

THE INTERMOUNTAIN REGION
PORSCHE CLUB OF AMERICA

ZEITUNG

AUGUST/SEPTEMBER 2008



IN THIS ISSUE

Driving the Line

Joining the Google Group

Mt Nebo



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THE DRIVERS SEAT

As the summer comes to a close, we are all thinking about the transition of the seasons.

The Club's main activities are centered around the summer months. Many of us drive our cars year-round. However, many of our cars are put into storage, or see limited use when the snow falls, and the roads are salted. The warmer months certainly provide a better environment for enthusiastic driving.

For this reason, the Club's main activities are centered around the summer months. However, we still have a few great activities left.

One more autocross is going to take place at the fairgrounds on October 26.

We have the biggest track event coming up at the end of the month. Even if you don't want to drive, come out to the track (or autocross) and see what your club is all about!! If you have some time to spare, we are always in need of help during our Club Race (put on in conjunction with the full-track DE).

Will Crowther had to cancel the Oktoberfest driving tour, and is organizing another fall Mt Nebo tour for this weekend. Email him (address at right), if you are interested in participating.

Just because the driving events are winding down, doesn't mean the club stops. We have a couple of great socials set up this fall (thanks to Collette Read).

We also have a tech session scheduled next month. Come by and bring any questions you have. Whether changing oil, brake fluid, or brake pads, most Porsche maintenance is easier than you think. Come by and learn how to do it!

Stu Hamilton
Newsletter Editor

Membership and Change of Address:

PCA National
PO Box 5900
Springville VA 22120
703.451.9000 ~ www.pca.org

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Porsche Club of America
3383 Danforth Dr.
Salt Lake City, UT 84121
<http://int.pca.org//>

Editor: Stu Hamilton
Zeitung@Fauxsimile.com

President: Otto Silva
Otto@databaseguru.net

Vice President: Doug Tunquist
Doug@Pegasus.us.com

Secretary: Zana Anderson
Zanauilani@Yahoo.com

Treasurer: Ed Mineau
EMineau@Comcast.net

Membership: Kay Koellner
Koelhunt@aros.net

Rules/Safety: Cory Woolson
Woolsons@Wirelessbeehive.com

Race/DE Liaison: Ed Mineau
EMineau@Comcast.net

Social: Colette Read
Colette@Xmission.com

Historian: Gail Chase
Gail_Chase@Comcast.net

Autocross: Rodney Salm
Rodney@AerospaceTooling.com

Tours: Will Crowther
DesignerGenes@Comcast.net

Webmaster: Roger Helman
RHelman@Gmail.com

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ON THE COVER: SEPTEMBER 2007 CLUB RACE

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

I can't believe that summer is almost gone. The cool evenings mark the coming of Fall and soon snow will adorn our driveways. Having been born in the tropics, I can honestly say that I totally dislike shoveling snow. However, I do enjoy living at the foothills of such gorgeous mountains. I hope many of you have enjoyed the events that we have had this summer and that you have made an effort to attend one or more Autocrosses, High Performance Drivers Education (DE) and/or one of our many tours and social events. For those of you who are new to the club or have simply been too busy to come out, there is still plenty of activities for everyone. Here is a short list of some of the activities we have planned:

September 26th, 27th and 28th - Full Track DE, Miller Motorsports Park, Tooele
October 17th Fall Social at Jeremy Ranch. Cost is \$25 per person. Please RSVP
October 18th Tech Sessions at Kapp's European Imports
October 26th Davis Country Fair Grounds - Autocross
December 12th Christmas Party at Hidden Valley Country Club

As you can see, we have something for everyone. Ranging from autocross car handling, full track DEs, "how to" tech sessions and plenty of social events. Please remember that involvement is key in your enjoyment of our Club. Our website int.pca.org will have more details, maps and further details.

Sincerely,

Otto Silva
IRPCA President



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Here are some Myths and Facts about Gasoline

Myth: Too much octane will burn up my engine

Fact: The only time your engine is aware of octane is when it doesn't have enough octane.

Myth: Street gasoline with oxygenates is junk

Fact: Street gasoline of today, especially in California, is the best performance gasolines next to racing gasoline.

Myth: I buy premium grade gasoline because it has more and better additives to keep my injectors and valves clean.

Fact: All gasoline sold in the U.S. are required by law to contain an additive that will keep injectors and valves clean.

Myth: The octane requirement for my engine is always the same.

Fact: Operating conditions like air temperature, barometric pressure, humidity, and coolant temperature have an impact on engine octane requirements.

We would like to hear from you and help you with any of your needs and specialty requirements. Give me a call any time.

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BE A GOOGLE GROUPIE

BY STU HAMILTON

We have a fantastic club! I wish everyone would participate in events, and see how much this club has to offer. To participate, you have to be aware of what opportunities there are. In an earlier issue, I talked about how you can stay up-to-date on activities.

As you may remember, the best way is to get on the Google Group Email list. This way, you will automatically get Emails about club activities. Don't worry about being flooded. The spam is well controlled, and only members may send Emails out. In addition to emails about activities, there are often emails about questions members have (tire, mechanic recommendations, etc.). Overall, it is usually a couple dozen emails a week—an easy amount to deal with.

The benefit is that you stay up-to-date on activities. If events are added, cancelled, or rescheduled, you can find out by being on the IRPCA Google Group.

So how do you become a Google Group Member? I've broken it down into easy steps....

Google Account Setup

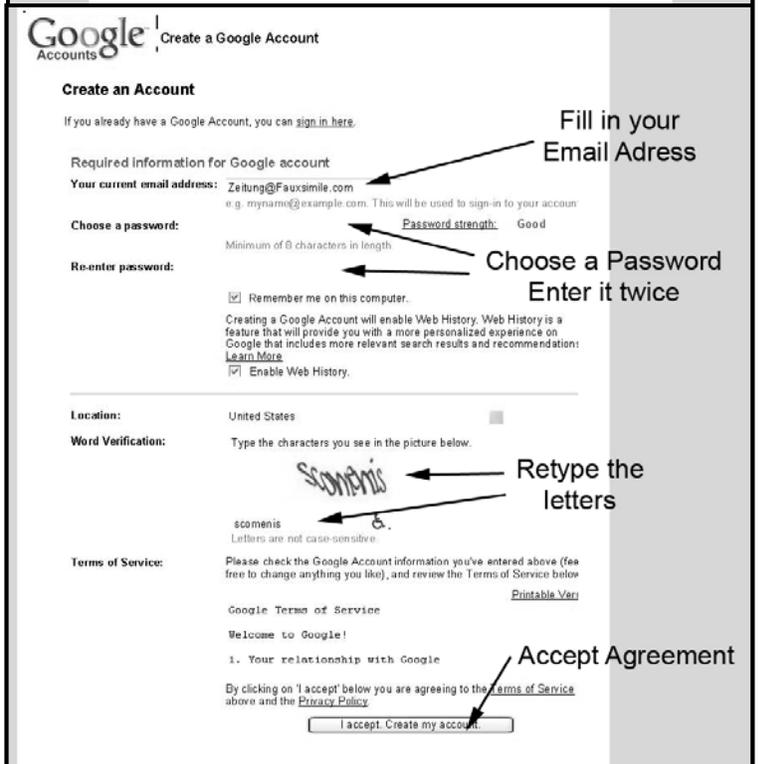
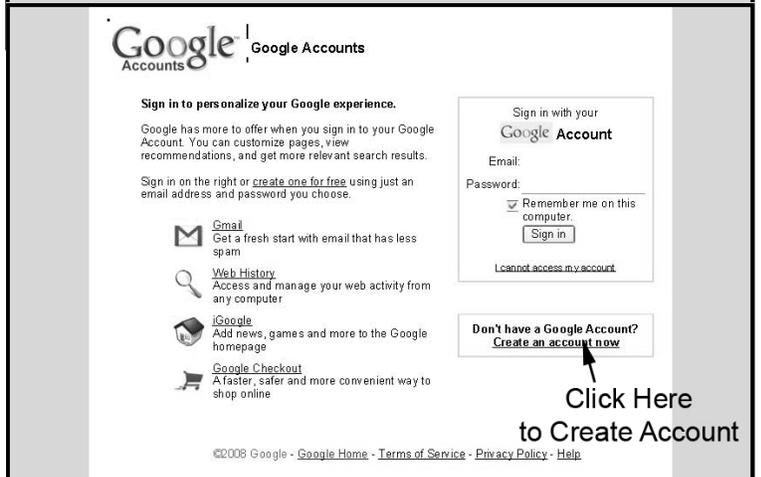
The first process is to create a Google Account. (This also allows you to customize your Google Page, or access Gmail, so some of you may already have one)

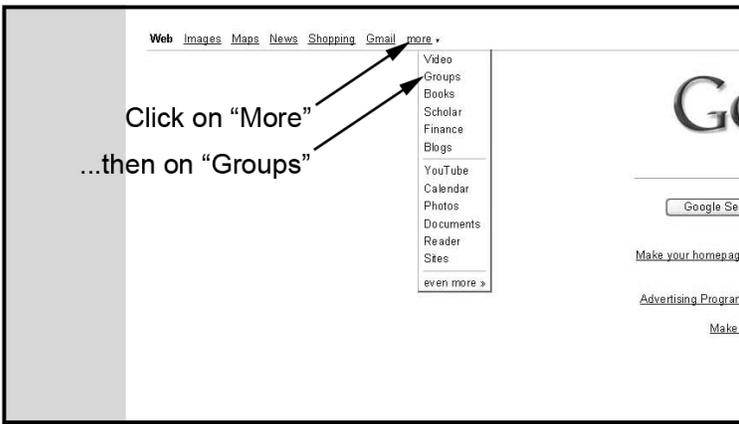
- 1) Log onto the Internet (using Internet Explorer, Firefox, Safari, or whatever browser you use).
- 2) Type "**Google.com**" in the address window (if your home page is Google, you may already be there).
- 3) Look in the top right corner. If it says "Sign Out", you already have a Google Account. Skip down to the instructions for the User Group. If it says "Sign In", click on "Sign In".
- 4) On the next page, click on "Create an account now"
- 5) **Create an Account**
 - 1: Fill in the Email address you would like to use for the Porsche Club (this email address is not shared in any other way).
 - 2: Choose a Password. Enter it twice.
 - 3: Re-enter the letters in the "Word Verification Box" (this word will not make sense, just type it as it reads).
 - 4: Click "I accept/create my account" button
- 6) A verification Email will be sent to your Email address. Open that email. Find the link on the top of the Email, and click on the link.
- 7) Wait while a new window opens and states your Email has been verified.

Now that you have a Google account, it is time to join the Porsche Club Group....

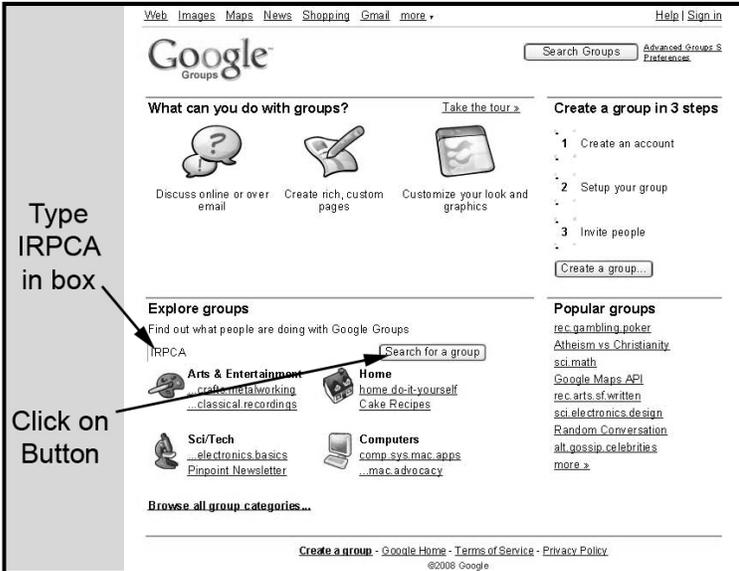
Join the Google Group

- 1) Find the list along the top of the Google page.....
"Web Images Maps Shopping Gmail More"
- 2) Click on "**More**", then select "**Groups**" from the drop-down list.



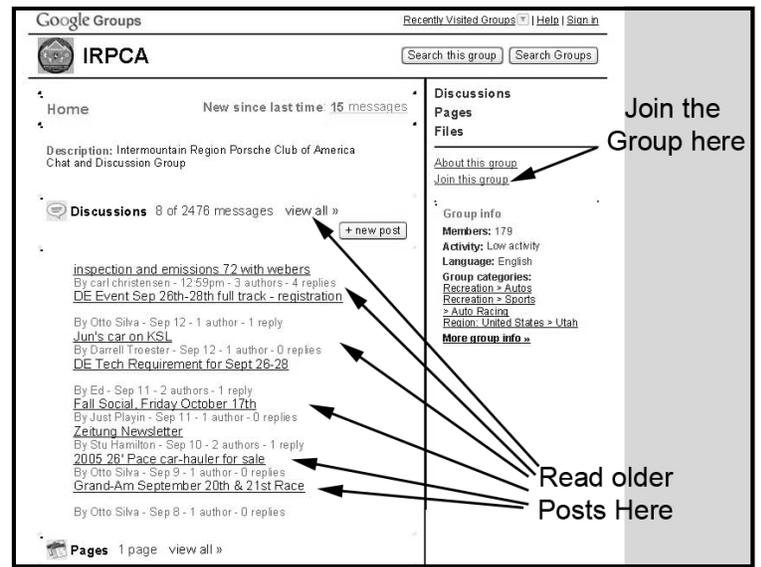


3) A new page will open....



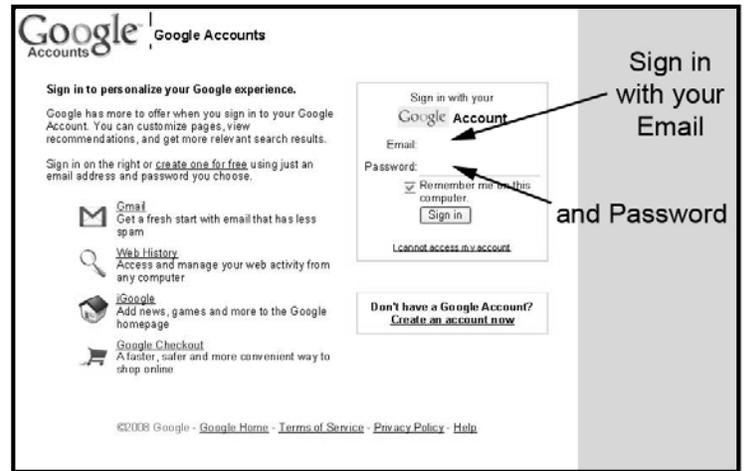
4) Halfway down the page on the left is a box titled “Explore Goups” Click on the text box with your mouse, and type “IRPCA”.

5) Click the button next to the box that says “Search for a Group”.

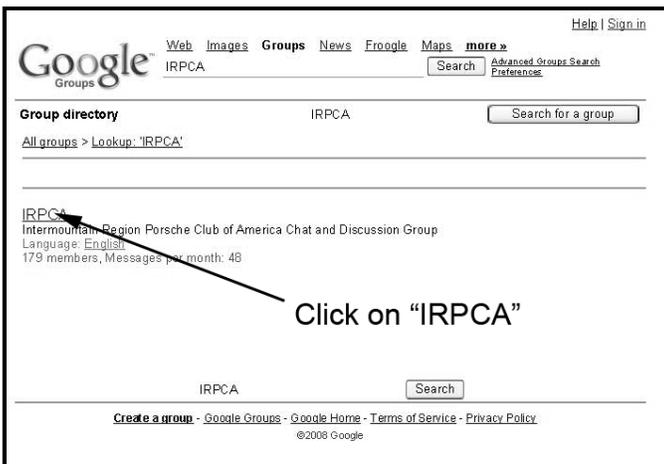


7) You will be taken to the main page for our Group.

8) On the left side, you can view older posts (do that later). First things first—On the right side, Click On the “Join this Group”.



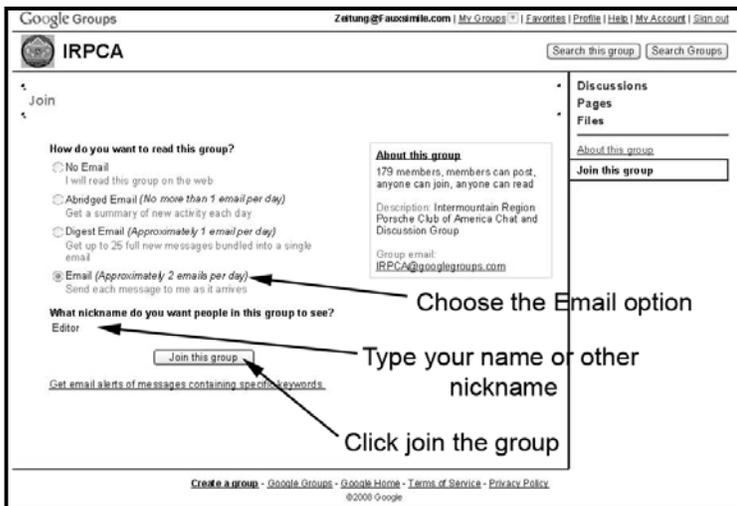
9) You may be taken to a page to sign in... if not, skip to step 11. If you do have to, Sign in with your Email the Password you created earlier...



6) A new page will open with the IRPCA group listed. Click on “IRPCA”



10) If you had to sign in, You will probably be asked for a nickname at this time. In the appropriate spot, put your name or a nickname, so other members will know who you are (they may not know who you are from your email address).



- 11) The next page is where you sign up for Emails. I recommend doing the last option—signing up by individual email. There are usually only a couple of emails a day—not a huge amount to deal with. If you didn’t provide a nickname in the last step, do so now. Then, click “Join the Group”.
- 12) **Congratulations!** You are now an informed member of one of the best clubs in Utah. Come out, and join the Fun!

Google is a Registered Trademark of Google, Inc. If you don’t know that by now, you probably still use an abacus, and don’t have a computer— so you wasted your time reading this article!

IRPCA Fall Social

Friday, October 17, 2008



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DRIVING THE LINE

BY STU HAMILTON

In the March/April Zeitung, we talked about braking—and that it should be done in a straight line BEFORE a turn. We talked about the importance of braking smoothly. In the last issue (May/June), we talked about the Science of Turning, and how your car handles as it goes around a turn. We discussed understeer, oversteer, and that accelerating during a turn will help to stabilize the turn. Again, we talked about the importance of being smooth.

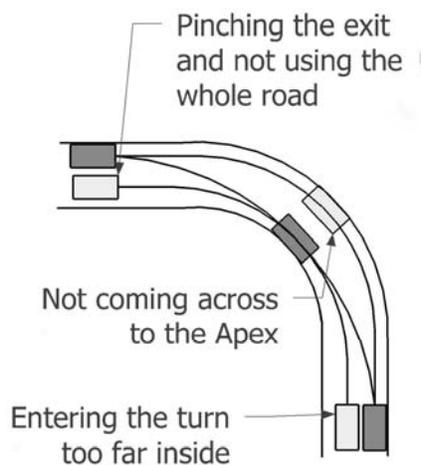
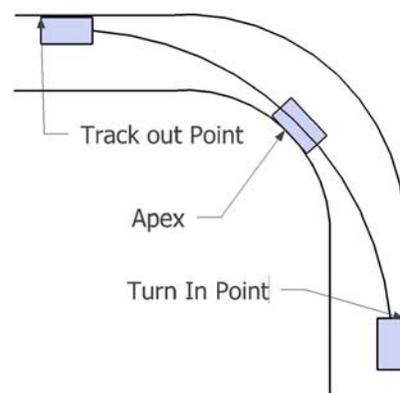
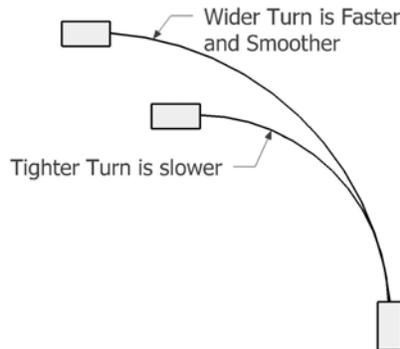
So, now that we know how to smoothly brake before a turn, and how to smoothly turn the car, we need to talk about the best way to get through the turn.

Look at the top image to the right. Which turn will your car be able to get through faster? If you are going to go a set speed, which turn will be able to be taken more smoothly?

Whether your goal is ultimate speed, or keeping your coffee from spilling, the answer is the same... the straighter the curve, the faster and/or smoother you will be through the turn. The tighter the turn, the harder and slower it will be.

In the next drawing, I've taken the wider turn, and placed it over the diagram of a curve (the car enters from the bottom of the diagram). This is the fastest way through the corner. By using the entire width of the road, you straighten out the turn as much as possible. The start of the turn (Turn In Point) and end of the turn (Track Out Point) are at the outside edge of the roadway. The middle of the turn is at the inside of the roadway. The point where the car is closest to the inside of the roadway is called the Apex.

When you don't use the entire width of the road, you end up driving the tighter turn in the first drawing. This can be caused by not being on the outside of the road during turn-in and/or pinching the exit and not allowing the car to track out to the edge of the road during turn exit. Even if you enter and exit the turn on the outside of the road, you can still end up taking the tighter turn. This can be caused by not getting

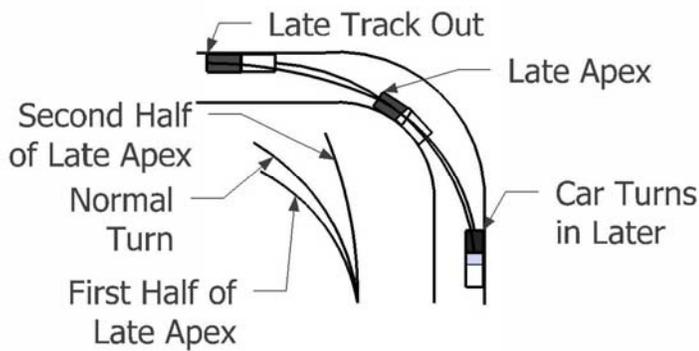


across the road to the inside of the turn at the apex. Any combination of turn-in/apex/track-out errors will cause a less than ideal (and therefore slower) turn.

Thus far, we have addressed the turn as an isolated feature. However, we know it isn't. We rarely take a turn in the constant-arc curve I have depicted in the drawing. Foremost, we don't normally take a turn at a constant speed. Additionally, there may be roads in front of, and following the turn that will affect the way we drive.

So, why don't we take the turn at a constant speed? In the real world, we are usually slowing down before a turn, and accelerating out of it. A slower exit speed from a corner will mean that we will be slower the entire time we are accelerating. In other words, if we can start accelerating earlier, we will carry that extra speed down the entire straight-away. Let's look at an imaginary turn driven in a Porsche Boxster. Imagine that a turn could be taken at a maximum steady speed of 45 mph. If we enter the turn slower, we can turn a little tighter in the first half of the turn. Then, we can turn a little wider in the second half—allowing us to take the second half faster. Maybe we could enter the turn at a slower, say 40 mph, start accelerating earlier, and accelerate to 48 mph at the track out point. This may not sound like a lot, but 3 mph works out to 4.4 ft/second. In other words, with a straight away that is 1/4 mile long (approximately 12 seconds), if you exit at 48 mph, by the end of the straight, you will be 56 ft ahead of a car that exited at 45 mph—you will be 3 1/2 car lengths ahead!

Is the opposite true—Will you get the same benefit from braking less, and entering the turn faster? No—a car's braking performance is several times that of its acceleration performance. A 1997 Boxster needs 1320ft to accelerate to 90 mph (1/4 mile), however to stop from 70mph requires only 165 ft! Relative to a car entering the turn at 45mph, you will only lose a few feet slowing to 40 mph—far less than the 56 ft you will gain at the exit.



So, how do we put this theory into practice? In order to tighten the first half of the turn, we will enter the turn later, and turn sharper. This will carry us farther around the turn before we come to the inside of the road. Hence, this is termed a “Late Apex” turn. As a result, the second half of the turn will be much straighter, and we can be accelerating through the turn. The diagram illustrates this, and shows a normal turn compared to the first and second half of a late apex turn.

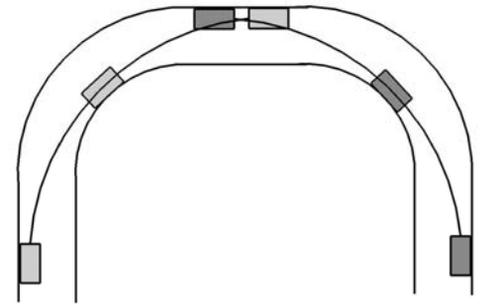
Is it as easy as it seems? Yes, and No. The late apex turn is a simple adjustment you can make to drastically improve your driving. However, knowing exactly what speed to enter a turn, and when to turn in takes a lot of practice. If you slowed all the way down to 30 mph for our example turn, you would make a very smooth turn. However, even if you started accelerating at the turn in, you may only accelerate to 42 mph at track out— slower than a 45mph exit of a normal apex, and far slower than the 48mph of an ideal turn. For any given turn, your car will have an ideal line. If you enter too fast, you will not be able to start accelerating early enough. If you enter too slowly, exit speed will suffer. If you can take the turn, accelerating though it, and feel like the car is cornering at it’s optimum all the way around, you have found the best line for you and your car.

Also, it’s important to remember that the line will not be the same for all cars. A low powered car will need to conserve all the speed it can, since acceleration is slow. If you drive one of these “momentum” cars (early 911, 914, 924, 944) your line will be closer to a normal apex. By contrast, the high power cars will need an even later apex. A 911 Turbo may want to enter our sample turn at 35mph. With an even later turn-in, the Turbo could straiten out the exit, and use it’s power to accelerate to 55 mph at track out. (entering at our Boxter’s 40 mph would result in the Turbo accelerating to a 60mph—a speed too fast for our tight 48mph track out. To get a wider turn in the second half, the first half is tighter (and slower).

Often times, you will find two (or more) turns linked together. The turns can not independently be driven—they must be looked at as a single entity.

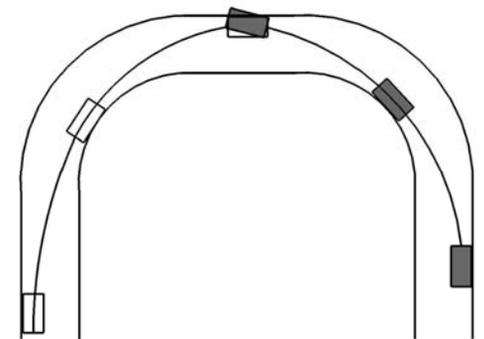
Look at the next drawing. In the case of two turns linked together, we must think of them as a single entity. If we examine them separately, we will see that the ideal track-out for the first turn is AFTER the ideal turn in for the second turn. Obviously, a car can’t be in

two places at once. Therefore, we have to link the turns together. Similar to a single turn, we want to maximize exit speed. This means that the second turn becomes the most important. The goal of the first turn is solely to put the car in the best position to late apex the second turn.



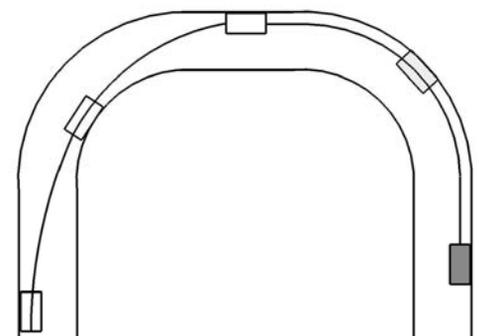
So, we need to get the car to the turn in point for the second turn. However, it isn’t enough to simply know where the turn in point is. This leads to a common mistake.

In this drawing, the first turn is adjusted to bring the car to the second turn in point (again, entering on the lower right). However, by driving TO that point, the car is not set up properly for the second turn— in fact, to avoid going off the road, the car will have to turn



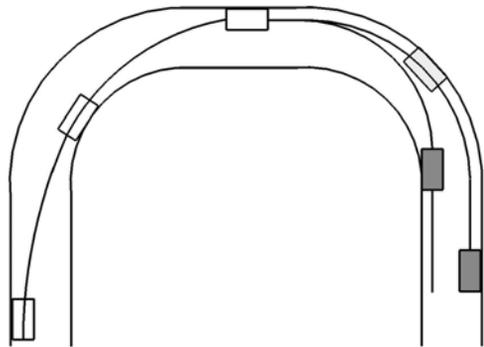
extremely hard at turn in. The proper line through the first turn will position the car not only at the turn in point, but going in a direction that turn in is possible.

In this drawing, the first turn is taken by hugging the outside of the turn. In this manner, the car is not only reaching the turn in point, but is pointed in the right direction. As we discussed at the beginning, this isn’t the most ideal line through a turn, but it allows us to accelerate as we turn in for the second turn (if not before). The first turn is tighter, but the slower speed isn’t nearly as important as the set-up for the second turn. Going back to our example turn, a normal apex could be taken at 45mph. This turn, being less than ideal may only allow a constant speed of 40mph. However, that is the speed we want to enter our late apex second turn to achieve maximum track out speed!

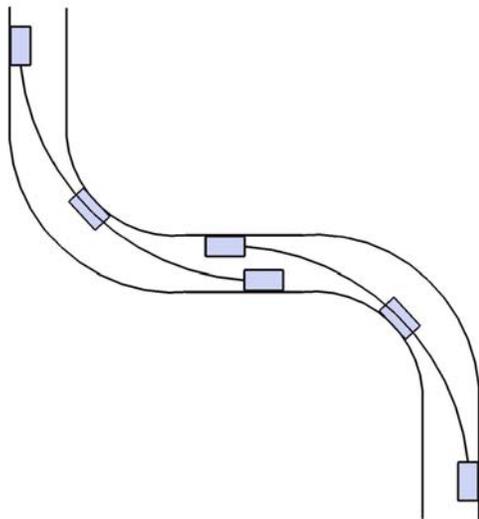


If you've driven at Miller Motorsport park, you will encounter linked turns in a few places. It occurs in the East Track at Turn 7 (Agony/Ecstasy) [full track turn 15]. Although more subtle, you will find two turns linked together a second time on the East track at Turn 1 (end of the straight). In this case, the second turn is much tighter than the first, but the line is similar. Linked turns occur on the West Track as a right turn in Turn 6 (Right Hook/Knockout).

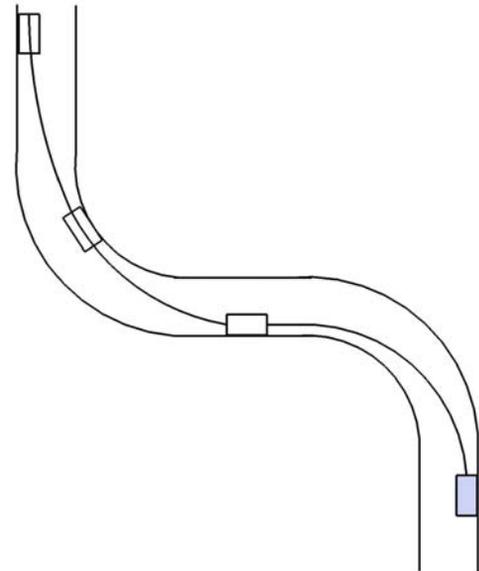
It is worth noting that this type of turn is when you will see the widest variation of driving lines. Again, the second turn is crucial. The 911 Turbo that wants a turn-in at 35 mph would be wasting time to take the first turn at a steady 40 mph.. Since the first turn can be tightened to 35mph, a different line can be used.. The driver can maintain higher speeds before the turn by driving deeper into the turn, and braking later. Since the turn is tighter, the whole width of the turn isn't needed, and distances can be shortened by entering on the inside. This is a case where speed isn't important, so a shorter distance is the way to go faster. If you watch cars at MMP East Turn 7, (full track turn 15) you will see both of these lines, and every variation in between.



The lines must also be adjusted when opposite direction turns are linked. Once again, the two turns must be looked at as a single entity. If the first turn was looked at independently, the car would be hopelessly out of place for the second turn. Since we want to maximize exit speed, it is important to get the car to the turn in point for the second turn.



Once again, speed is sacrificed during the first turn—to set up the second. In this case, we want to drive a very late apex first turn. To do this, we drive deeper into the turn, braking later and harder. Our turn in is very late, and we turn in hard enough to finish on the inside of the track (which becomes the outside for the second turn).



Miller Motorsport Park has three turns linked together.

The “attitudes”-

East Turns 8,9,10 (Full Track Turns 16,17,18). The series is a left-right-left. The first two turns are very similar to the drawing. The third turn is very fluid if the first two are set up properly. The key to the attitudes is actually the first turn- getting over to the left side of the track at the end of turn one. (A momentum car can actually be at full throttle at the turn in point for the second attitude, and remain on throttle throughout the series).

In addition to linked turns, there are countless other factors that affect the ideal line through a turn. The ideal line is one that, while driven at the maximum ability of the car, will allow the highest speed through the turn. Road surface can affect the line (is there a bump, or concrete patch in the turn?). Road camber (the “banking”) will affect the line. An uphill or downhill grade will change the line.

However, the basics of the turn are always the same. For any individual turn, the best line will be one that you can brake straight ahead before the turn—followed by a late turn-in, late apex, and acceleration throughout the turn. The line remains very similar—whether you are at the track driving hard, or driving casually on the street.



Ken Garff.
Porsche



PORSCHE

Bryan Samuels

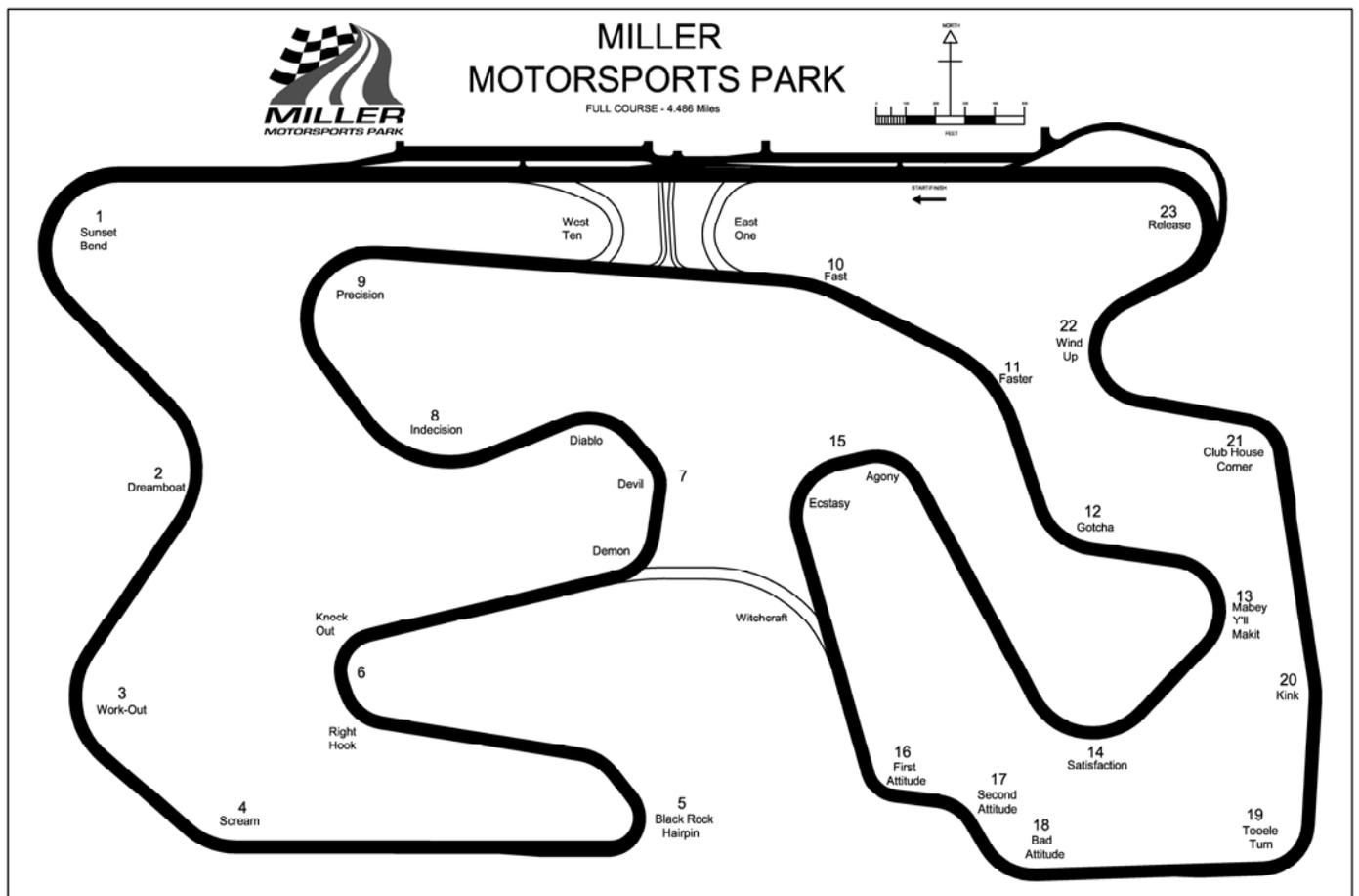
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FIX THAT WOBBLY PORSCHE!!!

BY STU HAMILTON

You all have sat in a chair that wobbles- maybe at your aunt's house, maybe at a friend's, maybe at church- maybe in your own basement... What if I told you that you have one in your garage?

It's obvious when you sit down on a chair- sometimes to the point of being humorous. As soon as your weight is on the chair you can feel it wobble. It can be so bad that it feels like a rocking chair. The reason the chair wobbles is that the legs aren't even. Lets think about HOW it wobbles. It will wobble on a diagonal. If the front-right leg is too long, your chair will rest on the front-right, and back-left leg. In addition, it will also rest on either the front-left, or back-right leg (and will "rock" back and forth).

If you remember your high school geometry, you know that it only takes three points to define a plane. In this case, the plane is the flat surface of the floor. A three-legged stool will never wobble. If you want a stable camera, you put it on a tripod—have you ever seen a four legged camera support? Unfortunately, chairs have four legs. Care must be taken to assure that the legs all rest on the same plane. In our chair, the right front leg was longer. It wobbled because it sat on one of two planes. One plane was defined by the front-right, back-left and front-left legs. The other by the front-right, back-left, and back-right legs. We can actually fix this by cutting length off either the right-front, or left-rear legs! It is the diagonal pair the need to be fixed, not the specific leg. Think about the chair in terms of the front-left, and back-right. If the chair is resting on the front left, the back-right will be off the ground. That is because the "middle" front-right/back-left legs are lifting too high. We can lower the middle but shortening either (or both) of the legs.

Are chairs the only things that wobble? NO! But a wobble in other things is less obvious. How many times have you pushed a grocery cart that wasn't even. As soon as you start pushing, one of the front wheels starts "thumpa-thumpa-thumpa" and shaking back and forth. You may even make it worse by putting groceries in the cart. That will put more weight on the back wheels, taking weight off the front, shaking wheel. More weight could make it better, though, causing all the wheels to take more weight, and hiding the wobble.

The wobbly chair is funny, the wobbly cart is annoying. Would you know if your car did the same thing? Probably not.

Your car has a suspension that puts weight on all of the wheels, so your wheels won't ever shake like a grocery cart (although my friend in high school had a \$300 Datsun that did!!!). However, no shake doesn't mean that the wheels are even. Most cars are close. However, if you are driving on a track (especially racing), you want the optimum performance. You may want to fix that wobble.

How you do that is by figuring out if you wheels are all working together. You can have your car "corner balanced". This is done by getting your car weighed on a scale that weighs each wheel separately. Then, you can compare the weights at each "corner". Again, you aren't concerned that every corner is the same (it will never be), but the total weight carried by each "diagonal" is the same. The

front-left and back-right added together should equal the sum of the front-right and back-left.

The Porsche Club will have scales at the September DE/Club Race. These are there for the racers to have their cars' weight verified by the race officials. However, when the racers are out on the track, the volunteers may be able to weigh your car for you. Please remember that they are volunteers, and that the racers come first!

Once you have the corner weights, there is a little bit of math involved, and you should be able to fix the wobble. Most new cars have an adjustable spring perch in the front suspension. Older 911's and 914's have a torsion bar adjustment in the front. Either of these can be used to make the adjustment. In either case, you need to know the spring rate of the spring/torsion bar. Then you can calculate the adjustment needed. I'll be at the DE, and can help you with the math.

You can also find a race prep shop that will do the math and adjustment for you. They can also re-check their work. Remember that anytime an adjustment is made—or the car is jacked up, the weights will not be accurate. The car should be driven a couple of miles to reset the suspension before a measurement is valid.

Let's go back to our chair. Guess what? If we cut too much off the longer leg, the front-right/back/left diagonal will be shorter than the left-front/back-right diagonal, and it will wobble the other way.

The same thing is true for your car. Remember for every pound you add to one diagonal, you also take it away from the other. Therefore, when you do your math and adjust the springs., you are trying to adjust for HALF the difference.

So what constitutes a wobble? Consider your use of the car. You may often carry a 200 pound passenger. A full gas tank weighs almost 90 pounds. Since they don't sit exactly in the center, they will affect the balance (maybe as much as 50 pounds). You don't want to (and can't) get it perfect. However, I would recommend being in the car when it is weighed, and fixing anything significant.

Will you feel the difference in driving? No. Will you make a difference? Yes. If your car "wobbles", you are asking two tires to do more than half of the work.

MT. NEBO DRIVING TOUR

PHOTOS BY WILL CROWLER



Next Driving tour is
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THOUGHTS ABOUT SAFETY!!!

BY JOHN WATSON, JR

As I sit here writing this, I find myself randomly turning my head, stretching it back and forth, and trying to interpret every little sensation.

In actuality, I don't feel anything I wouldn't feel after a good solid workout. I attribute this to my use of a HANS device, or Head And Neck restraint.

I have been racing for several years now, and have not had a major incident. Last Saturday it was my turn. Coming out of turn one at Miller Motorsports Park's East track, I made the mistake of coming in on the paint and getting on the throttle early. Between the decreased grip of the paint and the additional negative camber, I brought my back end around and found myself facing an oncoming pack of angry race cars. Unfortunately as one of the cars tried to avoid me, he also lost his back end and came into me in a sort of reverse T-bone. His side hit my front relatively square, but with the initial impact on the driver side moving to the passenger side.

It was jarring to say the least.

The other driver's car is more-or-less OK. A door and front fender will need to be replaced, and a leak in his brake lines will need to be taken care of, but otherwise, he could have driven away.

My car... not so. The impact was sufficient to generally obliterate the front end, pushing the frame forks (the part surrounding the engine and containing the strut towers) back several inches. It shifted significantly enough that the foot box on the driver's side has buckled somewhat. Were it a street car it would most certainly be totaled. As it is, we are going to have to figure out if it can be saved.

With all this carnage, I sit here with no pain. My only wound being my

pride. I fully attribute this to the safety equipment in my car, and in particular, the HANS device.

When my father, brother and I started racing, we committed to ourselves that we would not skimp on safety equipment. Essentially we believed if you couldn't afford the best safety equipment, you couldn't afford to race. We bought what we felt were the best belts we could get. Our suits are top of the line, and we run with balaclavas. We installed fire systems in both our cars. With that philosophy, we also purchased a HANS for each of us. The goal was to never have to use any of it.

I know in the wreck my head was flung forward violently. I have the updated straps on my HANS that allow me to turn my head, while still offering the protection. As my head went forward the straps arrested the forward motion preventing strain on my neck. I don't think it was powerful enough to have killed me; the crumple zone on my car helped bring the impact down somewhat. I do think that without the HANS I would have messed up my neck on some level, and at minimum had a significant amount of pain to deal with.



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BETWEEN THE LINES

BY STU HAMILTON

In the article about driving the line, I talked a lot about the different lines through turns. Whatever the turn, the goal of driving is to be smooth. As I discussed, by using the entire width of the track, you can make the turn as straight (and smooth) as possible. As an Instructor at the Drivers' Ed, I find this is one of the hardest thing for many people to do. After a session or two of driving, students often know where the apex is, but fail to get the car over to it. They often have learned the turn in point, but approach it in the middle of the track (not on the outside of the turn).

Using the whole "track" is something you can (and should) do every day. The art of placing the car exactly where you want it is only learned by practice.

The "track" in you daily driving is NOT the whole road, but your whole LANE of the road.

Half of getting your car where you want it is knowing where your car is. If you don't have a good feel for where the corners of your car are, you need to learn. In many parts of the country, the lane markers on the freeway are raised bumps. One can quickly get a feel for where the wheels are by trying to keep one side of the car on the bumps (obviously only done with no other traffic). In snow country, the bumps are not there (the plows would make short work of them). However, on some sections of road, there are "rumble strips" cut into the shoulder. While they are there to awaken the drowsy driver, they can be used for practice (again, without traffic). Practice putting the wheel just on the edge, so you get a slight rumble. Just like all of your driving, look as far down the road as possible—and keep the rumble strips in your peripheral vision.

Now that you know where the edge of your car is, you need to practice placing it where you want it. While it is true that you can make a turn even smoother by using the whole road, there are several reasons not to do this.

First, crossing the centerline is a dangerous habit (Utah has far too many head-on collisions because of this bad habit). Likewise, crossing the white edge line (and driving onto the shoulder) is a bad habit. Let's give the bicyclists and pedestrians a break! In addition, the car behind you will appreciate not having rocks, salt, and trash thrown back onto the driving surface of the road. Although it isn't enforced, it is also illegal to cross the double yellow, or white shoulder line. However, the biggest reason not to do this is that it leads to sloppy driving.

It is much better to stay in your line and concentrate on the placement of the car. Any knucklehead can smooth out the turn by drifting 2-3 feet across a double yellow.

The challenge is to place the car within 2-3 inches of the centerline WITHOUT crossing it.

Practice this concept even when you aren't on a curvy road with a double-yellow centerline. Intersections can be equally as challenging. If you are making a left turn, don't cut the corner—either at the beginning or end of the turn. Imagine a traffic cone sitting on the end of each yellow line. Drive to graze the imaginary cone with the left side of your car. You can challenge yourself just as easily if you are turning right. Use the white edge-line (or curb if there is no white line) as the inside of your turn. At track out, end up in the FIRST lane of traffic. Again, any knucklehead can finish the turn halfway into the second (or third) lane, but challenge yourself to track-out with the left side of the car within a couple of inches of the first dashed white line (or yellow if it is a single lane). Your goal is to drive smoothly, but do so while placing the car exactly where you want.

When you master the skill of placing your car where you want, you will be a better driver everywhere—and will benefit at the track or autocross. The ability to place the car close to the edge of the track (or cones of an autocross) as possible will allow you to be smoother, and therefore faster.

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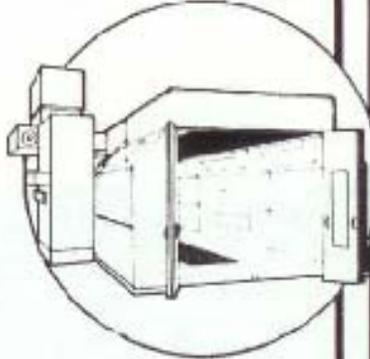
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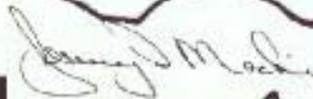
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