

# Tips and Techniques for DE Participants

This collection of Drivers Education tips and advice is the result of a collaboration by the following PCA members: Ellen Beck (North Country), Bill Cline (Eastern Buckeye), Wil Ferch (Niagara), Bill Gregory (Connecticut Valley), David Kalokitis (Schattenbaum), Claire McConaha (Allegheny), John Mingst (Metro NY), and Rob Stoesser (Northeast).

## Before the track - preparation and what to take

### Tires

- Keep an eye on tire pressures. Pressures can vary by one pound for every 10 degrees in temperature.
- Check tires when they're cold! It is not uncommon for tires at drivers ed events to increase 5-10 lbs during the course of the day.
- While we are talking tires, when was the last time they were balanced? An unbalanced tire will lead to uneven tread wear, not to mention the hand message you will get by trying to hold on to your steering wheel.
- How old are your tires? Many tires have a build code that is three digits following the DOT mark. Look for this mark, it says "DOT" then three digits ex. "260" This means that this tire was manufactured during the 26th week of the year 2000. This is a great piece of knowledge when buying used tires, and the seller tells you that he just got them last year. A guideline is that tires, especially on the track, should not be used that are over 6 years old.
- If you are running street tires, add air to stiffen the tire and sidewall to provide better stability and less tire deformation.
- Learn to read your track tires. If the scrub marks fall short of the triangles around the tire, let out a little air. If the marks exceed the triangles, add some air.

### Lug nuts/bolts

- Always torque your lug nuts or bolts to recommended specifications, typically around 94 foot-pounds. This will keep you from over torquing the nuts. The last thing you ever want is to have a nut head separate from the flange portion. This can happen from a lug nut put on too tight or removing an alloy lug when hot. The other bonus to torquing the lug nuts is that you will prevent warping of the wheel on the hub. Advice for track use is to use the steel open head nuts and save the alloys for the street.

- Use steel lug bolts, not aluminum. Aluminum bolts stretch under multiple "on/off" cycles with the torque wrench. Just switch to steel bolts.

## Clothing

- Bring appropriate clothing no matter if the weather forecast says hot or not. Prepare for the worst. A cap is good together with sunglasses.
- Bring sunscreen, even in April and October!
- Don't wear Yellow or Red clothing while flagging, even if it's raining. This interferes with drivers who are staying alert to such colors.
- Sneakers are OK, however, avoid running or other sneakers with soles that extend beyond the shape of the foot. They can get in the way during quick foot movements while driving.

## Helmet

- Remember your helmet! A nomex sock is really good too. It helps to keep the inside of your helmet cleaner.
- "If you have a \$10 head, buy a \$10 helmet. "Personally, I attribute this quote to Joe "The Answer Grape" Reid of NNJR. I can picture him saying this over 20 years ago. But "truer" words have never been spoken. And buy the Snell SA rated (not M) version.
- Buy an intra-helmet communicator. You can expend so much energy just yelling back and forth with your instructor otherwise. You buy one, get it ready in the car, and all the instructor has to do is hop in when it is time to take a run! Many regional instructors have their own communicators already

## Tools/stuff to consider bringing to the track

- Hex/allen wrench set for 911 drivetrain allen bolts.
- Torque wrench for wheel lugs
- Tire gauge
- Small assortment of tools, flashlight
- Extra brakepads, especially if existing pads are approaching 50%
- [Old] 911 - extra oil pressure sensor, extra fan belt, extra DME relay for 1984-1989 911's
- Air pump. Easy to add a couple of pounds of air, and easy to transport. Many tracks have air, but if they don't or the track compressor is broken.
- Small jack, (factory or a small shop jack).
- Small piece of wood to place under jack, as some tracks have soft ground or grass.
- Shoe polish for numbers, if you don't have another solution.
- A folding chair if you like to sit.
- Workgloves or some hand cleaner and a rag.
- Camera, so you can brag when you get home.
- Extra brake fluid. May be necessary to bleed them at the event, if multiple days.
- Glass cleaner and paper-towels to clean windshield.
- Racing tape for headlights

- Extra engine oil
- If you have 7", 8", or 9" Fuchs wheels with rubber air valves, Porsche recommends the use of a valve stem support. These are available from Porsche, part number 911.361.561.01, for around \$4 each.
- ALWAYS place your tech-inspection form in the glove-compartment, or on the dash before leaving home. Driving from Lime Rock in Connecticut to Boston to pick it up is not FUN.
- Bring gloves. Consider disposable latex gloves (can contribute to marital harmony if you work on your Porsche at home)
- Bring or purchase food/drinks. You get dehydrated faster than you think.

## Tips

- Prepare for the inevitable. Sometime at a drivers ed event, your car may experience "technical difficulties". Your mission: fix it, even if only to drive it home. I find the systems you last repaired on the car to be the ones likely to fail. Why? You may have disturbed components in or near that system which were waiting to fail anyway. There are many things (spares and tools) you can bring to the track to increase your chance of success. If you change the cooling hoses on your 944, bring the old ones to the track. Duct tape, tie wraps, hose clamps bailing wire, electrical tape.....
- On 911's, check both throttle springs to ensure proper operation.
- If you ever work on your Porsche, proceed immediately to Sears and buy the tool that looks like a pen, which extends with a magnet on the end. You'll appreciate it when that bolt or nut drops out of reach.
- Buddy system: Find a partner that has a similar car and team up. No need for both of you to bring the same items. A complementary set of spares and tools will help both of you.
- Even a penny can wreck your day. No loose change in your Porsche, EVER. Imagine it is you against Lincoln, only the coin is wedged in your pedal cluster. It's your job to ultimately verify the safety of your vehicle.
- How old are your seatbelts?? PCA Club racing rules only allow harnesses 5 years old and younger. If you have an older car and run with stock belts, consider replacing them.
- At the track, don't park with the hand brake on. It will stick to the hot drum and you will be more than embarrassed, you will be immobile.
- Don't leave the plastic lock caps on lug nuts at the track. They will melt onto the lock. Just take the locks off before the day begins.
- Adjust the pedals so that the brakes are 1/2 "on" when the pedal is level with the throttle pedal at idle. With power brakes, this can take several adjustments (small increments) until you get it right. Do it at home some night two weeks before the event, test driving in between, until you get it right for perfect heel & toe downshifting.
- Just because your gas pedal is floored, you may not be getting 100% power! Using a broom handle or able assistant, make sure that your throttle pedal is held against the stop. Now check the throttle butterfly at the engine. Is it all of the way open? Probably not. You'll figure out how to adjust it - then test drive accordingly.
- Make sure your steering wheel is centered - if a tire loses air, you'll see a change in the steering wheel angle.

- If you need the tachometer to shift, rotate it in your 911/914 (pull out, turn, push in) so that you don't need to focus on the instrument. Move it so that at redline, you'll see the needle at vertical - without having to read the number.

## Numbers

- Easy numbers: Pre-cut 4x6" rectangles of white contact paper, keep in a sturdy envelope with scissors in your tool kit/box, and you can custom cut your numbers for each event. They peel and stick onto windows (and bodywork) easily and are both nicer looking and easier to remove than shoe polish. Double them up to cut two at a time, one for each side, for each number.
- Another way to prepare numbers, is to print them out on your computer printer with the digits 6"+ tall, and tape the sheet of paper to the inside quarter windows behind the driver.

## Other ways to prepare

- Autocross every chance you get. A race track is just a big autocross course. A \$20 autocross is the best education you can get. And screw it up on purpose! You won't really understand the limits until you cross them (is that why they call it auto-cross?)
- ALWAYS do your own inspection of the car before each track day. And look over your vehicle before each track session.
- Put your stuff in plastic bins not plastic bags. Bags can leak. A good piece of tarp can always come in handy.
- Remember to bring directions to the track and emergency phone numbers.
- Leave floor mats at home, as you're not going to a concours anyway. If you arrive at the track with them, take them out before tech line inspection.
- If you trailer your car, remember the KEY for the car.

## At the track

- Keep log book of my tire temperatures hot/cold/track etc. Will come in handy when testing new track or the conditions were extreme.
- Go for a ride with as many instructors as possible! Mostly in your type of car but also in other cars.
- Observe as many parts of the track as possible. If possible go on a track walk.
- Check your car's fluid levels before each run session. Lower your personal fluid levels before each run. (ie: use the toilet facilities)
- There's nothing worse than putting on a cold wet helmet on the 2nd morning of a two day D.E. At the end of the first always remember to take your Helmet, gloves, and shoes to the hotel and place them somewhere that will help the interior to dry out. Heating / Air conditioning units in the hotel room work well for this.
- Be observant and helpful in the paddock.
- When you flag, keep the flags unfurled. Also, don't let them blow in the wind. By all means, hold the flag in a stationary position to avoid it being confused for a waving flag; unless, of

course, that was the goal. A flag, blown to a position parallel to the ground, will confuse EVERYONE. No lazy flagging!

- Superb flagging in the rain, although a bit uncomfortable, may be more critical than during the dry as more drivers "experiment" with braking points and turn-in points. "Eternal vigilance is the price of event safety."
- Walk the track - it gives you insight into nuances such as camber, texture, and grip provided by previously laid down rubber. Also, you better understand run-off areas (although you won't need them). As in flying, always be aware of where you'd set down in an emergency - this approach works well at the track. Besides, who wouldn't benefit from a 2.5 mile walk, even if it is after the first day of an event?
- Ever try to change a tire in the dark? Try this old piloting trick - The Taped-up Flashlight Handle. As you generally need two hands to fly and navigate, pilots have learned to wrap several layers of electrical tape around the end of a mini-flashlite. Now you can, for as long as you need to, keep the flashlite safely clenched between your teeth. This makes changing a tire at night much easier as now you can see the lug bolts!
- Moving around in the cabin? Trying to brace yourself in your Porsche because the inertia reel belts don't hold you tight to the seat? Use the car everyday and rollbars, harnesses, trusses, and race seats aren't in your future? You need the metal clip that is used to hold the seatbelt tight for child seats! Use the same clip to hold your belt tight - you be winning autocrosses and driving better on the track, all for \$1.50!
- At the track, keep your gas tank at least 1/2 full. Start with a full tank. Don't interrupt your day (and concentration) by running it low. Starvation, vapor lock, missing a run group (worse yet - don't dare missing a worker assignment!) are steep prices to pay when the solution costs so little. And don't think that 6 lbs. of weight per gallon is going to make a big difference in lap times when you are just starting out.
- When putting on your harnesses, make sure your helmet and gloves are very close by before tightening, or you may find they are out of reach once you are strapped in. (The same goes for shutting the door.) The best approach is to buckle loosely, put on the helmet, then tighten.
- Tighten harnesses by buckling all 5 straps loosely, then tightening the lap belt first. It should be VERY snug across your hips before you tighten the shoulder straps. Make sure the sub strap is not too loose or too tight, preventing a firm and close fit of the lap belts on the hips. Be certain to adjust all clothing for comfort before this procedure.
- If using a stock seat belt, two techniques exist for ensuring a snug belt. 1) Pull the belt across just to the latch point, twist the belt buckle around clockwise twice, then buckle keeping as tight as possible. This will prevent the belt from loosening with time. If you have electric seats, buckle yourself in as snugly as possible, then adjust the seat slightly up and/or forward to firmly tighten the belt.
- 944's have a well-documented problem with oil starvation to the #2 rod bearing. It is not uncommon for a 944 to use well in excess of a quart of oil per day on the track. To avoid problems, keep your oil topped up at all times, and never ever let it get below a half a quart down while on the track. Some people recommend overfilling by a half a quart, which is good in theory, but results in wasteful blow-by, so keeping it full or just over is the best approach. A good tip is to open your hood after a hard session, which will allow cooling and also remind you to check the oil before your next run.
- A small stiff whisk broom can be used to easily brush out brake dust from the inside of track wheels at the end of the day. This is much faster and easier than washing wheels before

packing up, especially if you carry them inside the car. Garden/leaf sized trash bags are big enough for up to 16" wheels, or scoff tire bags from your local tire shop.

- Keep a notebook with your track/tool bag for recording track conditions, tire temps, tire rotations, etc for each event. It is very easy to forget the details over time, and a logbook is a useful tool.
- Remember to remove the covers of locking lug nuts before the event/going through tech. It is preferable to replace this type of lug nuts with standard lug nuts in any case.
- Make sure your radio is turned off before entering the track.
- Make sure your passing signals are crisp and clear, one point by for each car to pass. And lift on the throttle briefly to allow the cars you've signaled to pass, to pass.
- On your first laps each day at the track, use the first several laps to warm up your tires, your engine, and your focus.
- At drivers education events, keep your helmet visor on and down! Even if you wear glasses. Twice this writer has had "foreign objects" enter the cockpit - the first was a speck of sand which required removal by scalpel (this led to keeping the visor on and down). Second, a gumball left behind by NASCAR, and delivered to me by a passing 930, ricocheted off of my side mirror and thwacked my helmet visor! Don't risk your eyesight.
- Talk yourself through your laps - even out loud. Hit the key markers and call them out to yourself. Though learning, you may someday be the instructor and this will all pay off.
- Know when to commit to leaving the course. Best to learn this autocrossing. How many times have we seen a driver try and keep a car on the track when he could have safely just run on the grass at the "track out" point? Tugging on the wheel to keep the car on the tarmac will shoot you across the course, in the path of others! If you apexed early and predict that you will not stay on the pavement, consider the alternatives: maybe running wide onto the grass, parallel to the track, is best. All that gets bruised is your ego. Remember, this is one key reason why you want to walk the track before you drive it! Find these alternatives!
- Don't drive with your wallet in your hip pocket.
- Check your gauges on the pit straight or when possible. You're busy driving the car and can forget to check all gauges, especially the oil pressure and temperature.
- Listen to your instructor...carefully.
- Err toward late (vs. early) apexing, particularly when learning a new track.
- Concentrate on consistency and smoothness...not times. Jerking your Porsche can upset its balance.
- Brake strongly and modulate downwards. This means brake harder at first application, and while still braking, gradually ease up on the brakes until just before you turn-in. This is much easier on the brakes, and naturally much smoother before turn-in because the suspension is already unloaded.
- Use your cool-down lap to allow your engine and brakes cool down. Complete the lap at reduced speed, use your brakes as little as possible, and continue to drive the line. Keep concentrating!