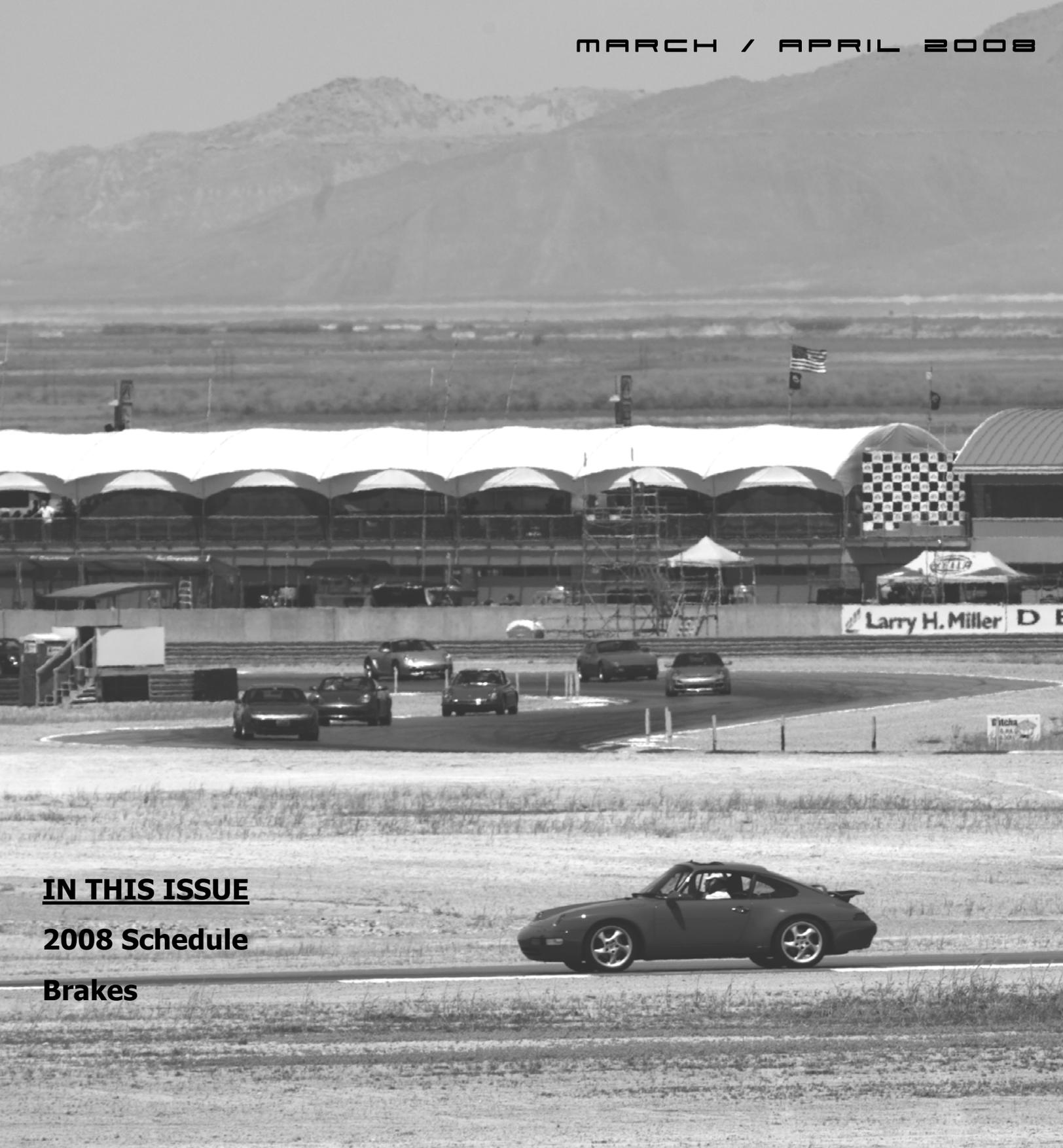


THE INTERMOUNTAIN REGION
PORSCHE CLUB OF AMERICA

ZEITUNG

MARCH / APRIL 2008



IN THIS ISSUE

2008 Schedule

Brakes



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THE DRIVERS SEAT

As Spring fast approaches, a new year of activities is starting for the Intermountain Region. Any advent of a New Year provides a good opportunity for resolutions and change. As I take over the editor responsibility of the Zeitung, I am looking toward that goal (Zeitung is German for “Newspaper” for those of you who were curious). The Zeitung has not been a regular sight in your mailbox, and that will change. Now that the first issue is out, we’ve got the ball rolling. The region has a goal of getting the newsletter out every two months – six times this year.

While I WILL produce something bi-monthly, the quality of the newsletter will be up to you. I can write a newsletter by myself if need be, but the title is *Zeitung*, not *Stu’s Mindless Drivel*. You know what they say, “Opinions are like armpits, everybody has them, and most of them stink!” If you don’t want my stinky armpits in your mailbox, then let me hear from you! It is YOUR newsletter.

Having said that, I am excited to turn this newsletter into a reflection of the region – a fantastic group of people who have a lot of fun with their cars!

As I take over as the editor, the biggest questions I have are “Who are we? (Who am I editing this magazine for?)” and “What do we do as a region?” I’ve attempted to find the answer to these questions, and have included them in this issue.

Remember, this is YOUR newsletter. Any input you’d like to make will be appreciated. Pictures, articles, letters to the editor, finger paintings, can all be sent to me for inclusion in the next Zeitung.

Stu Hamilton
Newsletter Editor

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INTERMOUNTAIN REGION

ZEITUNG

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EDITORIAL POLICY

The purpose of the Zeitung is to provide the paid membership with information, articles of interest, and editorials. Any member wishing to submit an article, editorial or rebuttal, is welcome to do so, keeping in mind that all articles will be edited and or refused by the Zeitung editor or an IRPCA officer(s), if it's content is vulgar, or of questionable material. Readers must keep in mind that articles submitted by member's are opinion's only relating to the integrity of the individual not the club as a whole!



PRESIDENT'S MESSAGE

A new year is among us. By now we have all gotten used to writing 2008 whenever we jot down a date and we hope that Spring is just around the corner. I have some big shoes to fill as the new IRPCA President and promise to do my best in representing the wants and needs of our Club.

The board met earlier this month to plan and discuss events happening this year. Our Club events calendar is quickly filling up with autocrosses, Drivers Education days, tours and lots of awesome social events.

Colette Read is working hard to come up with fun-filled social events for each and every month of the year. I advise all of you to pay close attention to our website and Google calendar. Colette is planning something fun for every taste. Please support her and attend as many events as you can.

Our Tourmaster, Will Crowther has planned 5 tours this year. With more to be announced as the season matures. There will be a couple of 3 day tours that promise to let you explore beautiful landscapes and amazing vistas. Not to mention to get your Porsche out on the open road to be admired by all.

Our Autocross chair has been busy scheduling autocross venues that promise to be challenging and very exciting. We hope all of those of you who missed some of the autocross events last year will be able to come out and teach us how it is done.

Our DE committee has planned 6 exciting days of High Performance Driver Education (DE) at the award winning Miller Motorsports Park. Please mark your calendars and come out to the track. You are really missing out if you have never taken the time to come see what we do at the track.

As you can see, we have planned lots of events for 2008. These events are the result of hard work put in from our dedicated region members. Please find something that interests you and come out and join us. I am looking forward to meeting all of you and to make this year an IRPCA year to remember.

Sincerely,

Otto Silva
IRPCA President

MOAB DRIVING TOUR

APRIL 11, 12, 13 – FRIDAY, SATURDAY, SUNDAY

MEET 11:30 Thanksgiving Point (Highland / Alpine exit off I-15, right then left, south, on Thanksgiving Way to *Rendezvous*)

LEAVE Thanksgiving Point 12:00, Arrive Moab Hotel ~4:30

TOUR CENTRAL: Best Western Canyonlands Inn - \$149.99 (800) 649-5191

SOME OTHER HOTELS in Moab (prices per night - add taxes)

Best Western Greenwell Inn - \$149.00 2 queens or 1 king (800) 780-7234

Ramada Inn - \$124.99 2 queens / \$129.99 1 king (800) 272-6232

La Quinta Inn - \$109.00 2 queens / \$114.00 1 king (800) 531-5900

ROUTE TO MOAB

(~220 MILES or 3.3 hours Plus Stops in Price and / or Green River)

From ***Rendezvous*** at Thanksgiving Point (beneath dinosaur on the bldg)

Take Right ramp onto **I-15 S** toward **LAS VEGAS/CHEYENNE** - go ~ **30** mi

Take exit #258/PRICE/MANTI onto **US-6** - go **128.1** mi

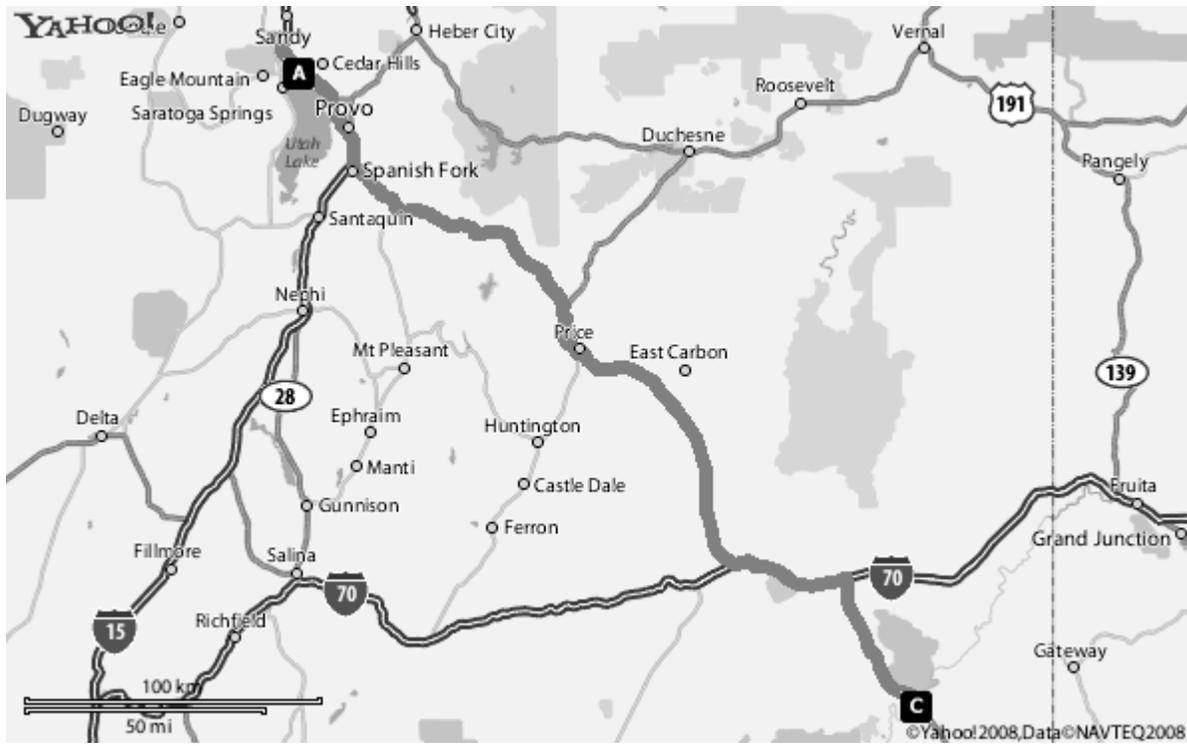
Take ramp onto **I-70 E** - go **23.7** mi

Take exit #182/CRESCENT JCT./MOAB - go **0.4** mi

Turn Right on DINOSAUR DIAMOND PREHISTORIC HWY(US-191) - go **29.0** mi

Continue to follow **US-191** - go **2.7** mi

Turn Right on **W 200 S** - go **0.1** mi



DINNER Friday 6:30 Red Cliffs Lodge & Restaurant, 14 m up Highway 128 – along the Colorado River (Rooms \$199.95 2 queens or 1 king)

DRIVE through Arches NP Saturday, leaves 8:30 from Tour Central

WHO ARE WE?

BY STU HAMILTON

The Porsche Club of America was started in September, 1955, by Bill Scholar. His desire to meet with other Porsche owners to discuss this unique automobile led to the formation of the club. The first meeting, in Washington, DC, had twelve attendees. Starting from Bill and his 1953 356 Coupe, the club grew rapidly. By January, 1956, there were 64 Charter members. By the fall of 1957 there were 550 members and 21 regions. Today, there are over 97,000 members in 139 regions.

The Intermountain Region is a small part of that club. However, it is an important part- YOUR part!

Geographically, our region encompasses all of Utah and the Southwest corner of Wyoming. Numbers wise, our membership almost 300 strong. All but 9 live in Utah. One is in Wyoming. Eight live outside our region – three in Colorado, one in Idaho, one in Oklahoma, one in Washington, one in Alaska, and one overseas.

Between the 277 of us, we own 334 Porsches. We own 111 of the “modern-era” cars – 52 water-cooled 911’s, 44 Boxsters, 7 Cayennes, and 8 Caymans. Our Porsches include 37 of the older water-cooled cars – 30 944’s, 3 924’s, and 4

928’s. A traditional air-cooled engine is the power plant inside 186 cars -19 are 356’s, there are 13 912’s, 19 are 914’s and classic 911’s number 135.

The 911 is the most popular model – as one would expect from the car that has enjoyed a 40 year production run. The total of all 911 variants owned by our club is 187. You might guess the newer cars are more common in our club - and this is the case. The water-cooled 2002 is the most numerous, with 13 owned by our members. However, it may surprise many to know that the next most popular model-year is the 1979, with 11 ’79 911SC’s in our club. A close third is the air-cooled 1996 Carrera, numbering 10 cars. Eleven of our 911’s benefit from 4 wheel drive.

We are a club run by volunteers. We are led by our President, Otto Silva. Hopefully, you read his message in this issue – if not, go back and do it now... go on - I’ll wait. Otto is assisted by a several other volunteers that make the club run smoothly, and help to organize the individual activities. These are the people that really make this club what it is. They are the ones that deserve our thanks - and, when we can, help.

PORSCHE RS SPYDER GOES TO EUROPE

The Porsche RS Spyder entered the racing scene in the fall of 2005. The next year, two cars were campaigned in the American LeMans Series. Under the leadership of Roger Penske, the RS Spyders dominated the LMP2 class. Further improvements were made before the 2007 season. Despite an increased threat from both Acura, and the Dyson camp (Porsche RS Spyder), Penske prevailed once again. With fantastic drivers and shrewd strategy, they did so well that they almost took overall honors away from the larger and more powerful Audi R10 diesels.

For 2008, Porsche takes the battle back to their home turf. On March 4, two European teams - Team Essex (Denmark), and Van Merksteijn Motorsport (Netherlands) - had their first test in the RS Spyder. They face stiff competition throughout the European LeMans Series (LMS). The LMS will be run in 5 races of 1000KM (625 miles) each.



The 2008 European LeMans RS Spyder

WHAT DO WE DO?

BY STU HAMILTON

Our club is blessed by some of the best facilities and terrain for the car enthusiast. The Intermountain Region organizes a variety of activities to help you enjoy your car.

Several **Driving Tours** are organized each year. These give you a chance to meet with other owners and take a nice drive on our scenic roads. Some are daytrips with a stop for lunch, while others are multi-day trips with overnight stops. Stops are made for cultural events (Springfield Art Museum last year), and to photograph our cars at scenic points. We seldom have “single point” restaurants or hotels you must stay in, although a “Tour Central” hotels and/or restaurants will be designated to provide a gathering place. There is no charge for tours, and you are welcome to join or leave a Tour in progress whenever you wish. These trips are a great excuse to get out and drive those scenic roads that we never seem to find time to enjoy.

If you want to explore the potential of you car, a driving tour isn't the best place to do it. Fortunately, the Porsche Club offers a couple ways to do that safely.

The region holds **Autocross** events during the warmer months. These are held in large parking lots (such as fairgrounds, or the E Center). They involve navigating a course laid out in the parking lot with traffic cones. Cars are run one at a time, or spaced well apart for safety. The events are timed, with each driver getting 5-6 runs. Speeds are generally low, with emphasis on getting through the tight course quickly. The design of the course is always done with safety in mind – generally, the biggest danger to you have is hitting one of the

cones, leaving your car unharmed, but your ego bruised. Helmets are required, but loaners are available at the event. Participation in the autocross is open to anybody with a driver's license.

Miller Motorsport Park also provides an excellent opportunity to learn the potential of your car. The Porsche Club has several **Drivers Education** events there each year. Events are run on the same track in Tooele that professional race series (American LeMans, Grand Am Racing, etc.) use. We either rent half the track (providing a course about 2 ½ miles long with 10-11 turns), or the full 4.8 mile course. The Drivers Education events are a fun and legal way to explore the high speed dynamics that make Porsches legendary. Although several cars will be on the track, the event is very safe, with passing only in designated areas (never in corners), and with agreement between both drivers. Each driver will be given about 2 hours of track time each day. Automobile helmets (not Motorcycle) are required, as are long sleeve pants and shirts and closed shoes. Loaner helmets are generally not available, so you will want either to buy one, or arrange to borrow one for the day.

If you don't feel like driving, the club still has a lot to offer. The region has a great **Social Calendar**. Events are planned almost every month. The social schedule started in January, with a “Friday Night Date Night”. Our traditional “Opening Social” at Lambs Grill was in February. Upcoming events include Date Nights to restaurants, plays, and other activities. Additionally, there are summer, fall, and Christmas activities planned.

DAVID TO BUY GOLIATH

In March, Porsche's Supervisory board gave the go-ahead to acquire controlling interest in auto-making giant Volkswagen. Since 2005, Porsche has slowly increased their stake in Volkswagen—not only as an investment, but as a way to stabilize their relationship. Porsche initially acquired 19% of the company. For years, a law on the books prohibited any company from owning a larger stake than the 20% of Volkswagen owned by Lower Saxony (the home of Volkswagen). Last year, the European Commission declared the “Volkswagen Rule” illegal, and opened the door for Porsche to acquire a bigger share. Through stock options and astute investment, Porsche built its share to 31%.

Porsche Automobil Holding SE, the owner of Porsche, has approval to increase its share another 20%, giving it controlling interest in the Volkswagen Auto Group. Based on a recent stock quote for Volkswagen, at 150 Euros/share, a 20% stake will set Porsche back almost 10 Billion Euro.

With first-half fiscal year 2008 sales at \$5.3 billion, and pretax profit over the same six month period of \$2.4 billion, Porsche can certainly afford its ambitions.

It seems fitting that history has come full-circle. Ferdinand Porsche, the company's namesake, got his start designing the “people's car” for Adolf Hitler in Pre-war Germany. That car later became the Volkswagen Beetle. Ever since, the two company's have been intertwined. Not only did many early cars share parts, but many cars over the years were joint ventures between Porsche and Volkswagen (including the current Cayenne/Toureg).

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WEST VALLEY

3282 So. 5600 W.
967-1104



HOW CAN YOU BECOME MORE INVOLVED?

BY STU HAMILTON

While it would be nice to have more volunteers to help things run smoother, that isn't what I'm talking about. We can all make the Intermountain Region a better club just by participating more.

I think the key to better participation is better communication of information. Hopefully, you read my message at the beginning of this issue – if not, go back and do it now... go on - I'll wait. My goal is to get the Zeitung out on a regular basis. If I can do that, everyone will have a reliable source of information about the club. Look to the Zeitung for information on upcoming events.

However, the bimonthly nature of the Zeitung means that it may not contain the most recent information. Our region's website is a good place to look for information. Go to <http://int.pca.org>. Roger Helman is our new webmaster. He will be doing his best to keep the website up to date. Go to the website, and you may find that an autocross listed as TBA has been scheduled, a driving tour has been moved to a different date, or a social has been added. The website also lists contacts for the committee chairs. If you have any questions or comments about different activities that the club sponsors, they are usually a good place to start.

For the most up to date information, I recommend joining the region's Google Group. The moderators do a great job of keeping spam out of our group. However, once spring rolls around, you can expect a handful of emails each day. Many of them will be important news – a driving tour cancelled for weather, the start time of an autocross changed, the entry procedures to get onto the track.... You will also get emails that pertain to the group, but may or may not be important to you – advice about a car problem, parts for sale, mechanic recommendations....

To look at our Google group, go to <http://groups.google.com/> and search for IRPCA, or go to the region's website (listed above), and follow the forum link. Either way, you can review the most recent discussions in the group. If you like what you see, you can have any future posts automatically sent to you as an email. To do this, just follow the "Join this Group" link on the right. You may have to create a Google account to join, but that is a quick and easy process. As of the New Year, there were 154 members in the group – just over half of the 277 region members. If you aren't a group member, consider signing up – that way we can get you the information you need to start participating!!!

See you out there!

IRPCA Date Night at The Salt Lake Acting Company

168 West 500 North

Friday, August 15th 8:00 pm

Cost is \$44 per person

Saturday's Voyeur is the wildly popular and irreverent musical satire about local culture and politics. It is newly written each year and is always fresh and fun. This is a cabaret show: you are welcome to bring your own food & tasty beverage.

The club has purchased a very limited number of tickets for this event and they are on a first come basis, so send your RSVP today!

RSVP w/payment & contact information to: IRPCA, 5577 Walden Glen Dr, Murray UT 84123 ??? Call Colette 801.541.7259



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STOP THAT!

BY STU HAMILTON

You are driving through your neighborhood when a ball bounces out into the road. Knowing that a child may be chasing right behind it, you stomp on the brakes, and the car stops.

How does that happen?

It may be easier to visualize if you think about a bicycle. On your bicycle, you squeeze the handbrake. The brake lever pulls a cable. The other end of the cable actuates the brakes. The brake actuation always results in rubber pads that are pushed against the side of the wheel, causing friction. The friction slows the wheel.

The brake actuation can be done a couple of different ways. On some set-ups the cable squeezes two arms together, causing the other end of the arms to come together (almost like a pair of pliers). This is a simple solution to manufacture, but is a little more complex in operation. The whole brake assembly must be able to pivot slightly so that it can apply pressure to



both sides of the wheel. Likewise, when the brakes are released, it is important that the pads on both sides move away from the wheel.

The second method is a newer one that addresses the complexities of the traditional brake. The cable is designed to

simultaneously actuate two independent arms (one on each side of the wheel). Each arm moves its own pad, causing the two pads to squeeze in on the wheel. With only two

small arms moving (vice the whole assembly), things are much less complex.

As you continue to ride your bicycle, two things will need attention. As you use the brakes, the pads will wear out. Eventually, they will need to be replaced. Also, the cable will require adjustment. Not only does it stretch over time, but as the pads get thinner, they need to be moved closer to the wheels to work properly.

Back to your car... Cables are not an ideal solution for cars. Not only are they complex, but if you were to make them strong enough to stop a car, they would be very heavy. Instead, your car uses hydraulics. When you step on the brakes, fluid is pushed through a tube (the brake line). The fluid at the other end of the brake line is in a cavity between the brake caliper and the piston. As fluid is pushed in, the cavity expands, and the piston is forced out. Hydraulics are also a great advantage in that the pistons can be designed to self-adjust as the pads wear.

Where's my cell phone?

Anyone who has had something on the passenger seat knows what happens to weight transfer when the brakes are pressed. Things go flying forward, and end up on the floor.

The harder you hit the brakes, the faster things fly forward. The same things happen to the weight OF your car. The harder you brake, the more the weight of your car gets "thrown" forward. Up to 95% of the cars weight can be over the front wheels when braking. Obviously, the more weight that starts up front, the more weight ends up there – a car with the engine and transmission up front already starts with 60% of the weight over the front wheels. A 911 hangs the weight behind the rear axle, and therefore has less of the cars weight transfer to the front. Ever wonder why 911's brake so well? They keep more weight over the back axle, and therefore can share the braking demand over four wheels.

In any case, the front brakes do most of the work. When the brakes are pressed, the pads are pressed in to the rotors, causing friction. This friction slows the car. As you may remember from your physics class, energy can not be created or destroyed, only transferred from one form to another. The energy of your moving car is transferred to your brakes in the form of friction. Your brakes heat up (thermal energy) as a result. If you kept braking hard (like on the track or autocross) and they kept heating up, they would get so hot they would stop working well (brake fade). There are two things Porsche does to help you out. First they do their best to cool the brakes – primarily through vented rotors, but also through ducts to bring cold air to the brakes. Second, they design a pad to absorb some of the energy. As the

pads wear, energy is used to pull apart the molecular bonds of the pad surface. This results in brake dust as the pad is pulled apart. The softer the pad, the more energy is absorbed, and the quicker the pad wears out (but the less your brakes heat up, and the better they work).

Your Porsche's stock pads are a compromise between pad life and performance over a broad range of operating conditions. We could fill a *Zeitung* talking about other pads – for example, there are “race” pads that are designed for a smaller operating range – they work much better at the track where they stay hot, but will not serve you well in an emergency stop on a cold February morning.

Baby needs a new pair of shoes...

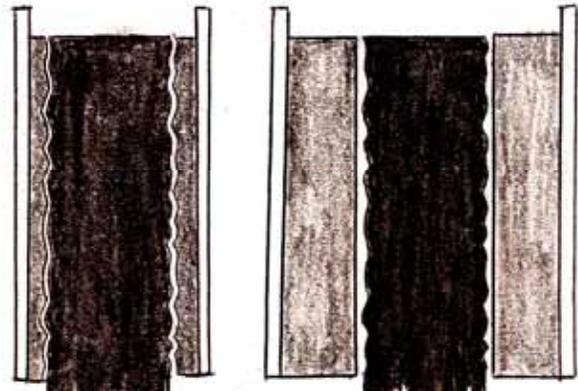
The more aggressive your driving, the quicker the wear. Because of Porsche's compromise, you can expect to use about ¼ of your pad life during a weekend at the track. While you may use less during an autocross, you still want good brake pads.

Rotors (the metal disks the pads grip) will wear also, but not as fast as pads. Rotors will wear, and develop circumferential grooves in them (like an old record – just bigger grooves). This is not a problem, as your pads will develop grooves to match, and they will fit together quite well.

A problem arises when you replace your pads. The new pads will be perfectly flat. When they are pressed against the old rotor, they will only contact the rotor on the “high” spots of the rotor. This means a lot less of the pad is working. During this time, your new pads will not work as well (although it won't be very noticeable in normal driving), and will heat unevenly. Under spirited driving with repeated hard braking, uneven heating can cause cracking or breaking of the pad material.

Eventually, the pads will wear where the rotor has high spots,

and will start to contact the rotor better. A series of long, gentle braking runs will accelerate this “seating” of the brakes. However, the best way to seat them is to do normal driving on them for a couple hundred miles before using them hard (a track or autocross day). You really don't want to replace your pads right before you need them to work at their best.



Old pads and rotors (left) fit quite well, but brand new pads with old rotors (right) will require a little wear before they are 100%

If you are replacing the rotors also, you don't have to worry about “seating” the new pads – as the pads and rotors will be flat and fit together well. However, rotors are expensive, and don't need to be replaced as often. Rotors can also be “turned” – put on a lathe and the grooves are ground down to smooth the surface. This will reduce the thickness of the rotor – weakening the rotor in the process. Although this will remove the deep grooves, and will reduce the need to seat the pads, it isn't recommended for an autocross or track car. It takes off a lot of metal, and the weaker rotors don't handle heat as well – warping or cracking are often the result.



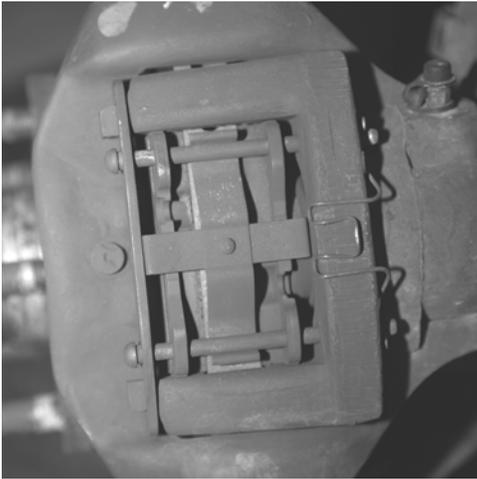
A single piston caliper—note the large housing on the right side. It is often called a “floating caliper” because the piston pushes the pads on the (right) side of the caliper, while pulling the caliper slightly to the right, causing the left pads to engage. If you look carefully, you'll notice that it is a two piece assembly. The inner backward-“C” shape is bolted to the suspension, and aligns the pads and caliper. The outer “C” shape floats and connects the piston to the opposite (left) pad.



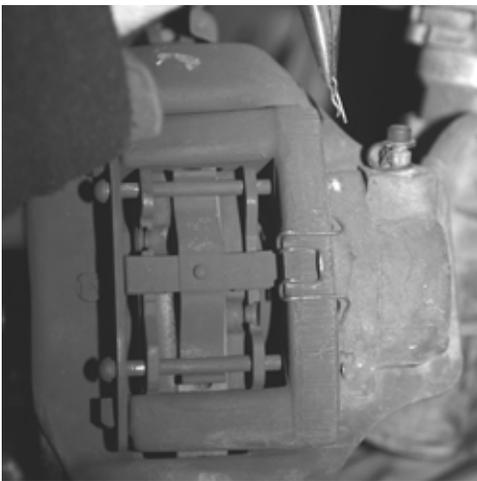
A newer, fixed caliper design. This one uses four pistons—two on each side. Notice the two bumps visible on each side. The entire caliper is bolted to the suspension by the large allen bolts visible on the right side. Only the pistons and pads move.

BRAKE PAD REPLACEMENT

BY STU HAMILTON



The older style "floating" brake caliper



First Remove the cotter pins ...



Then drive out the retaining pins....

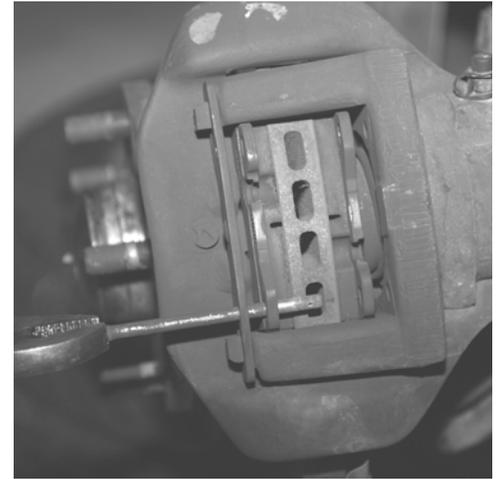
Brake pads are one of the things in your car designed to wear out. Replacing them is a fairly easy and straight forward thing to do, and is a great project for the aspiring home-mechanic that wants to start with something simple. To replace the brake pads, you will need a jack and a metric socket set. Preferably, you should have a torque wrench and jack stands as well.

While you can do the brakes one wheel at a time, I prefer to put the car on jack stands, and get all four wheels off the ground. Whichever way you do it, you should always do an entire axle (the front and/or rear wheels as a pair. Since the front brakes take the most wear, they are probably the ones in need of replacement. However, the procedures are the same for either axle. Before you raise the car, you will want to loosen the lug nuts. If you are going to flush the brake fluid also (a separate maintenance issue and an article for another time), loosen all four wheels. Otherwise just loosen the axle you are working on.

Next, jack up the car. If you are doing one wheel at a time, you can just jack up that corner. Make sure you use a jack stand or block to support the car – don't work under just the jack! If you are going to use jack stands, you can raise the car one side at a time.

Once the wheel is in the air, remove the lug nuts and take off the wheel. A Porsche's brakes are designed to be changed with the caliper on the car. However, if you are using vibration backing plates (in many of the newer cars), you may find it easier to unbolt the caliper. You DO NOT want to disconnect the brake line, only undo the two big bolts holding the caliper to the upright (on the back/inside of the caliper). This may require an allen head socket.

Porsche primarily uses two methods of holding the pads in. Many cars use pins to hold the pads in place. Some newer cars have a central pin, while most older cars use two pins. The pins are held in by a small wire or cotter pin. Once the cotter pin is removed, the pins can be driven out of the caliper. I find a torx screwdriver (that



...and remove the pins with pliers



On newer cars, first remove the brake wear sensors...

comes with most screwdriver sets) to be perfect for driving out the pins. After the pins are out, the old pad can be removed.

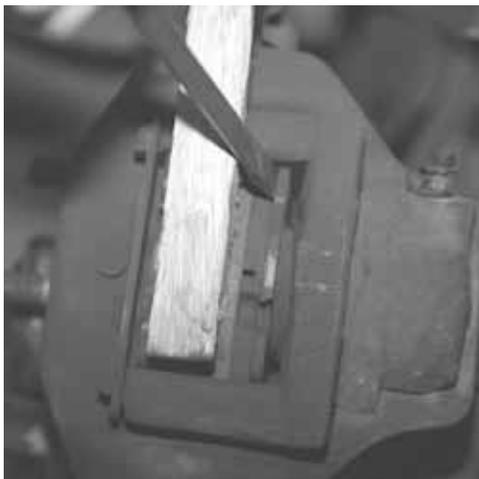
On the newer high performance cars, Porsche uses a large cross-shaped spring to hold in the pads. It can be released by squeezing the middle of the spring with a pair of pliers until it can swing open. On cars with brake wear sensors, the wires will be in the way. They will need to be unhooked from the spring before you can open the spring. If your brake warning light on the dash hasn't come on, you can re-use the sensors. The brake wear light comes on when the end of the sensors are damaged. Therefore, they need to be replaced if the light has come on. In any event, you can



then squeeze the spring with pliers

unclip the sensors from the pads at this time.

Once you have access to the pads, they can be removed. If the brake disks are showing some wear, there will be a little lip (on the disk edge) that will make it more difficult to remove the pads. Also, the vibration springs on the back of some pads will make them difficult to get out. The new pads will be much thicker than the old ones. Therefore you will need to retract the pistons to

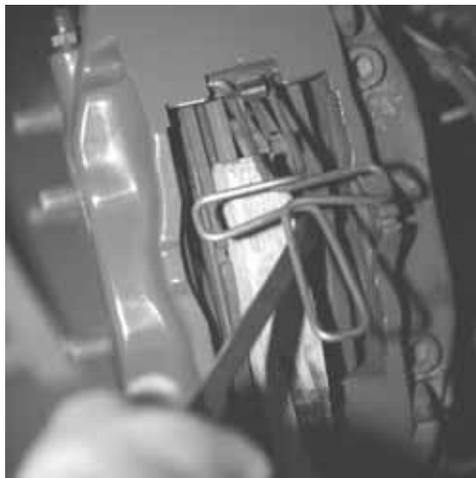


Prying apart the pads will retract the pistons and give you space for the new pads.

make room for the new pads. If you do that now, it will also make removal of the old pads easier.

Some cars have a “floating” caliper, and therefore only one piston (the brakes actually only push from one side, but the result is still that the caliper is still squeezed)- just like the older bicycle brakes. However, higher-performance Porsches have pistons on both sides of the caliper. In either case, your goal is the same – to drive the pistons

into the calipers, thereby opening up the space in the calipers for the new pads. When you drive the pistons back, it forces brake fluid back into the reservoir. You



Prying against the “ears” of the old pad is a good way to drive the pistons back.

will need to open the reservoir cap to allow air to escape as the reservoir fills with fluid.

BEWARE: If the reservoir is full, or overfilled before you start, you may overflow the reservoir.

Either remove some fluid first, or watch it carefully for overflow. As the brake pads wear, the fluid in the reservoir drops. So, if you have fluid level towards the minimum mark when you start, you should be fine.

Sometimes, driving the piston(s) back is the hardest part. The important thing to remember is not to pry against the brake rotor, or against pistons or other sensitive caliper parts. The old brake pads are a good thing to pry against, as you are about to throw them away anyway. I find it is often easiest to use the tabs of the old brake pads. Use a block of wood, screwdriver, and/or small pry-bar to force the pads apart. Alternately, you can use a large pair of pliers to squeeze the pad against the outside of the caliper body (although you run the risk of scratching the paint on the caliper). Once you get the piston to retract, keep it going all the way until it is flush with the inside of the caliper.

The old pads have lots of room to come out now. Simply pull them out by grasping the tabs with a pair of pliers. The new pads will be a tighter fit. If you can’t get them to slide in, you didn’t get the pistons all the way back into the calipers. Put the old



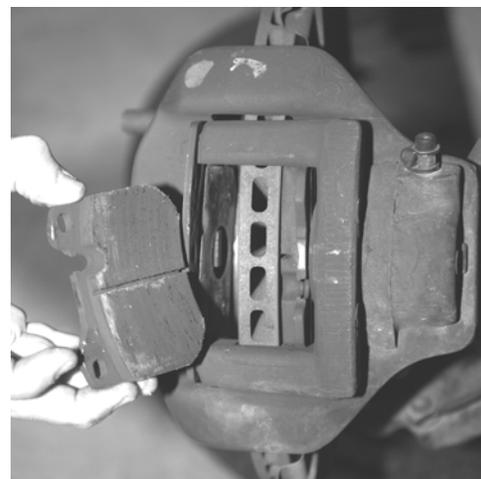
Now the pads can easily be removed.

pads back in any pry some more. With a floating caliper, if one side goes in easily, but not the other side, the caliper may not be centered. Since it “floats”, you should be able to slide it in/out to center it.

Once the new pads are back in, put the calipers back together (springs, clips, pins, etc). Put the wheels back on, and lower the car.

Tighten the lug nuts once the car is on the ground (preferably with a torque wrench). Get in, and pump the brakes. They will pump a few times while the pistons are extended and should firm up quickly.

Remember to go easy on the brakes for the first few miles. They will perform a panic stop if need be, but avoid repeated hard braking until the brakes seat.



These are fairly new pads. The groove in the middle of the pad is a wear indicator. If the pad is worn down so there is no groove, you need new pads.



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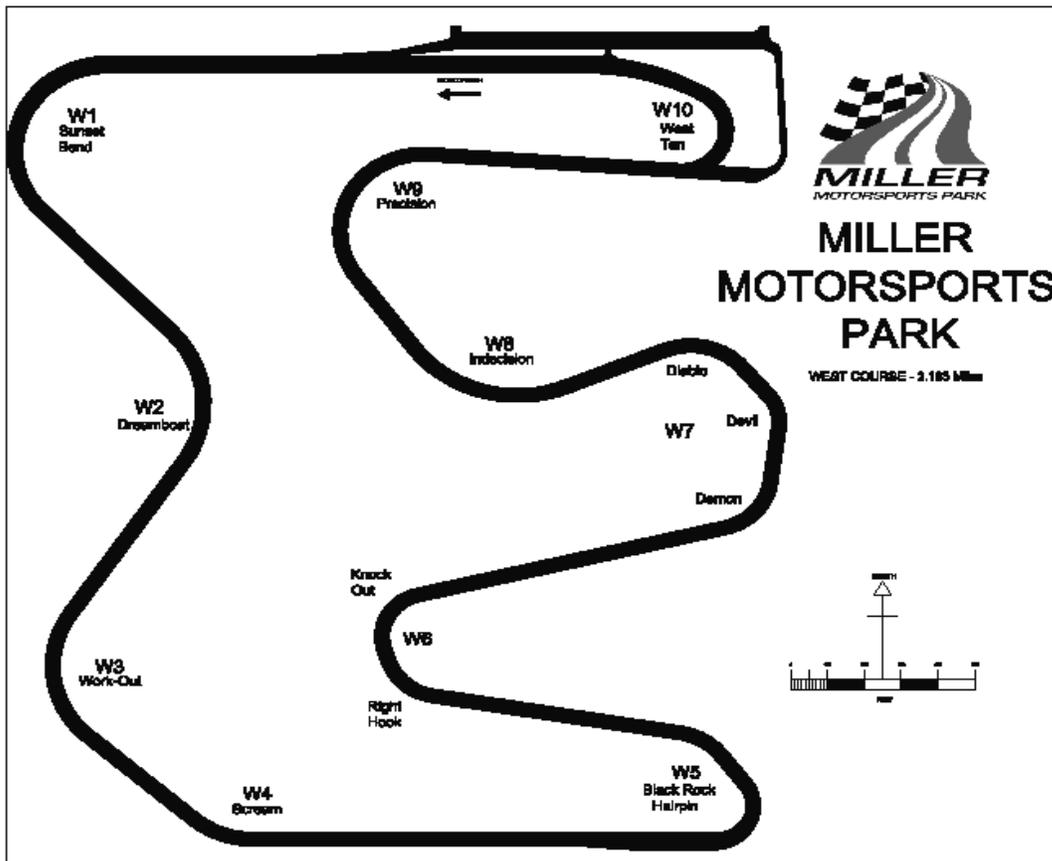
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WHAT'S THAT NOISE?

Applying the brakes lightly can lead to a loud squeak. While annoying, there is no danger to your car. As the pads are pushed against the rotors, you have a spinning rotor and a stationary pad. The movement can cause the pads to vibrate against the calipers. This causes the squeak. If you push harder on the brakes, the forces cause the vibration to stop. If your brakes make noise as you brake hard, you do have a problem that needs to be fixed.

Volkswagens are notorious for brake squeak, and Porsches have the tendency as well. The factory has tried different things over the years to help the squeal. Springs to help hold the pads, anti-vibration pastes, and most recently backing plates with springs - all of these in an attempt to absorb the vibration so the squeak stops.

These all seem to work well. However, there are things that can cause a squeal to emerge. Aftermarket pads are often the culprit. Some cheaper ones aren't designed with as close of tolerances, leaving more room for the pad to vibrate. Also, expensive pads are designed for specific applications (i.e. race pads), and may vibrate more under street conditions. Lastly, hard driving may cause squeals. My 911 came back from the track sounding like a Mack Truck last summer. After investigating, I discovered the high temperatures at the track had melted the glue holding the anti-vibration backing plates on. After using high-temperature epoxy to re-glue the plates, the squeal is gone.

BE A BETTER BRAKER

BY STU HAMILTON

We all use the car's brakes every day, but how often do we think about braking? When we don't think about it, we can let bad habits slip into our activities. I sometimes instruct with the Porsche Club during the DE events. Braking is the area where I see the most bad habits.

Whether on the road or on the track, your tires are doing all the work – accelerating, braking, turning – it's all tires. Sure, a powerful engine helps you accelerate, a good suspension helps the car turn, but in the end, it's the traction on the road that lets your car do anything. If you ask for more power than the tires can handle, you spin the wheels and don't accelerate. If you brake too hard, you skid the tires, and don't stop as well (although anti-lock brakes often help keep the car in control). If you turn too hard, your car will slide or skid, possibly going off of the road.

As you hit the brakes, the traction of your tires slow the car. If you want to brake at 100%, then your tires need to be dedicated to braking. As you enter a turn, your tires do the work. If you want to turn as fast as possible (100%), your tires need to be dedicated to turning.

Whether you are on the track on the road, you usually slow down for turns. Picture yourself approaching a turn. If we want to maximize braking, all of the braking should be done in a straight line (so all of the tires' traction can be used for slowing). Once the braking is done, then we can come off the brakes, and start the turn. Then, we are only asking the tires to turn. If we approach the turn this way, we can get the maximum braking and maximum turning performance from the car. The fastest way through the turn is brake straight ahead, finish braking, and then turn.

I can already hear the collective "Yeah, but..." coming from many of you. As you start to look at advanced car control, you will introduce ideas of how to transition from brakes to turn-in. "Trail-braking" is when you aren't completely off the brakes as you start the turn, which helps the car rotate into the turn. However, this is a conscious decision to brake late – not an sub-conscious, bad-habit activity.

So, if you aren't already doing it, start thinking about braking, and try to get your braking done in a straight line, before the turn. Even if you never come to the track, it will make your driving smoother and safer.

So, now that you will be braking in a straight line, HOW are you going to brake? That's the other bad habit you can witness every day. The next time you get in the car, watch how other cars stop. Most of the time, you'll see a car approach an intersection, slowly get on the brakes, then increase the braking as the intersection gets closer. Most of the time, they don't stop when they should; I often wonder if they are going

to be able to stop at all. Zoom- across the stop line... Whoosh- through the crosswalk (good thing there wasn't a kid there)... huge nose-dive as they really get on the brakes to avoid going all the way into the intersection... I often watch this, and wonder how many times they have plowed into the back of their garage at home.

I could fill an article with all the reasons it's unsafe to drive like this. Let's just assume that kid got out of the way in time, and wonder what happens when the roads are slick...

Since we all want to be better drivers, let's talk about how we should brake... Obviously, the safer way is to slow down early. I'm not recommending you drive like the proverbial grandma. I'm not even recommending you necessarily start slowing down earlier, just adjust the way you slow down.

The next time you approach a light or stop sign, try to challenge yourself. If you want to, you can get off the gas early and coast a little (save a little gas in the process) – but that's not the challenge. When you are ready to brake, roll onto the brakes smoothly, and set a constant pressure to stop before the stop line. You are allowed to release a little pressure, but penalize yourself if you have to increase pressure. Your goal is to set a constant pressure, and stop in time. The earlier you brake, or the faster you are going, the harder it gets. Don't make it your goal to be perfect – you'll give up quickly in that case. Treat it like your own little game of the "The Price is Right" – get as close as you can without going over. You can always ease off the brakes, but if you press harder, you just went over. Again, you'll get a lot smoother as a driver. Remember "Trail braking"? The only way you can trail brake is if you are easing OFF the brakes as you turn in. You can't do that if you have the habit of braking harder toward the end. Besides, that "Nose-dive" maneuver really upsets the balance of the car (and launches you cell phone –page 14).

Safety wise, you are braking earlier (again, you may not gotten on the brakes earlier, but you are the slowing down to earlier in the braking maneuver). This will give you a better feel for the condition of the road (if it's slick, you'll find out earlier), and will give you a larger "safety margin" at the end of the braking. This maneuver will also help sharpen your feel for the brake pedal. When you get to the tack or autocross, you'll be able to modulate the pressure to be right on the edge of maximum braking (especially important if you don't have ABS).

The next time you head for the car, give your brakes a little consideration. You will become smoother in the process, and a better driver as a result.



INTERMOUNTAIN CALENDAR

April
2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6 Autocross Davis County	7	8	9	10	11 Moab Driving Tour	12 Moab Driving Tour
13 Moab Driving Tour	14	15	16	17	18 Friday Date Night	19 Air Power Swap Meet
20	21	22	23	24	25	26 Drivers ED WEST Track
27	28	29	30			

May
2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16 Friday Date Night	17
18 Autocross Utah Fairpark	19	20	21	22	23	24
25	26	27	28	29	30	31

June
2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8 Mt Nebo Driving Tour	9	10	11	12	13	14
15	16	17	18	19	20	21 Drivers ED WEST Track
22	23	24	25	26	27	28
29 Autocross Utah Fairpark	30					

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11 Jackson Hole Tour	12 Jackson Hole Tour
13 Jackson Hole Tour	14	15	16	17	18 Friday Date Night	19
20 Drivers ED WEST Track	21	22	23	24	25	26
27	28	29	30	31		

July

2008



Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3 Autocross E-Center	4	5	6	7	8	9 Summer Social
10	11	12	13	14	15 Date Night (Page 11)	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Aug.

2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Aug 31	1	2	3	4	5	6
7	8	9	10	11	12	13 Oktoberfest
14	15	16	17	18	19	20
21	22	23	24	25	26 DE and Club Race	27 DE and Club Race
28 DE and Club Race	29	30		Oct. 26 Autocross Davis County		

Sept.

2008

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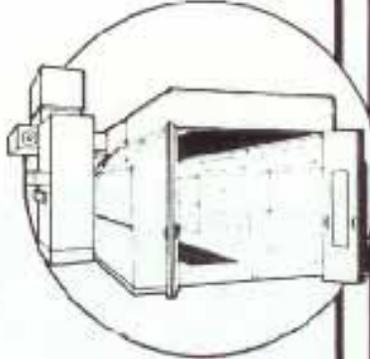
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