are all finding new ways to improve performance while making strides to achieve the almost unrealistic CAFE standards for 2016 and beyond.

That’s a good thing for us owners who expect a truck to be a truck when it comes to hp, torque, power, performance and towing capacity. And it’s good for us RV owners too. I was thoroughly impressed with what I saw in Detroit, and it helped relieve some concerns I had about the future of trucks and towing.

This article was primarily focused on the future of ½ ton trucks since this is the category that will be affected by fleet-wide CAFE fuel standards.

But when it comes to Heavy Duty trucks my best- in-show is the Dodge Ram with the Cummins 6.7L engine.



Cummins 6.7L Inline 6



Trailer Towing Quick Tips



Tongue Weight

On trailers weighing over 2000 pounds the tongue weight should be 10 to 15% of loaded trailer weight. For TW range multiply the loaded weight by .10 and .15

4WD Tow Ratings

A 4-wheel drive vehicle has a lower tow rating than an identical 2-wheel drive vehicle. Why? The transfer case adds weight to the vehicle which in turn lowers the tow rating by that amount.

Hitch Receiver Weight Rating

Your tow vehicle may be rated to tow 7K pounds, but if the hitch receiver on the vehicle is rated at 5K pounds that is the most you can tow.

Determining Tow Ratings

When you determine the tow rating of a vehicle check the rear axle ratio; the same type & size vehicle can vary by several thousand pounds.

Check the Rear Axle Ratio

Axle ratio is a comparison of how many times the drive shaft rotates, vs. the rear wheels. The higher the numeric value the better it tows.

Never Exceed Weight Ratings

Every single component in a towing system has a weight rating. Never exceed the lowest rated component in the system.

Check the GCWR

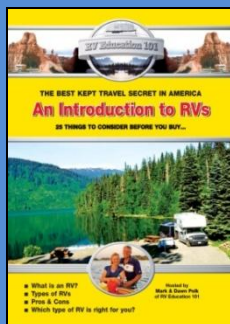
A rating often overlooked is the Gross Combined Weight Rating. GCWR is the max weight of the vehicle & trailer **combined** when fully loaded.

Q&A with Mark

Q: Hi Mark, we just started shopping for an RV and quite frankly are amazed at how many different brands there are. The more we shop the more confused we get! Can you offer any advice for a first time buyer?

A: When you are shopping for an RV at an RV dealership or RV show find out what brands of RVs they have to offer and how long they have carried these product lines. If a dealer has been selling a particular brand or product for a long period of time there is probably a good reason why. You want the most for your money, but you also want a manufacturer who builds a quality product and stands behind their product with a no hassle warranty. Look for manufacturers who have been building quality RVs for a long time and dealers who have been selling these products for a long time. New manufacturers and dealerships come and go, but the reputable ones have been around for years. This is why it is important to ask questions and to physically visit the RV dealership before you buy.

For some great RV buying tips check out our [Intro to RVs DVD](#)



To stay current with what's happening in the world of RVs between magazine issues visit our [Blog](#). We post informative RV tips and information a couple times per week. There is also an option to follow the [Blog](#) via e-mail. Just look on the right sidebar and when you sign up you'll be notified each time we make a post.



Dinghy Towing Quick Tip

Make sure and follow any special towing instructions or procedures found in your vehicle owner's manual. You might be required to remove a fuse, or to stop towing after so many miles and start the vehicle to allow drive train components to be lubricated. **Following any and all special instructions** can save you money and protect the vehicle warranty.

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It's Time for a Truck Towing Standard



By Mark Polk

Tow Vehicle Standard SAE J2807

I first wrote on this topic in 2010 and have waited patiently for 2013 to get here so the new SAE J2807 towing standard could be implemented. I have said for years that from a consumer safety standpoint, there needs to be a standard to measure tow vehicle weight ratings against rather than allowing auto manufacturers to determine their own tow ratings.

Starting several years ago engineers from domestic and foreign auto manufacturers worked with the Society of Automotive Engineers (SAE) to establish standardized testing across the board for tow vehicle ratings. The standard was revised, agreed on and established with an implementation date of 2013. This gave all auto manufacturers sufficient time to prepare for and implement the new standard.

I am getting ahead of myself. The best place to start is with my original article and in closing I'll talk about where

things currently stand with the new towing standard.

What is J2807 and why is it important?

If you haven't heard, SAE J2807 is a standard that will be used to determine the trailer weight rating of all tow vehicles. I don't always agree with standards, government or otherwise, but there is one standard looming out there that I am highly in favor of. That standard is called "Performance Requirements for Determining Tow Vehicle Gross Combination Weight Ratings and Trailer Weight Ratings," or in shorter terms Society of Engineers (SAE) standard J2807.

I do applaud auto manufacturers for getting behind and supporting a standard for measuring tow ratings for vehicles. I have always had issues with vehicle manufacturer published tow ratings, and even more so in the truck wars of recent years.

When a ½ truck is rated to tow more than its bigger ¾ ton brothers I start to see red flags popping up everywhere. To bring you up to speed on this topic take a minute to read my first article titled ["let's Talk 1/2 Ton Trucks"](#) I wrote in 2007, and my follow-up article ["2010 Let's Talk 1/2 ton Trucks"](#) which I wrote three years later.

In my humble opinion the truck towing wars are nothing more than a marketing strategy, based on bragging rights, to help sell trucks. My truck can tow more than your truck. And in reality the method for determining those bragging rights was left up to the guy doing the bragging. Sadly the consumer was misinformed through advertising and left to believe if they purchase this truck it can tow this amount of weight.

The reason for some of these unrealistic tow capacities, at least the way I see it, was until now vehicle manufacturers had free reign to test and determine a vehicle's tow capacity based on its own criteria. If somebody tells you to perform your own testing and publish the results the tendency is to test in a direction favorable to the design of the said vehicle you are testing. Therefore "my truck can tow more than your truck!"

On the other hand if you test against a specific standard you get results based on that standard, not just on some of the design elements built into the product being tested. In other words you get actual results and there is no 'bully' on the block boasting I can tow more than you can tow. Now we know the real numbers and the consumer wins in the end because you have a standard to compare and measure vehicles against.

This new standard will measure a vehicles towing performance based on several criteria using a standard test trailer. **These criteria are:**

- 1) Maintaining speed on a specified grade.
- 2) Timed acceleration on level terrain.
- 3) Timed acceleration up a specified grade.
- 4) Response to trailer sway.
- 5) Braking characteristics at Gross Combined Weight Rating (GCW).
- 6) Hitch receiver structure and strength.

To give you an example of what occurs when you apply these new standards in 2011 Toyota put its Tundra through the paces. The results were towing capacities dropping 400lbs, 500lbs and 1,100lbs for various models of the Tundra, over previously published towing capacities. I thought it was notable for Toyota to step up to the plate and certify the Tundra against the new standards well before the 2013 start date. But then Toyota turns around and makes a commercial touting the Tundra can tow the space shuttle. Come on guys! You take one step forward and two steps back. What kind of message does it send to consumers that a ½ ton truck can tow the space shuttle? Other auto manufacturers are supposed to follow suit for model year 2013, including Chrysler, GM, Ford and Honda and many trailer and hitch manufacturers as well.

It will be interesting to see what happens to tow capacities when SAE J2807 is implemented across the board. I would venture to say that many other ½ ton tow ratings and Gross Combined Weight Ratings (GCWR) will be

significantly lower, but we'll just have to wait and see. This J2807 standard may not answer all of the questions we have, or provide all of the information we would like, but a standard is long overdue for something as important as determining vehicle tow ratings. Now maybe the consumer will have some reliable information to base a buying decision on when deciding which vehicle can safely tow the load! It sure beats the "my truck can tow more than your truck" mentality.

Fast forward to 2013

That was my original article. As I mentioned earlier I have literally waited for years for this new standard to be implemented. If it means lowering previously published tow ratings so be it, it's the right thing to do.

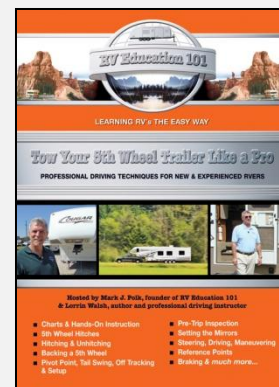
So where do we stand early in 2013? Toyota started using the new standard in 2011 and I applaud them. GM moved to the new standard with its 2013 vehicle line-up and went as far as publishing towing capacities based on the new standard, but reverted back to old ratings when Ford decided not to use the J2807 standard until all of its newly designed models come to market. In other words Ford remains the 'bully on the block' boasting previous non-J2807 towing capacities for its line-up. I heard Dodge did comply with the standard, but have not seen anything in writing. I guess it was wishful thinking on my part.

To say the very least I am disappointed. Why can't putting the safety of the consumer be first, rather than trying to sell more trucks based on some deceitful marketing tactics?

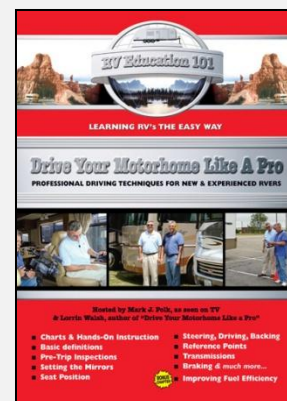
This topic is already confusing enough for the consumer, trying to muddle through things like a properly-equipped vehicle, weight carrying hitch vs. weight distributing hitch, and all the other towing terminology.

Why not give the consumer a fair shake and at least inform them of what the vehicle can safely tow?

Maybe it will happen in 2014. ~ **RV 101**



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Trailer Brake Lessons Learned

If there is one phrase I advocate it is “you get what you pay for”. This phrase always holds true, regardless of what you are purchasing. If you are going to buy a product intended to perform a specific job it only makes sense to pay a little extra and get one that does the job flawlessly, especially where safety is concerned.

Let's apply “you get what you pay for” to an important topic like towing a trailer. For the sake of an example let's say you purchase a 6,000 pound travel trailer to tow behind your ½ ton truck. The brakes on the truck are designed to stop the truck, but not an additional 6,000 pounds behind the truck. You are already aware that you need to purchase an electronic trailer brake controller to supply power from the tow vehicle to the trailer's electric brakes. You soon discover there are lots of different electric brake controllers available and they come in a wide price range too. Do you purchase the \$50 time based model and hope it works effectively?

Stopping a 6,000 pound trailer is not something you should take lightly. It is a safety issue for you, your loved ones and everybody else traveling on the same road as you. This is where the phrase “you get what you pay for” really matters. You have the choice to purchase a less expensive, very basic, time delayed electric brake controller and save a few bucks, or you can spend more and get a network model that plugs into the On Board Diagnostic II (OBD II) connector in the truck cab and gathers data from the tow vehicle to effectively manage the trailer brakes. The less expensive model sends a pre-determined amount of power to the trailer brakes every time you step on the brake pedal. What if the pre-determined amount of power isn't enough for the current road or braking conditions?



The more expensive model is a network based controller. This model can observe the engine, transmission and vehicle speed and then analyze all of the data to determine the proper level of trailer braking required to stop the trailer, based on all of the current conditions. It links your

computer network and uses multiple data parameters in a proprietary way to create amazingly proportional trailer braking.

[Direlink Brake Controller](#)

For safety, reliability, performance and longevity there is no question you should go with the better network based controller.

Paying more to get a better product is great, but the only way to achieve optimum performance from the better product is to ensure that it is properly installed. If you use scotch-locks to make wire connections, rather than the correct type of sealed wire connectors, the more expensive brake controller might not work any better than the \$50 model. The same is true if you use the wrong gauge wire over a certain distance, resulting in a drop in voltage and less efficient braking. **For optimum trailer brakes everything in the brake system must be in good working order.**

In addition to proper installation of the network based brake controller it is also important that you perform routine maintenance on the remainder of the trailer brake system. This includes but is not limited to a 3,000 mile, or annual inspection of the trailer brake and bearing components. **Caution:** Before removing any tires/wheels to work on the trailer brakes certain safety procedures must be followed. The trailer needs to be parked on a hard flat level surface.



The tires on the opposite side you plan to work on must be chocked to prevent any possible movement forward or backward. The trailer must be jacked up according to manufacturer instructions and properly rated jack stands installed to support the trailer's weight while the work is being performed.

Note: If you don't feel comfortable performing this type of maintenance yourself you should have an authorized RV service center do it for you.

This inspection should include checking the following items:

Brake Linings: Inspect the brake linings for wear and contamination that may affect the operation of the brakes. It's not uncommon to see grease and other contaminants on the brake linings. As brake linings wear and/or are contaminated the braking force diminishes.

Brake Drums: Inspect the brake drums for wear and scoring/grooves that may affect the operation of the brakes and damage brake linings.

Springs & Hardware: Inspect the return springs and hardware for proper mounting and operation.

Brake Magnets: Inspect the magnets for wear. If excessive wear is evident (i.e., windings can be seen through the surface) the magnet needs to be replaced. Inspect the wiring for chaffing or wear and repair as required.

Brake Adjustments: As the brake linings begin to wear the brake actuating lever must travel further to apply the same braking force against the drums. Eventually the brake linings cannot effectively reach the drums and manually adjusted brakes need to be adjusted. This requires a brake adjusting tool and proper clearances from the manufacturer. It's probably best left to the professionals.

Wheel Bearings, Races & Seals: Another common problem with trailers is lack of wheel bearing maintenance. Bearings need to be inspected for any damage and proper lubrication. Seals and bearing races need to be inspected for damage.

Battery Maintenance: Don't forget to include routine battery maintenance too. The trailer break-away switch will not operate if the auxiliary battery is not connected or properly charged.

All too often a trailer sits for periods of time not being used. Many times this non-use is for extended periods of time. When it's time to use the trailer we tend to hook it up and drive off without really considering what may have gone wrong while it sat in storage. It's common for a battery to discharge, for tires to be dangerously low on air, and the trailer plug contacts to get dirty and corroded. If the trailer brakes don't work properly because of a bad contact in the plug, or a tire fails because of under inflation it puts us and others in harm's way.

To help prevent these types of things from happening I want to include a simple pre-trip trailer checklist you can follow to make sure your trailer is ready to hit the road. After properly hitching the trailer (i.e. WDH adjustments, sway control, safety chains) to the vehicle make the following checks:

✓Inspect the trailer plug and vehicle receptacle contacts for dirt, debris and corrosion. Clean the plug and contacts as required, ensuring a proper connection. Plug the cord in and test all trailer lights.

✓Connect the trailer break-away lanyard to a secure connection on the tow vehicle.

✓Test the operation of the trailer brakes. Remove any wheel chocks. Pull the trailer forward slightly and depress the brake pedal to verify the trailer brakes are engaging. Test the brake controller manual override for proper operation.

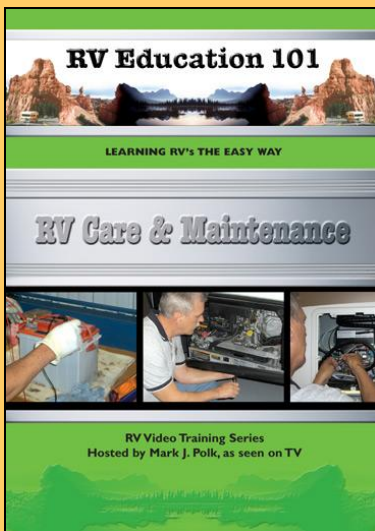
✓Check all tires for abnormal wear and any weather cracking/checking. If any cracks in the tire sidewalls are deeper than 1/32" have the tire inspected by a professional before towing the trailer.

✓Check and adjust tire pressure in accordance with the federal certification label on the trailer or using the tire manufacturer load and inflation tables.

✓Check the condition of the battery. Check the water level in each cell and add distilled water as required.

✓Check the battery state of charge with a multimeter or battery hydrometer. If you don't feel comfortable working on or around lead acid battery's have battery maintenance performed by an authorized service center.

✓Every 3,000 mile or annually schedule a trailer brake and wheel bearing inspection.



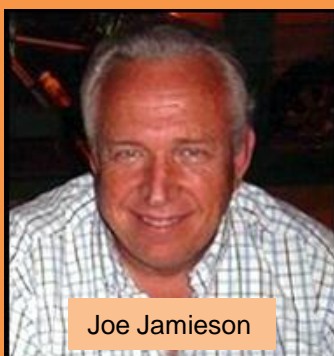
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RVing with Mark Polk & friends

Towing a trailer that weighs twice as much as the tow vehicle requires proper equipment to do it safely. You are already at a disadvantage because the brakes on the



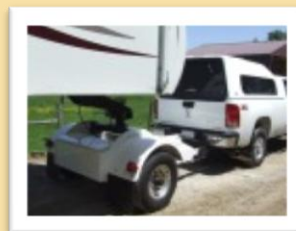
Joe Jamieson

trailer are electric drum brakes rather than disc brakes. In addition to brakes on the trailer and tow vehicle you need a properly sized & equipped truck, and the proper hitch-work.

I recently met someone as concerned about trailer towing safety as I am. He was not only concerned about it, he actually did something about it. His name is Joe Jamieson. Joe is a Federal Aviation Agency certified Airframe and Powerplant Mechanic, a former Air Force Pilot, a Federal Aviation Agency certified Air Transport Pilot and an Inventor and Industrialist, who focuses his efforts on enhancing the safety of transportation systems. From designing and manufacturing autopilot control systems for jet-powered helicopters, his inventions are aimed at keeping people safer when operating aircraft, vehicles and equipment.

Fortunately for RV owners his latest brainchild is the Automated Safety Hitch™ System for trailers.

This invention eliminates all the trouble, inconvenience and hazards of hitching up, driving and unhitching traditional gooseneck trailers, 5th wheel trailers and soon conventional trailers. Let's talk to Joe right now.



MP: Hi Joe. Thanks for joining me today and for the opportunity to sit down and talk about an important topic like trailer towing safety.

JJ: Hi Mark. Thank you, I appreciate you asking.

MP: I guess the first question would be what exactly is the Automated Safety Hitch?

JJ: The Automated Safety Hitch System is much more than a hitch. It is a system to eliminate the short comings of towing trailers in the back of pickup trucks and a smarter option for owners of long bed trucks, short bed trucks, lifted trucks, and SUVs to pull the safer and more stable 5th wheel and gooseneck trailers instead of bumper pull trailers. The Automated Safety Hitch System is not a trailer. It is classified as a lift or drop axle that better distributes the load of the vehicle.

When I first started to buy a gooseneck trailer, during 2003, I looked for structural soundness, accommodations and comfort.

After my first demonstration ride I added safety to my shopping list instead of assuming that the truck and trailer industries were addressing safety. During the demonstration ride, the truck in front of us had stopped short due to a vehicle pulling out in front of it. While it looked as though we had sufficient room to stop, with my foot applying steady pressure on the brake pedal, I sat there watching the back of the truck in front of us getting closer and closer until I had steered right to make use of the wide shoulder of the road and came to a stop well past the truck.

My next stop was checking with my automobile insurance company. There I found that they only cover the liability of pulling a trailer. In other words, my automobile insurance would only cover the damage done by the trailer to people and property if I had an accident or incident. The damage to the trailer would not be covered. When I went to the insurance agency that insured my horses, I was told that there were only insurance policies on the trailer if I financed it. However, the insurance would end when I paid off the note. Wanting to know why, I decided to find out.

With my Aerospace business, we had a number of large Insurance companies' flight departments as customers. Calls to the Chief Pilots, of two of these companies, yielded face to face meetings with their officials. Both meetings yielded essentially the same reasons not to insure these trailers. Their main reasons were:

- 1) There being a lack of training of the driver.
- 2) There is probably a lack of experience of the driver.
- 3) Their assessment of the trailer electric drum brakes.

- 4) Their belief that the electric drum brakes can be unreliable due to improper maintenance.
- 5) The geometry of the gooseneck trailer cutting to the inside of the turn.

Wanting to diversify my business from being so much aviation related and seeing that finding a solution to their concerns would fit our focus to make transportation systems safer, we decided to work on the problems.

When we went back to these insurance companies with The Automated Safety Hitch System we were congratulated for addressing all of their concerns. Even their concern of a lack of training of the driver. During the demonstrations, they saw that with The Automated Safety Hitch System, one can essentially just drive the truck normally with The Automated Safety Hitch System taking care of the braking and turning. The demonstrations of maneuverability and controllability were very much appreciated also. Two individuals of one group and one individual of the other group bought an Automated Safety Hitch System for themselves.

While the main reasons for The Automated Safety Hitch System was to increase safety by enhancing braking, controllability and maneuverability, the automation came about as an afterthought. While attending a rodeo, I happened to observe this very happy couple approaching their disconnected rig. It had rained quite a bit so the field was muddy. By the time this once happy couple hooked up to their trailer with one driving and the other directing, they were quite annoyed and their once happy daughter was upset. Even with their four wheel drive dually, a good size tractor had to pull the rig ten feet to the pavement. By the time I arrived home, I decided to automate the process of attachment and enable the trailer to pull itself out of the mud.

MP: Wow, what an interesting back story. I have always said two of the biggest concerns when

towing a trailer are a tow vehicle that can safely handle the load and safely stopping all of that weight behind the tow vehicle. How does your hitch system help solve these two major concerns?

JJ: What you are addressing is the importance of the tow vehicle's braking capacity, braking effectiveness and controllability.

The first issue addressed during the beginning phase of The Automated Safety Hitch System's design effort was why did the trailer rig, of the demonstration ride mentioned in answering your first question, not stop effectively. The tow vehicle was a one ton dually in very good condition and we spent time adjusting the brakes of the trailer. After analyzing all the dynamics involved, we realized that the weight shifting of the trailer is the big part of the problem and more braking capacity with braking integration would be very helpful.

Having been talking to many people who have been pulling trailers for a good number of years, there have not been many people who have heard of the weight shifting phenomenon when stopping. **So, what is weight shifting?** Without taking a lot of your time now and not drawing dynamic engineering diagrams, let me explain how everyone driving an automobile, pickup truck, van or SUV has experienced the effects of weight shifting every time they stop when not pulling a trailer. The faster you are traveling, and the faster you apply the brakes, the more you notice the front of the vehicle move downward. That downward movement is caused by the weight shifting of the vehicle while stopping. This is why automobile manufacturers place at least 75% of the braking capacity on the front axle. The weight shifting phenomenon is also providing maximum steering effectiveness when you need it the most.

Now, the trailer you are pulling is likely weighing as much or more than the vehicle pulling it.

The weight shift of the trailer causes the pin weight of the trailer to increase significantly. With the pin weight of the trailer being placed a few inches in front of the pickup truck's rear axle, the more you are you are trying to stop and the more effective your trailer brakes are the more the pin weight of the trailer is increasing. You have a more serious problem when you have hydraulic trailer brakes with the front of the trailer in the back of the truck. This pushes down on the rear of your truck's frame causing there to be less weight on your front axle where 75% of your braking is and all of your directional control steering. When you see a rig, having a trailer that is too heavy for the truck pulling it stopped at a traffic light with the weight raised off of the front axle and think that you would never be that foolish, you may be looking somewhat the same when braking, especially if your trailer has hydraulic brakes and the trailer's king pin or hitch ball is in the back of your truck.

The Automated Safety Hitch System design enables you to more safely handle the load and more safely stop all of that weight behind the tow vehicle. This is accomplished by removing most of the trailer's pin weight off of the frame of the vehicle, placing the pin weight slightly in front of its own full size truck's steerable axle having 75% of the braking capacity of a one ton truck. What we are addressing, by doing this, is the "weight shifting" of the trailer when you are trying to stop.

We also increase stability by lengthening the vehicle's wheel base while you are pulling the trailer and automatically integrating the vehicles brakes, the full hydraulic vented disc brakes of the Automated Safety Hitch System and the trailer's brakes. The Automated Safety Hitch System brakes are adjusted by your vehicle's brake controller when you adjust your trailer brakes.

After assessing The Automated Safety Hitch System, a group of automotive engineers stated, "We saw that with this system, you have nearly 100% braking effectiveness and nearly 100% steering effectiveness of the tow vehicle while the weight shifting of the trailer is now an asset, making the full hydraulic disc brakes of The Automated Safety Hitch System more effective." "The Automated Safety Hitch System should be part of every heavy tow package". "With the increased wheel base, longitudinal stability and controllability is also phenomenal".

MP: Wow again! It's interesting to learn the dynamics, and from a safety aspect that's incredible. Adding another axle into the mix is like extending the wheelbase of the tow vehicle. This of course provides greater stability when towing the trailer. Can you tell our readers a little about this axle and its benefits where towing is concerned?

JJ: Sure. We wanted to utilize a steering axle having a high load rating, with a heavy duty, full hydraulic, vented disc braking system and a proven track record for both on and off road usage. Our Dana 70 series axle fulfilled our search criteria nicely. Its load bearing and brake system shows to have long distinguished service experience in vehicles ranging from one ton Dodge trucks to greater than one ton large aircraft de-icing trucks.

The biggest features this axle gives to The Automated Safety Hitch System are its structural strength, the additional braking capacity, the additional braking effectiveness, additional maneuvering capability and enabling the additional wheel base length for better controllability. Our full size truck front steerable axle has the equivalent full hydraulic vented disc brake system of the front steerable axle of at least a one ton truck. Most small, medium and large trucks, SUVs and vans have at least

75% of their braking capacity on the front axle. With The Automated Safety Hitch System; you are adding at least 75% of the braking capacity of one ton trucks and greater to your tow vehicle. After researching numerous other ways to safely deal with the weight shifting of the trailer when stopping, as discussed while answering your previous question, the most effective, most reliable system and economical design requiring the least amount of maintenance is to put the pin weight of the trailer on its own proven heavy duty, steering and braking axle.

The weight ratings of the industry seem to consider static rather than dynamic situations. The acronym for how heavy a trailer you can tow simply assumes serviceable brakes of the tow vehicle and serviceable brakes of the trailer. There is no mention of the realities of the trailer having to be raised in front to clear the tailgate which diminishes the trailers natural stability and diminishes the trailers braking effectiveness. Blocking up the trailer axle lessens lateral stability. There is no mention of the realities of the reduced braking effectiveness of the tow vehicle due to the weight shifting of the trailer. The automotive industry likely knows about these negative braking effects and the trailer industry should know about them. **Unfortunately for the consumer, what you do not know can hurt you.** So, The Automated Safety Hitch System does improve braking capacity by increasing it, improves braking effectiveness by increasing it and addresses controllability by increasing it.

The reason for calling our product The Automated Safety Hitch System instead of The Automated Safety Hitch is because it is so much more than a hitch. It is a towing system. The best towing system to more safely pull your trailers.

The truck industry likely knows that the longer the wheel base of the truck the more control you have of the trailer, yet how often do you see short bed trucks pulling trailers?

The truck industry likely is aware of the realities of jackknifing the trailer or making sharp turns and what happens when the trailer and truck cab collide, but dealers still sell short bed trucks to people ordering the heavy tow package. There are too many trailer dealers who sell trailers to customers telling them, “sure you can pull this trailer with your truck”, but since the customer did not ask, “can my truck stop this trailer?” the dealer does not mention it or maybe does not have the customers best interest at heart or the salesperson does not know. The customer likely discovers the less than desirable braking performance during their first trip.

We do not yet seem to have influence with neither the truck nor trailer manufacturers to right the present deficiencies but we do have the ability to make up for their deficiencies. The last attribute of our Safety Hitch System axle is its automatic steering ability. It was essential to have a steering axle to enable The Automated Safety Hitch System to effectively lengthen the wheel base of the tow vehicle for greater controllability and effectively increase maneuverability. Having a non-steering axle was not an option because you would then have scuffing of the tires and other more serious problems.

MP: Well it's clear to see that your Automated Safety Hitch System is packed with great features and benefits to help make the task of towing a trailer safe and easy for the consumer. From the auto alignment and auto connect features to the braking, controllability, turning and maneuvering features, which features, in your opinion, are the best attributes your Safety Hitch System has to offer the consumer?

JJ: In my opinion, the increased braking ability, the increased controllability, the increased maneuverability and having so few maintenance requirements are the best attributes The Automated Safety Hitch System has to offer.

It is wonderful to hear from very experienced drivers that, for the first time, they are relaxed and confident while pulling their trailers with the Automated Safety Hitch System. Most customers mention that the increased stopping ability is the greatest attribute. Remember, it is the extra wheel base length, the trailers front weight now riding on its own axle instead off the rear chassis of the tow vehicle and the Safety Hitch System automatically integrating the tow vehicle brakes, the Safety Hitch System brakes and the trailer brakes that enable you to stop in shorter distances and being less likely to jackknife. It is the most important feature for the attorneys who buy our product because they know that when you are pulling a trailer and you fail to stop before hitting something or someone, there is no excuse/defense. It becomes a very unhealthy and a very expensive accident.

Bob Zagami said it right. “Instead of what you can pull, it is what you can stop that is most important.”

Another money saving attribute is the Safety Hitch System's maneuverability. By enabling nearly 40 foot trailers to make the 90 degree turn staying within the single lane of the road they are turning on to, and have the trailer tires still missing the curb by approximately a foot saves money. Without the safety hitch system you usually have to swing out into the left lane to make a 90 degree right turn when pulling a 5th wheel or gooseneck trailer. It is surprising how few people know that, no matter how cautious you are when you swing out into the left lane, if someone in that left lane decides to squeeze by resulting in a side swiping incident, you get the ticket. This enhanced maneuverability can keep you from sideswiping incidents.

The Automated Safety Hitch System is as user friendly as your tow vehicle. You do not

have maintenance to do before each trip. By not having many maintenance items there is a much less chance of you forgetting to do something. The only maintenance items are keeping 80 pounds of pressure in the main tires when cool and periodically, easily service the battery and easily check the hydraulic pump fluid level. A lot of attention has been given to accessibility, maintainability and reliability. The retractable support tires are foam filled so they never need airing up. They will never be flat. The Dana 70 series axle has the same lubrication features as your tow vehicle axels. After the first few years, take the Automated Safety Hitch System with you when you take your vehicle to the lube rack.

MP: That's an incredible hitch system that is packed with great features and benefits for the consumer! From braking to controllability and maneuverability The Automated Safety Hitch System does it all. I really appreciate you explaining your product to our readers today.

Where can a person go to learn more about the Automated Safety Hitch System?

JJ: Thanks for having me today Mark. Our website offers several comprehensive videos illustrating all of the features we just discussed. Sometimes it's easier to watch how a product works rather than read about it. Folks can [visit our website to learn more](#).



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BEFORE



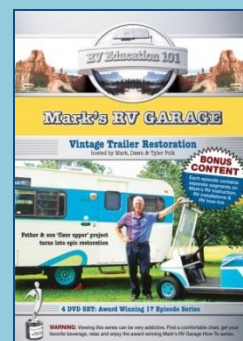
AFTER

I have always been a hands on type of guy. After being cooped up in an office for a while I need to get out and work on something. One winter day, I had cabin fever and decided I was going to produce an RV How-To TV series titled Mark's RV Garage.

Mark's RV Garage 17 episode award winning series is an entertaining and educational RV how-to series presented by RV Education 101. Host Mark Polk gives you an inside look into RV's, RV Products, RV product installations, RV upgrades, RV destinations, RV Trivia, & much more.

The highlight throughout the series is a vintage trailer restoration project. Mark and his son Tyler decide a "fixer upper" project would be fun, but soon discover their project trailer would require more than a few weekends to complete. Follow the epic 7 month-long fun educational and entertaining journey as Mark and Tyler demo the vintage trailer down to the frame and then rebuild to its former glory.

More Info



WARNING: Viewing this series can be very addictive. Find a comfortable chair, get your favorite beverage, relax and enjoy the award winning Mark's RV Garage RV How-To series:

The North American International Auto Show 2013

by Mark Polk

I thought you would enjoy some pictures from the 2013 NAIAS in Detroit Michigan.



The 2014 Chevy Silverado & GMC Sierra made their debut. Read my review of [the all-new Silverado](#).



2013 Chevy Suburban



2013 GMC Yukon Denali



2013 Dodge Ram 1500



Dodge Power Wagon



Dodge chassis with 6.7L Cummins



Ford F150 Limited



Jeep Grand Cherokee



Ford Super Duty F250



Toyota Tundra used in commercial towing the Space Shuttle. Just don't buy into the thought that this truck can tow anything!



Ford Raptor



Jeep Wrangler Dragon



Toyota Rock Warrior



Jeep Wrangler MOAB



VIA Electrified Truck



Jeep Concept Vehicle



I also had the opportunity to go to the General Motors Heritage Center where some very rare cars and trucks from GMs history are stored and preserved.



1926 Chevy 1-ton Series X with stake body



1928 Chevrolet Depot Hack



Chevrolet Suburban



Several more Suburbans



1956 GMC Suburban Pick Up



1977 GMC Motorhome



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- Devin T., Georgia



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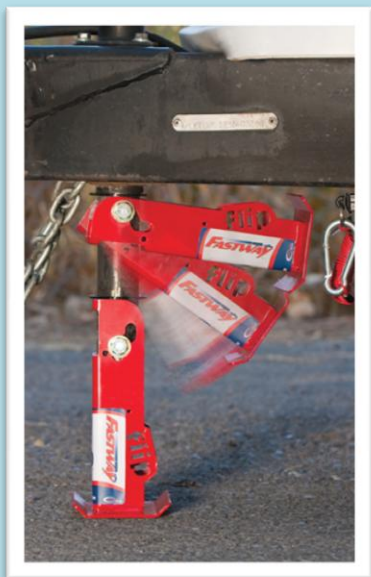
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RV Product Spotlight



Fastway Flip Jack Saves you Time & Trouble

Mark demonstrates how-to install a Fastway Automatic Flip Jack foot on your trailer or RV. The Flip Jack drops into place automatically when you extend your trailer jack, and tucks up out of the way automatically when you retract the trailer jack. This Fastway trailer product saves you time and trouble.

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Time for New Trailer Tires

ST Tires vs. LT Tires

Let me begin by saying when it comes to the type of tires to use on a travel trailer or 5th wheel trailer I think there is a lack of information and understanding on the topic. If you head over to the RV forums and type in “ST vs. LT tires” be prepared for a good deal of debate and varying opinions.

I can quite honestly say that regardless of how well this article explains the information lots of folks will continue to embrace their original opinions. It's one of those controversial subjects like gas vs. diesel. My goal with this article is to attempt to clear up some of the confusion on this topic so RV consumers can make an educated buying decision.

Before going any further let's take a look at what the ST and LT tire designations actually mean.

ST Tire Designation: ST stands for Special Trailer tire. ST tires are designed for use on trailer axle positions only. They are not designed for the load or traction requirements of a drive or steering axle. ST tires have strengthened sidewalls to prevent the tire from rolling under the rim in turns and when cornering. **All ST tires have a maximum speed rating of 65 mph.** ST tires feature materials and construction designed to meet the higher load requirements and

demands trailer towing presents.

Tim Fry, senior development engineer with Goodyear Tire & Rubber Company stated, *“The major difference is reflected in the polyester cords used in ST tires. These cords are bigger than they would be for a comparable P or LT tire. Typically, the steel wire also has a larger diameter or greater tensile strength to meet the additional load requirements. Because of the heavier construction for an equal volume of air space, an ST tire is designated to carry more load than a P or LT tire.”*

LT Tire Designation: LT stands for Light Truck tire. One definition at www.tiresafety.com defines an LT tire as any tire line or size which would typically be applied on a light truck (SUV, pickup, van). As such it could be an LT-metric tire for use on a one-ton truck or a P-metric ‘light truck’ size of a typical tire used on an SUV. Light trucks (pickups) and SUVs differ from standard passenger cars in their overall strength, load carrying capacity, center of gravity, and driveline complexity. For this reason, the tire options for light trucks and SUVs are often more complex than passenger cars. Factors such as load range, ply rating and sizes vary greatly from those of passenger car applications.

These are just definitions to provide a

basic understanding of what the ST and LT tire designations mean. Please hold back from any debate until you read the rest of the article. **Now let's dig a little deeper.**

If you do visit some of the RV forums, and/or research the topic on the internet you will quickly surmise much of the debate concerning ST vs. LT tires centers around some of the following issues and concerns:

- Chinese manufactured ST tires
- ST tire blowouts on trailers
- ST tire speed ratings
- ST tire life expectancy

At this point it probably makes sense to address each of these concerns separately.

Chinese Manufactured ST Tires:

I would like to begin by saying I do not like the issues U.S. manufacturers are confronted with when it comes to dealing with Chinese made goods. The Chinese continue to devalue their currency, resulting in unfair trade practices, and in my opinion our government lacks in taking measures necessary to prevent this from happening. Unfortunately RV manufacturers are extremely cost conscious and more often than not opt to use lesser expensive products in manufacturing units.

Several years ago it was discovered that numerous brands of Chinese manufactured LT and ST tires had

defects that resulted in premature tire failure. RV owners towing travel trailers and 5th wheel trailers were experiencing excessive tire blowouts and other tire failures long before the tire's life expectancy was reached.

It's too bad, but lots of reputable U.S. tire manufacturers are producing tires in China to lower costs and remain competitive in the marketplace. But, these U.S. brand tires are built with the same quality and specifications a tire manufactured in the U.S. is built to. The defective Chinese tire fiasco, from say 2005 to 2008, left a bad taste with RV owners and many resorted to replacing their ST tires with LT tires. Despite my feeling towards Chinese products, it seems that U.S. brand tires manufactured in China since 2010 have been fine. This may not however apply to any of cheap priced Chinese brand ST tires being exported to the U.S.

ST Tire Blowouts:

When I talk about ST tire blowouts I am not referring to what we just discussed, referencing the defective Chinese tires. In a nutshell most trailer tire blowouts are not a result of 'bad or inferior' tires, they are a result of one or more of the following conditions.

1) Overloaded Tires:

Every tire manufactured has a load rating based on the tire's inflation pressure. A tire's maximum load is the most weight the tire is designed to support at the inflated pressure.

ST tires have some of the highest load ratings. This is one of the reasons they are designated for use on trailers. Truck or automobile tires do not have to withstand the weight and stress that is put on trailer tires. The only way to know if a tire is overloaded is to weigh the trailer by individual wheel position. It is quite possible to weigh an axle and be within the axle weight rating, but when the tire positions on each axle end are weighed separately a tire rating can be overloaded.

2) Over & Under-Inflated Tires:

Another culprit for tire blowouts is over & under-inflated tires. Failure to maintain the correct tire pressure for the load can result in fast tread wear, uneven wear and poor handling which can all lead to tire failure. Remember, the load rating for a tire is only accurate if the tire is properly inflated for the load. Under-inflated tires cause extreme heat build-up that leads to tire failure. Tire manufacturers publish tire load and inflation tables with information on the correct tire inflation pressure for the load. A big reason tires fail is they are not properly inflated for the load. The appearance of the tire can look normal on the outside, but the internal damage is not visible. Tires with internal damage caused by under- inflation can fail catastrophically without warning. One thought is to inflate the tires to the maximum 'cold' pressure found on the tires sidewall if you don't know the exact load on the tires, or the exact weight of

the trailer. This should not however serve as an excuse to not weigh the trailer.

3) Improper Weight Distribution:

When a manufacturer builds an RV weight distribution is critical. The weight from front- to-back and side-to-side must be carefully considered to avoid having too much tongue weight, too little tongue weight and/or too much weight placed on the trailer's tires. The manufacturer did its job distributing the weight when the unit was built, now the RV owner must do their job by properly distributing any weight added to the trailer. Some tire overload conditions can be corrected by distributing the weight in the RV, but you still need to weigh the RV by individual wheel position to make sure there is not an overload condition.

ST Tire Speed Ratings: All ST tires are rated for a maximum speed of 65mph. When you travel at speeds higher than a tire is rated for it will eventually fail. The heat that builds up in the tire results in fatigue and tire failure.

Here is some additional information taken from a Goodyear Tire & Rubber Company Product Service Bulletin, PSB #2011-13.

This bulletin provides important information to help your customers obtain the best performance from "Special Trailer" tires. Please review

the following important points with your trailer tire customers.

Special Trailer (“ST”) Tires:

Goodyear Marathon trailer tires are widely used in a variety of towable trailer applications and are designed and branded as “ST” (Special Trailer) tires. Industry standards dictate that tires with the ST designation are speed rated at 65 MPH (104 km/h) under normal inflation and load conditions. Based on these industry standards, if tires with the ST designation are used at speeds between 66 and 75 mph (106 km/h and 121 km/h), it is necessary to increase the cold inflation pressure by 10 psi (69 kPa) above the recommended pressure for the rated maximum load.

- Increasing the inflation pressure by 10 psi (69 kPa) does not provide any additional load carrying capacity.
- Do not exceed the maximum pressure for the wheel.
- If the maximum pressure for the wheel prohibits the increase of air pressure, then the maximum speed must be restricted to 65 mph (104 km/h).
- The cold inflation pressure must not exceed 10 psi (69 kPa) beyond the inflation specified for the maximum load of the tire.

ST Tire Life Expectancy:

It is quite possible for a tire to wear from the inside out. What this means is you cannot see the tire’s internal wear

and fatigue, and without warning you have a blowout when you least expect it. I mentioned a moment ago that under-inflated tires cause excessive heat resulting in tire failure. The same is true of an over-inflated tire when it comes in contact with pot holes, curbs and other common obstacles found on and alongside the highway. It is totally unrealistic for RV owners to expect ST trailer tires to last as long as P or LT tires do. ST tires are subjected to more weight, more sidewall stress and more user related tire issues, so it’s only natural they won’t perform as long as automobile tires.

If you think about it, with the exception of defective tires, all of these factors that increase the chance of tire blowouts are within the RV owner’s control. If you take the steps required to avoid these tire related problems it is quite likely you will not experience abnormal tire blowouts on your trailer.

LT vs. ST Tires:

I mentioned earlier that lots of trailer owners made the decision to switch from ST tires to LT tires for use on their travel trailer or 5th wheel trailer. Two popular and well built LT tires that come up in discussions as replacement tires for ST tires are Goodyear G614 235/85R16 and Michelin XPS RIB LT235/85R16E tires. If you make the decision to switch to LT tires I caution you to make absolutely sure the tire you choose meets the application criteria required for use on your travel trailer or 5th wheel trailer.

Light Truck tires are not always the same size, and do not always have the same load carrying capacity as ST tires. Depending on your trailer's axle weight rating the tire load capacity might be 3420# @ 80 psi for example. The Michelin XPS RIB LT235/85R16E tire load capacity is 3,042# @ 80 psi. If you switch to LT tires for trailer applications the tire inflation pressure and/or the size of the tires would need to be capable of matching the load capacities of the trailer. If the size of the tire is increased to compensate for load capacities there needs to be sufficient clearance for the larger tires. Cost can be prohibitive too when you not only consider purchasing new tires but larger wheels for the tires to go on.

There are other considerations as well. One is that ST tires are designed for a limited amount of rolling resistance, whereas LT tire construction must address the tire's traction attributes which can increase the rolling resistance. Tires have other ratings too, like Mud & Snow, Summer Tire, All Season etc. For example, Michelin XPS RIB LT235/85R16E tires are rated as highway summer tires, meaning they won't perform as well in colder winter climates.

It is my general consensus that brand name ST tires matched for the application and properly inflated, maintained and not overloaded are the right tire for the job.

I personally only use Michelin tires on my automobiles and motorhome, but the tires are designed for the application. My point is if you are thinking about making the switch from ST to LT tires for use on your trailer don't get caught up in marketing propaganda; look at the engineering and tire application facts before spending your money on the wrong tire for the job. ~ **RV 101**

Want to learn more about RV Tire Care & Maintenance? Check out this [19 minute online e-course](#) for only \$6.99

This online e-course is packed with information on caring for and maintaining your RV tires. Video host Mark Polk explains tire inflation, tire inspection, overloading, tire maintenance, how to decipher the tire sidewall and much more in this informative [online RV tire e-course](#).

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RV Videos on Demand Tip:

Replacing one tire on a motorized RV, due to lack of routine maintenance, can cost you more than **30 times** the price of this e-course.

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The Cooking Ladies

This is our delicious variation of regular French toast. Great for at home or in a campground. Can be cooked on a stovetop or over a campfire.

Phyllis Hinz and Lamont Mackay

BACON & MOZZARELLA STUFFED FRENCH TOAST

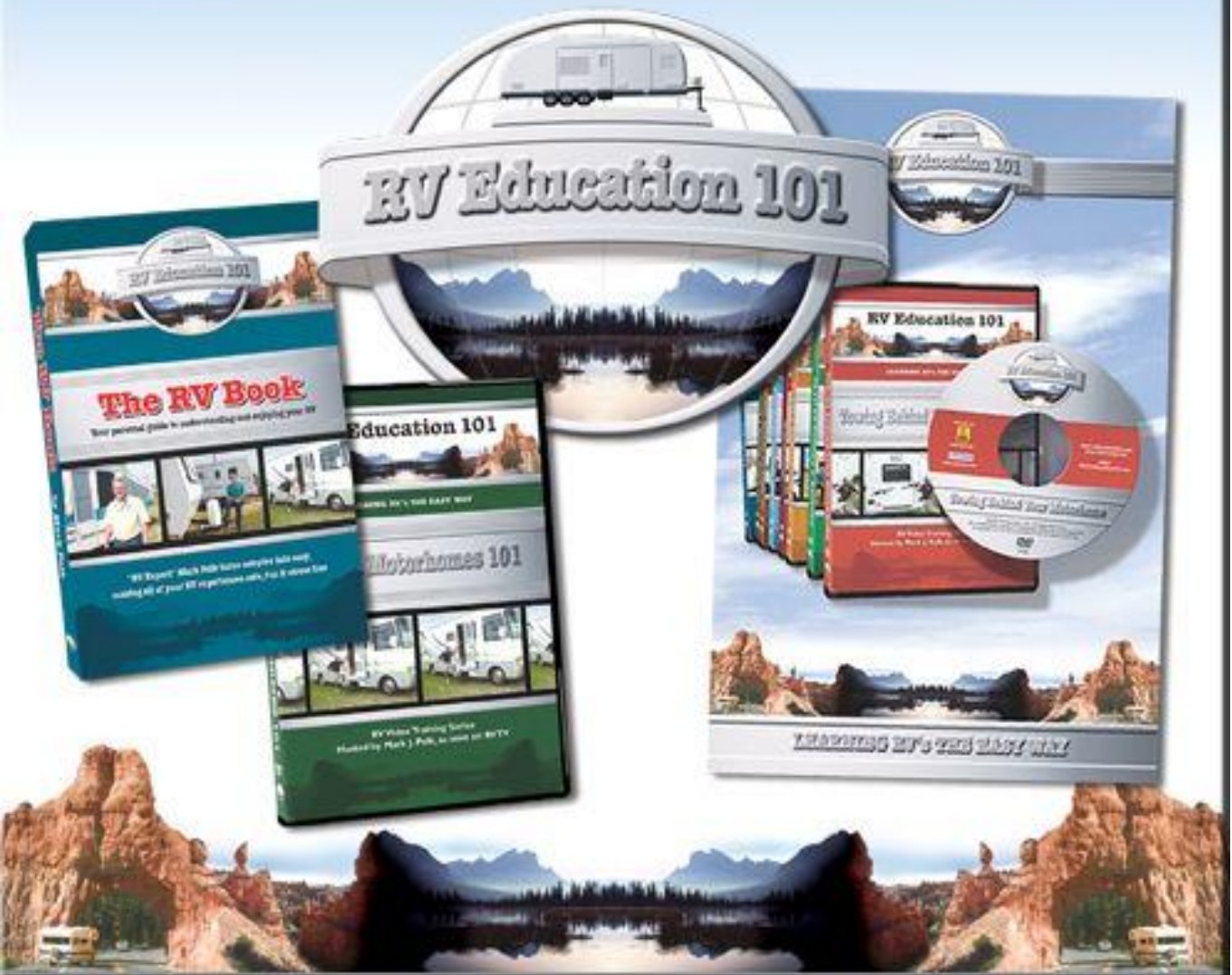
(Makes 2 servings)

½ loaf unsliced Italian or French bread
4 slices cooked bacon, cut in half
1 ½ oz (45 g) low-fat mozzarella cheese, thinly sliced
2 large eggs
½ cup (125 ml) orange juice
1 tbsp (15 ml) grated orange peel, chopped fine
2 tbsps (30 ml) margarine
maple syrup

1. Mark ½ -inch and 1-inch measurements on the loaf of bread. At the ½ -inch mark slice the bread not quite all the way through. At the 1-inch mark slice the bread all the way through. This creates pockets in the middle of the 1-inch thick slices of bread.
2. Stuff each pocket with a layer of half the bacon and half the mozzarella cheese. Press the bread firmly together. Be sure that the bacon and cheese are tucked inside.
3. Whisk the eggs, orange juice, and chopped orange peel in a bowl.
4. Melt the margarine in a non-stick frying pan over medium heat.
5. While the margarine melts, place the stuffed bread slices in the egg mixture and thoroughly coat the bread on both sides.
6. Fry the bread slices on each side until they are golden brown and no longer moist.
7. Serve the stuffed French toast with maple syrup.

The Cooking Ladies, Phyllis Hinz and Lamont Mackay, are freelance writers, restaurant consultants, cookbook authors, event speakers, and RVers. Please take a minute to visit their website: www.thecookingladies.com

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Our goal with RV Consumer E-Magazine is to provide you with helpful information to make all of your RV experiences more enjoyable. I left my position as an RV Sales and F&I manager in 2000 to start RV Education 101.

We produce RV educational videos & DVDs and publish books and e-books on how to safely & properly use and maintain your RV. The reason I left my job was because of my concern about the lack of educational and safety awareness material available to the RV consumer, in other words you.

My wife Dawn left her position in RV sales to help start the company, and is our Sales and Marketing Director. We currently have a 35-foot Class A motor home. We have two boys, Tyler 16 and Josh 22, both avid RVers and three dogs, Roxie, Gracie and Buck. If you would like to learn more about us and about RV Education 101 please visit www.rveducation101.com

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