



# **MAVERICK REGION**

## **PORSCHE CLUB OF AMERICA**



# **AUTOCROSS:**

## **FREQUENTLY ASKED AUTOCROSS QUESTIONS**

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# Frequently Asked Autocross Questions

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**What is an Autocross?** It is a timed automobile competition, where one car at a time drives a course defined by pylons and/or painted lines on a paved surface. Penalties are assessed for hitting the pylons or crossing the painted lines. Historically, an autocross requires the ability to look at a driving course (you get to walk the course prior to driving it) and to anticipate what must be done to drive it quickly...you don't get to practice! In contrast, a Time Trial event is conducted on a permanent road course (such as a race track), where each time you drive, the corners are in the same places. You get to practice a lot for Time Trials...you gradually bring your speed up, until you cannot improve further. An Autocross requires you to go fast immediately. You will get 3+ runs and some timid people use the first runs to "practice"...but it is limited.

**Is it safe?** Yes. Since there are no other cars and very few (if any) stationary physical objects (like curbs, guard rails, trees, utility poles, buildings, etc), the risk of collision is essentially zero. There are only 2 real concerns: rolling over and fire. The only way a car will roll over at one of our autocross events is if a wheel breaks or a tire comes off of a rim. Both these are very unlikely to happen, as Porsche wheels are among the finest in the world. If you keep proper air pressures in your tires (we check them if they appear low), they will not come off the rims. There is nothing unusual about an autocross that will cause a fire. If your car won't catch on fire on the highway, it won't catch on fire during an autocross. But just in case it does, we always have fire extinguishers at the corner stations (where the workers are). We also check your car to make sure there are no fuel leaks. We are serious about safety!

**What do I need to do before I enter my first event?** Read and understand the rules. Don't worry about modifying anything...yet. It's much more important to learn how to play the game, than to spend time and money trying to make your car go faster. You should primarily check your car to be sure that it is in proper condition. Check the tire pressures, brake fluid level, and engine oil level. Remove anything loose in your interior or storage areas (trunks). Clean your windows (so you can see)...while you are at it, clean the whole car, because a clean car goes faster? Check your brake pad/lining

thickness and replace them if necessary. Check your brake fluid condition (change once a year). If your tires don't have adequate tread depth, replace them. Check the battery to be sure it is very secure. Check for any fluid leaks. Be sure you have a current state inspection. If your car has a rubber timing belt, have it checked or replaced often. Most of these are the same items you already do, if you maintain your car properly!

**What is the difference between an Autocross and a Time Trial?** An Autocross is run on a parking lot, with cones set up to mark the edges of the course (gates), and the course is different for every event. You get several (anywhere between 3 and 12, depending on the event) runs to attempt to get your fastest time. Your fastest single lap time is your "score" for that event. Since the course changes every event, this is like "sight reading" a musical piece.

A Time Trial is set up on a fixed course - it could be on a race track, or it could be on a large parking lot with a course set up with cones, but the cone gates would be farther apart and the speeds faster than a typical autocross. But the course will be named, and will be the same from event to event and from year to year. This lets you track your progress over time.

Another difference is that in Autocross you typically start the lap, run the course, and then exit the course and receive your time. In Time Trials, you stay on course (it is a loop with a singular start/finish line) for multiple laps. Your "score" for the event would still be your single fastest lap time.

**What is this MineralRing thing?** The MineralRing is a big, paved lot. It was used during the Vietnam War to tie-down helicopters. Fort Wolters (nearby...closed now) was the primary US Army Helicopter Training site, during this era. It has been converted to a driving course. A permanent course is marked (with several variations). The permanent course(s) is(are) used for our Sunday events. On Saturday, a different course is set up each weekend. It's in Mineral Wells, about 40 miles W of Fort Worth. Bob **Manskey** is the guy who "owns" the MineralRing (he's a former PCA member) and is the guy who coined the name MineralRing...it stuck. There is an interesting satellite photo of the track, taken in 1995. The permanent "course" is shown, but it has changed since 1995. The current course designs are shown below the satellite photo.

**Where/when can I get instruction?** When you get to your first autocross, ask anyone at the event anything you don't understand. We're all friendly. I bet you can find someone to answer any question. A good way to get a quick idea of what to do is to ask someone, "Who is the best driver out here?" Then ask that "expert" to allow you to walk the course with them...if it's an AX. They will be flattered! Listen to what they tell you as they walk around the course. During the event, you will be required to work. Working a "corner" is a very good way to observe how drivers negotiate the corners. Once you figure out who the best drivers are, watch how each goes around the course...they will probably be different, a function of driving "style" and car setup.

**Which tire is the best one to use?** This is a subject that could take hundreds of pages to cover...then next year everything changes! The best AX tire can be different for each model car. Realize also that your driving style will influence your choice of tires. Some are better with a smooth style and others allow you (need you) to throw the car around. You'll find that many tires can be used with success. Observe the tires used by people in your class and select the tires that seem to be used successfully, by drivers with the same style as you have (or want to have).

**What tire pressures should I run?** Hard question to answer, as tire pressures are so variable from car to car. In general, never go under what Porsche recommends. In general, you probably will run 5 to 10 PSI higher pressures than the factory recommendations. You need access to a tire [pyrometer](#) to adjust pressures and suspension settings accurately. A good trick is to stop near the track and put

about 40-45 PSI in your tires (yes, that's too much), then when you get to the track, talk to people and find out what pressures seem to be popular and then bleed your tires down to that pressure...easier and faster than trying to pump them up.

**How much fuel do I need?** It depends. At an autocross, where you get 3+ runs, each lasting about 90 seconds, you won't use much fuel, so an almost empty tank is OK...and it's lighter when it's empty. At our Saturday events, which are more like Time Trials, you may get 6-9 runs, each lasting about 90 seconds, you still won't use much fuel, but since the course is faster and you take more runs, more fuel is required. That is just the minimum amount so that you won't run out. Several other issues complicate the question:

- If you only have a small amount of fuel, will the constant acceleration cause fuel to be thrown away from the pickup hole in the tank, resulting in fuel starvation?
- If your car has the engine in the rear, will more fuel help the handling, by adding weight to the front tires?
- If the course is composed of mostly straight sections, where acceleration is important, and few corners, where handling is important, will the lower weight of an almost empty tank be the best choice?

As the above shows, the answer is dependent on the car, the driver, and the course. The weather could be a factor, too. So, there is no **one** answer to this one.

A half-full tank is the worst choice...the fuel sloshes around and can affect the handling...it's like having a loose one-hundred pound weight! Either a full tank or an (almost) empty tank seems to be the best two choices. I'd say that the full tank is the safest bet for most courses.

**When do Autocrosses Start?** Registration typically starts at 8:00 AM and runs until 9:00 AM. Driver's meetings (mandatory) are typically held at 9:30 AM. First car on course is usually around 10:00 AM.

**I'm ready! When is the next event?** See the current schedule at <http://mav.pca.org/Events/AX/> .

**Where can I find out more about autocrossing?** Read [Slipstream](#)...Panorama also has articles about autocrossing and time trialing. There are countless books, magazines, and internet sites on the subject. Here is a short list:

- *Going Faster* by Skip **Barber**
- *Secrets of Solo Racing* by Henry (Hank) A. **Watts**
- *How to Make Your Car Handle* by Fred **Puhn**
- *Driving in Competition* by Alan **Johnson**
- *Bob Bondurant on High Performance Driving* by Bob **Bondurant**
- *Going Faster* by Carl **Lopez** (the textbook for the Skip **Barber** School)
- *A Twist of the Wrist* by Keith **Code** (a book about motorcycle racing, but much applies to Autocrossing)
- *Prepare to Win* by Carroll **Smith**
- *Tune to Win* by Carroll **Smith**
- *Engineer to Win* by Carroll **Smith**
- *Nuts Bolts and Fasteners* by Carroll **Smith**

- A very good nationwide publication about autocrossing is *North American Pylon*, a newspaper-style monthly. 800-585-3559 76067.1750@compuserve.com \$24/year
- *Grassroots Motorsports* (GRM), covers most forms of low-cost motorsports. 800-423-1780
- *MotoRacing* covers almost all forms of racing, including autocross. 800-585-3559 \$18/year
- [FAQ](#) - A good list of questions, answers, checklists, and hints

**Can I just come out and watch?** Sure! We'd love to have you. We don't charge any entry fees, but will require that you sign an insurance waiver, so check-in with somebody when you get there. If you want to get involved, but not compete, we will let you "work"...go out on the course with some other people, observe, replace pylons, talk on the radio, wave flags, etc. It's a good way to meet other autocrossers and to see what is involved up close.

**What type helmet do I need?** You need one with a Snell rating of M2010, M2015, SA2010, or SA2015. Snell specs are updated every 5 years, so the latest helmets have M2015 or SA2015 approvals. If you're buying a new one, go ahead and get a 2015. The "M" means "motorcycle" and the "SA" means "special applications". The 2 types are identical except:

- the "SA" type is tested with a cylindrical impact, in addition to a point impact and sharp edge impact
- the "SA" type has a Nomex (fire retardant) liner

For most manufacturers, it is cost prohibitive to manufacture 2 types of shells (the hard, fiberglass outer part), so the only difference is normally the liner. The "M" type is less expensive and can be bought at motorcycle shops, where the "SA" type is normally available only at auto race shops. Both types can be bought by mail, but don't do this unless you can return it when it doesn't fit properly (very important).

**What are all those weird letters and funny words everyone seems to use?** The letters, like DNF and TTOD, are called "initialisms" and are used to simplify (shorten) the reporting of an event. An acronym is an initialism that can be pronounced as a word, like RAM. Don't look these up in your dictionary...

- DNF "Did Not Finish" This means the car/driver did not complete the required course...either failed to stay within the required course or had a problem and stopped on course before finishing.
- TTOD "Top Time of Day" We generally use the more politically correct TTODW and TTODM versions.
- S/F "Start/Finish" The line where timing events are sensed.

The funny words are just "autocross speak"...

- Hairpin Just a sharp turn of about 180 degrees.
- Apex The sharpest part of a turn or where your vehicle comes closest to the inner edge of a turn.
- Chicane A feature designed to slow you down...usually just a quick R-L-R or L-R-L jog.

**How can I improve the autocross performance of my Porsche?** The number one best improvement you can make to your car to make it go faster is: Driver Improvement (sometimes called adjusting the nut behind the wheel). Go out, enter some Autocrosses, Drivers Ed event, or go Time

Trialing! You will get much more out of the car than you ever thought could possibly be in there! Practice, practice, practice! DI is also an upgrade that you can take with you to other vehicles. Try **that** with a DME chip!

If you are or want to be racing your Porsche, the first step in any program of modifications is to get the rulebook and read it. This will tell you what modifications are legal in which classes, and may suggest things that you didn't think of. The next thing to do is to talk with the **fast** drivers. They will have good suggestions...most of them have been where you are! No, they are not worried that you will beat them...

Even if your car may feel a little underpowered, the best modifications you can make (especially for the \$\$) are in the areas of handling and brakes. Engine modifications tend to cost a lot of money for little or no improvement. The speeds need to be rather fast before horsepower counts for much.

Some of the best upgrades are:

- Wider, lower-profile tires
- Soft-compound (sticky) tires
- Wider wheels for the wider tires
- Stiffer springs/torsion bars
- Stiffer swaybars...some cars need no rear bar or a very small rear bar
- Competition-type brake pads
- Fresh brake fluid
- Racing bucket seats & racing seat belts
- Lower ride height
- Lower weight

Again, check the rules as some of these changes will cause you to "bump" to another class, where everybody has the same modifications...and perhaps more! Modifying your car for autocross competition is a lot like global nuclear proliferation...when they get more firepower...you have to get more firepower! There is no real advantage in doing a lot, because there is no secret trick modification that will make you win instantly. A good driver will beat a good car everytime!

(part of this was taken from an article by Dave **Darling** on the PelicanParts page...thanks, Dave)

## **An interesting question and answer session about participating with a "daily driver" ...**

**Q: What is the best way to participate in the AutoX and TT events in a daily driver?**

**A:** Come out and drive! Quite a few people just drive out, pull out the spare tire, pump up their tires a little bit and go for it... It doesn't have to be a big production.

**Q: I am not interested in entering a technology race, nor in changing my perfectly enjoyable Boxster into a race car. I would just run straight street, but I know you can go through those oh-so-expensive street tires in a hurry. Folks usually say "get DOT race tires". I assume this logic means that those DOT race tires are less expensive than their street counterparts...?**

**A:** It depends on how you ask the question. Does a single DOT race tire cost less than single high-quality street tire ? Yes. But does the amount you spend in a year on tires decrease ? Maybe, maybe not. The DOT race tires do NOT last longer than street tires. I would probably just run street tires until such time you feel the need to get an extra set of wheels. This is a step that many people never take. You can have just about as much fun on street tires as you can R-compound tires, as long as everyone else in your class is similarly shod.

**Q: I have looked at the classification guide in Slipstream, but must admit I am not exactly sure of the ramifications of upgrading to DOT race tires.**

**A:** It would move you up one class from your base class (or current class). You would be competing with other people who had made some small changes to their cars and who are probably running R-compound tires. You might find yourself more competitive in your base class for a while, so I would leave things as they are for a few events till you get the feel of things.

**Q: I am not really interested in doing anything else beyond the tires (since I am going to them mainly for the economic benefits), but if I use them, will it dump me in a class with a bunch of folks that have many other modifications?**

**A:** Well, moving to class 7 is not a huge jump. Most people there have done very minor modifications - larger wheels and R-compound tires are the most common. Some have stiffer springs and maybe different sway bars.

**Q: What class does this put me in? "Base"?**

**A:** Yes, "Base" is the approximately the same as the "Production" classes in the PCRs. It's signified by the un-lettered classes, as in class 7. We are terminology-challenged on our classifications right now.

**Q: So I would be forced to compete with people that have overbore, etc?**

**A:** No - the "Base" classes are for cars with very minor changes. Any large performance enhancements would move you up into the higher classes, such as the "I" (improved) and "M" (modified) classes.

**Q: Any additional guidance/advice would be appreciated?**

**A:** If you want to improve your times, your best bet is seat time and instruction. If you want to save money, a good way is to get an extra set of wheels, some R-compound tires, and just swap wheels before the event. This is a HUGE pain, but might save wear and tear both ways - your R-compounds will last longer if not driven daily, and your street tires will last longer without being autocrossed.

But gauge your wear on your street tires - that might not be a decision you have to make for a while. And as you become a better driver, your tires last longer as well (see above point about seat time and instruction!).