

Oct-Nov 2010

[www.wasatchbmwcca.org](http://www.wasatchbmwcca.org)

Volume 11, Issue #3

BMW Car Club  
of America  
Wasatch Chapter



## PRESIDENT'S MESSAGE

I am in Pittsburgh, Pa as I write this message and I have to say that autumn in the northeast is nothing short of stunning! The colors are truly a wonder to behold. However, I will be back in Salt Lake soon and I hear there may be snow! Time to winterize those Bimmers!

Well, late summer and fall have been very eventful for our chapter. I am glad to see many people turned out for the Car Control Clinic. It was a very successful event and I hope those who attended learned a thing or two and had fun at the same time! Also, I want to thank everyone who made this event so special, especially Dan Ernst, James and

Sara Russell, Tom & Gwen, Gregg Bambo, Robert Franke, Ray Carrier, Dave Cianto and many more whose names are too numerous to mention here. We also have had a fall drive, Wide Open Wednesdays at MMP and of course Oktoberfest. We hope to see even more of you at these events next year.

Upcoming events include our annual Holiday Party and our tech session which will be held at Wrench-It. They are offering 20 bays where we will do Inspection 1 and 2 as well as other projects on our cars. So space is not all that limited! See our website for details. Other happenings would be our website, which looks spectacular! Check it out if you haven't done so yet. Also, the number of peo-

*Cont'd on page 3*

### EVENTS

- Nov 6 - Tech Session - The Wrench-It Center
- Dec 5 - Holiday Party at Lugano's Restaurant
- Stay tuned to our website for up to date information and announcements

*Follow us on Facebook & Twitter*

## WHAT DO SWAY BARS DO?

*Here's a write up taken from the VWVortex that explains sway bar function quite splendidly. All credits go to Mr. Ian ("daemon42" on VWVortex), who had done one of the nicest write-ups I have ever read about sway bars. Here it is:*

Normally, without a sway bar when the car corners the weight of the chassis shifts toward the outside of the turn compressing the springs on that side. The springs on the inside generally extend a little, or do nothing. Relative to the chassis itself, it appears that the outside suspension compresses and the inside doesn't.

A sway bar couples the suspensions on each side to each other, \*AND\* relative to the chassis. If you could put the car up on a lift and actually compress the suspension on one side by hand, then a sway bar makes the compression of one side also try to compress the suspension on the other. Okay... it's still not really obvious why that's useful. So I'll say the same thing a different way.

A sway bar effectively increases the spring rate on whichever side is compressed the MOST. If the sway bar were absolutely solid with no

*Cont'd on page 5*





*Go west young man !!*

Car Control Clinic  
October 10, 2010  
Maverick Center



*Marie smiled all day long!*







**Dennis Spicer • 801-320-0941**  
**364 West 800 South • Salt Lake City, UT 84101**

**New Members for Sept-Oct 2010**

- Carol Burke*
- Mary England*
- Mark Hutchins*
- Robert Query*
- Sam Robinson*
- Clive Bridgewater*
- Scott Hallenberg*
- Douglas Turnquist*
- Tim York*

**Welcome to the Wasatch Chapter !!**

*Looking For Some Help*

We are searching for a volunteer newsletter editor who can meet deadlines. Is there anyone out there who is willing to put together our Switchback, which is about 4 issues per year?

*Please contact Rich Getty at 801-330-2779 or  
 gettybmw@yahoo.com.*

*Cont'd from page 1—"Presidents Letter"*

ple on our Facebook Page has nearly doubled in 3 months! We have pictures, events and many links on this site, so I encourage you to check that out too!

Finally, I want to thank all of you for your support in making this such a fun chapter! Keep sending us your ideas and feedback. Hope to see you at our next event!

Yours truly,  
**Rich Getty**

**BOARD MEMBERS**

- President – Rich Getty**  
*gettybmw@yahoo.com - 801-330-2779*
- Vice President – Greg Mambo**  
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- Events Coordinator—Sara Russell**  
*sarajaynem@hotmail.com*
- Webmaster – open**
- Driving Events Chair – open**

**Newsletter Submissions**

We always welcome your stories, suggestions, technical tips, photos, questions, or comments, etc., which would be of interest to your fellow club members. All reasonable submissions are considered and are needed. The editor reserves the right to edit for length, quality and good taste. Please include your contact information so I may contact you if significant editing is necessary. Please send your "stuff" to the Editor through email, phone or the Wasatch Chapter address. The Switchback is published quarterly. Deadline for submissions is the 25<sup>th</sup> day of the preceding month.

**How to Join BMW-CCA**

Call 1-800-878-9292 for credit card orders. Membership costs \$35/year and includes a subscription to the Roundel and Switchback as well as all other Club Benefits. You may add another person in your household for \$5 so they can enjoy full Club benefits as well, except they won't get their own Roundel. Send your change of address to BMW CCA, Inc. 640 South Main St, Suite 201, Greenville, SC 29601 or fax 864-250-0038, or [www.bmwcca.org](http://www.bmwcca.org). (ph-864-250-0022).

**BMW CCA Benefits**

Discounts on parts and supplies, free advertising in the Roundel and BMW CCA website, library and video services, help from technical and maintenance experts, a Value Information Coordinator to help with insurance claims, purchases or sale of your BMW, Ombudsmen to assist you with BMW dealers and suppliers, Special Interest Groups listed in the Roundel.

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# EVENTS CALENDAR



- **Saturday, November 6 - Tech Session - The Wrench-It Center—Repair & Maintenance** - *Don't miss this chance to learn more about your Bimmer. We will be taking club members through the BMW Inspection 1 and 2. We will have 20 available bays for you to work on your own car. So come on out and join us!*
- **Tuesday, November 9 — Club Board Meeting** — *Time and place to be announced.*
- **Sunday, December 5 - Holiday Party - Lugano's Restaurant - 6:00 pm.** *More details available soon.*
- **Tuesday, December 14 — Club Board Meeting** — *Time and place to be announced.*
- *"The Road Home" Clothing Drive — through 10/31/10 — Donations (new & gently used) being accepted at BMW of Murray Service Counter. Top needs include: Pillows, Blankets, Bath size towels, Hats, Shoes & boots, Clothing, Gloves, Socks, Underwear (New) and Coats.*

***For updated information and cool BMW stuff, check out [wasatchbmwcca.org](http://wasatchbmwcca.org)***

***You can also follow all Club Events on Facebook and Twitter***

## CLASSIFIEDS

- This is one of the nicest vintage 735i's anywhere. This car drives like a dream. I have spent \$4,000 dollars completely rebuilding the front end and tuning the motor. It drives like it were new. If you are looking for a classic at a great price. It has very low miles - 79,000. \$10,900 OBO. Must sell! John 801.898.7600
- 2002 540iT Sport Wagon, Blue Water, Black Leather, Nav, BMW phone, 74.5k miles, \$14,000. Fantastic road car. Very good condition. 25 mpg freeway. Purchased from original owner in Newport Beach, CA. You'll love this car. 801-520-9941 Lenny
- 1995 540i — Dark Green, tan interior, automatic, 225K miles. Conforti chip, tranny needs work. 18" Bayern wheels, also have original rims with snow tires mounted. \$2300 obo. Motivated seller. Dave Cianto —801-750-2973.



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Cont'd from page 1—"Wiper Blades"

twist so there's a 100% coupling between each side, then an attempt to compress one spring actually becomes an attempt to compress both springs. It doubles the spring rate. If the bar has some twist, then it may only increase the spring rate by say 50% on whichever side is compressed the most.

So you're driving down the road and you go over a bump that goes across the entire lane. The sway bar does nothing. Both sides compress normally. You go around a corner and the chassis starts to lean and compress the outside suspension and now it's as though you have a bigger spring out there, so the car remains more level. That's the good part. Here's the bad part. You hit a bump with only one side, and it behaves the same way, as though you have a stiffer spring, so you feel uneven bumps more. You feel it crossing anything diagonally as well, such as coming into or out of a parking lot or driveway curb.

That's all the simple "How does a sway bar work?" part. The real tricky one is... "What does a sway bar do?"

1. We know it keeps the car more level. So what? Limiting the lean of the body is good because it



means that when you take a quick set into a turn, that the body isn't still moving sideways after the tires are at their limits. Otherwise you turn in quickly, the tires grip, then the body finally finishes leaning, when it stops, the tires lose grip. This is especially noticeable in most cars in the slalom where you lean one way then the other and so forth.

2. It limits camber changes. The camber is the angle that the tire leans in or out at the top relative to the chassis of the car. The camber directly impacts the angle at which the tire cross section meets the road and thus controls lateral grip. As the suspension compresses the camber angle generally changes relative to the chassis. With a normal McPherson strut that hasn't been lowered, the camber goes from positive to more negative as the lower A arm swings out straight, and then back to positive as it swings up. That swing up into positive camber is BAD. At that point the chassis is already leaned over so the tire may be starting to roll onto its sidewall. Changing the camber even more positive is just nasty. A big sway bar will prevent the body roll in the first place, and prevent the suspension compression on the outside which causes the positive camber change relative to the chassis.

3. Transfer lateral grip from one end of the car to the other. This one is a real trick to understand, but racers exploit this EVERY time they go on the track. Their spring rates are often so high, the cars so low, and their suspension travel so little, that the whole camber and body lean problem is already a non-issue. The car doesn't lean much with 500 lb springs. They use their bars to change the balance of the car. Here are the simple rules first. A big bar on the front increases rear lateral and motive traction. A big bar on the rear increases front lateral and motive



traction. The applications: If the car is understeering (pushing), decrease front bar size or increase rear bar size. This increases front lateral grip and decreases rear lateral grip giving the car a more neutral to oversteer feel. Reverse the process for too much oversteer. I mentioned motive grip. That's the neat one. Let's say your RWD car is handling okay. But every time you get into a corner hard and get on the gas the rear inside tire breaks loose and spins. You can't accelerate out of the turn. You can go around the turn quite quickly, but you can't accelerate out, and the guy with traction hooks up and passes you halfway down the next straight because he came out of the turn going 3-4mph faster. The reason you're losing the traction at the inside rear is usually because the rear bar is too big. As the rear outside suspension compresses, it's actually causing the rear inside suspension to compress as well (because the bar couples the sides... remember where we started). That decreases the weight on the rear inside tire. Decrease the size of the rear bar. That decouples the sides a bit, let's the inside tire press down on the road more, and thus not spin when you're on the gas.

Here's where it gets really tricky: If decreasing the size of the rear bar doesn't help enough, the next thing you do is increase the size of the front bar. When the outside front compresses in a corner, it causes the inside front to compress and may actually lift that tire completely off the ground. The car is now sitting on 3 tires and guess where the weight that was on the inside front goes? Outside front? Some of it. The rest goes to the inside rear where we need more grip. The total weight of the car hasn't changed. It's just been redistributed, and a sway bar at one end, actually transferred weight to the other end of the car. The photo below shows it in action



on a RWD car. See the inside front tire off the ground? That translates into more motive grip at the rear, and thus more acceleration. Believe me, that car rockets out of corners.

All of this trickery applies to a FWD car too. Since the front tires share all of the motive AND most of lateral traction (because most of the weight is in front), all the things that happen with big bars at either end are even more extreme. A big front bar stabilizes the body lean more but also creates a lot more understeer, and may make the inside front tire spin madly under power in a corner. A big rear bar can't give you back much lateral grip up front, but it can give you back some motive traction. Basically letting you accelerate out of the turn, even when the front end is sliding pretty badly. Here's a big rear bar in action on a FWD car.



So that's it. How they work and what they do.

*Scott's Comments: The write-up above, although taken from a Forum dominated by FWD cars, explains more about applying sway bars to RWD cars. In FWD cars, the key is to reduce understeer and increase motive traction. Many popular suspension kits come with huge front AND rear sway bars. The car stays level and the ride is tight. Turn-in, or the car's ability to resist understeer, is improved. But the inside front wheel will still spin while accelerating out of a turn unless you've invested big bucks into a torque-biasing differential. Leaving the front bar stock and increasing only the rear bar allows the front wheels to articulate normally. As written above, the weight that's not sitting on the suspended inside rear wheel is now being applied to the inside front wheel, which is not being unloaded by a huge front bar and is now able to extend to the ground for more traction. Make sense?*





What? I can't text and drive? I'm outta here !



Stoked and ready for the next run!

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