

Novice Basics & Driving Information

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INTRODUCTION

Autocrossing is a safe, low-speed motorsport where drivers must negotiate a course marked by pylons with their cars. Cars are sent out one at a time with 20 seconds between cars for safety reasons. Top speed in autocross is typically no faster than speeds you would find on public roads, thus most cars only need working seat belts and drivers only need a helmet for safety. Courses are typically laid out in empty parking lots or air strips. Our courses are usually about a mile in length and take between 45 seconds and 90 seconds to negotiate. Courses contain a series of elements such as curves, corners, and slaloms that test the driver's skill and the car's agility. Cars are separated into classes based on Sports Car Club of America rules for national classes as well as California Sports Car Club supplemental regulations for local classes. Events are timed and the fastest time in the class wins.

Knowing WHAT you CAN do with what you HAVE will go a long way in your performance driving education. As many long-time drivers will attest: "We were never as fast as we thought we were when we first came out and autocrossed ANY car." Good driving basics are worth their weight in gold and the best way to learn them is through 'seat time.' Seat time can be done at practices, events, or even on the street in regular driving.

Concentrating on YOU as the driver is important early on in your development as a driver. Many novices in the first year or two of competition make the common mistake of over-prepping their car with too many vehicle modifications, easily outclassing their driving abilities. In Sports Car Club of America autocrossing, cars are organized into classes based on their modification level. The more mods you have, the more challenging (and expensive) the class your car belongs in. A thorough explanation of car classes is available on the SCCA website. That's not to say some mods wouldn't help, BUT again we want to concentrate on the driver, not the car.

Learn how to drive what you have first and have fun doing it!

ITEMS TO CONSIDER BEFORE AN AUTOCROSS EVENT

READING

Autocross Novice Handbook by Kate Hughes contains a lot of valuable information for first- and second-year novices not covered in this guide.

A good Flash-based introduction to autocrossing is available at Rocky Mountain Solo website.

Andy Hollis' Top Ten Autocross Tips may not make much sense without having done any autocross runs, but they are good review after you've done a few.

There are several books dedicated to autocrossing - three are still in print:

Secrets of Solo Racing: Expert Techniques for Autocrossing and Time Trials by Henry Watts (Paperback - Jan 1990)

Winning Autocross Techniques (Speed Secrets) by Ross Bentley and Per Schroeder (Paperback - Jan 10, 2009)

How to Autocross (Sadesign) by Andrew Howe (Paperback - Feb 15, 2009)

Winning Autocross Solo II Competition: The Art and the Science by Richard H. Turner and J.B. Miles (Paperback - 1977)

SCCA CLASSIFICATION

Check the Car Classification Rules in the Rule Book on the SCCA website and figure out what SCCA class your car belongs in.

NOVICE CLASS

You may wish to run in our Novice Class. The rules are in APPENDIX A in the CSCC Supplemental Regulations.

ITEMS FOR PERSONAL SAFETY, HEALTH, AND COMFORT

The following is a list of basic personal safety, health, and comfort items you may want to bring to events. This is not a comprehensive list and you may find you need items other than what is listed here.

Drinking Water

Bring water with you to drink. While you may not notice it due to the excitement of your autocross day, your body will easily become dehydrated, causing fatigue and other symptoms that can affect your performance. Also, no consumption of alcohol or illegal substances is allowed at our sites. Keep in mind there is little to no shade on our sites, so you WILL need to drink water, especially on warm, sunny Southern California days.

Breakfast, Lunch, and Snacks or Money to Purchase

Food is good for you. Don't forget to eat something to help provide you energy to get through the day. Do not count on there being food sold on-site, though we do occasionally have vendors.

Chair

Not mandatory, but it's nice to have a folding chair to sit down on instead of the pavement.

Portable Shade

Also not mandatory, but helpful for keeping the sun off you when you aren't working or running.

Sunscreen

Don't forget to protect your skin from the damaging rays of the sun!

First Aid Kit

Essential for treatment of any cuts, scrapes, burns, etc.

Hat

Big floppy hats are great for keeping the sun off you. A lot of drivers like wearing caps, too.

Sunglasses

A good pair of polarized sunglasses are a big benefit on any day, especially sunny days, but any pair is better than none to help protect your eyes and make it easier to see without having to squint. Yellow lenses are preferred because they assist with cloudy, dark, and evening events, but aren't necessary.

Neck Cooler Hand-Sanitizer or Hand-wipes

Good to have because there usually isn't any way of properly washing your hands while on-site.

EQUIPMENT

The following is a list of basic equipment you may want to have in an autocross toolbox you bring to events. Some things, like a helmet, are mandatory, others, like keeping a log, are not. It is recommended you buy what you need when you need instead of buying everything at once. This is not a comprehensive list and you may find you need equipment other than what is listed here.

Tool Box

A box to hold your tools. Some drivers like having a separate box with tools for autocrossing only so they don't have to carry it in their cars all the time. Tool boxes may be obtained anywhere hardware is sold.

Helmet

A proper fitting helmet with at least a Snell 2000 or M2000 rating is required. The helmet can be SA, M or K rated. An open-face vs. a closed-face helmet is a driver preference. Either way, visibility is critical, but an open-face helmet allows for more viewing area than a closed one. Some people like wearing sunglasses with their helmet; this is fine too.

Tire Pressure Gauge

A good, easy-to-read, accurate tire pressure gauge is a valuable tool. Be sure to choose a gauge with a workable range for your tires. Example: if you plan on running your tires at 50 PSI and your gauge reads up to at least 100 PSI, otherwise the distance between each pound markers will be small and hard to read. If you purchase a gauge that has a maximum pressure of 60 PSI, the pound markers will be further apart and easier for you to read slight pressure changes between lines as you bleed off or increase pressures. TIP: Try not to let any air escape while pushing the gauge onto the valve stem as this will affect your readings.

Chalk

Used for marking tire wall sides to see how much the tires are rolling over when cornering. Mainly used to see how much air you need to add/remove to your tires.

Pyrometer

For measuring the temperature of your tires across the width of the tread. Great for finding out where your tires are heating up the most/least. You can make adjustments to your car's suspension set up based on these measurements.

Portable Air Tank/Compressor

It's nice to have your own air tank/compressor rather than filling up the tires beforehand at the local gas station or borrowing someone else's tank/compressor. A portable fully charged air tank will save you time and potential embarrassment in the pits and grid. Sometimes vehicle prep-time can be a critical factor in making it to the pre-grid lanes before it closes.

Portable Water Sprayer

Good for keeping the tires cool between runs. Essential during the SoCal summers, especially with R-compound tires. You don't need anything fancy here as you can pick one up at a hardware or home improvement store for less than \$20.

Lug Wrench / Breaker Bar

For removal of lug nuts on automobile wheels.

Torque Wrench

Great for making sure your car's lugnuts are tightened to the correct torque specifications for your vehicle. There are two basic types — beam and click. Beam torque wrenches are generally cheaper in cost, though there are cheap clicker ones, too. Both types will get the job done.

Sturdy Floor Jack

Faster and safer than the jacks that are standard equipment. Find one that's light to carry, but strong enough to lift your vehicle. Do make sure the jack is in proper working order before using it. Do find out the correct jacking points of your car before jacking it up as you don't want to damage your car because of an incorrectly placed jack.

Jack Stands

If you plan on getting under your vehicle to make any adjustments/repairs while at one of our events, you are required to put your car on jack stands for your own safety. Do not rely on your jack to hold up your car while you are under it. It is meant for lifting only. Find the correct jack stand points of your car before jacking it up so you don't damage your car because of an incorrectly placed jack stand.

Cleaning 'Tools'

Paper Towels, Glass Cleaner, Terry Towels.

Fluids

Extra engine oil. 50/50 Coolant/Water Mixture. Other fluids including brake, power steering and auto/transmission.

Tape

Electrical Tape. Blue Painter's Tape. Duct Tape.

Work Gloves

Great for keeping your hands clean (and help prevent minor cuts and scrapes) while working on your car. Also good for grabbing cones while working course or helping clean up at the end of the day.

Shoes

Many drivers prefer to wear small-heeled, tight-fitting, flexible-soled racing shoes. The flexible sole allows for better pedal feel, this is highly recommended, but not mandatory.

Driver's Gloves

A good pair of driving gloves may assist with tactile feel depending on what style steering wheel you have. Again, use personal preference here as gloves are not mandatory.

Safety Belts

Standard modern seatbelts included will work fine. Four- and five-point seatbelts will secure the driver better. Check your car's classification for seatbelt modifications and possible class changes that may result from them.

Traffic Cones to mark parking space

Great for marking your territory.

Video Camera and Mount

A great way to see whether or not you are getting close to those cones — also good for seeing how good/bad your racing line is. Make sure the camera is mounted securely to your car and tethered, if necessary, BEFORE you go to tech.

GPS/Data Acquisition

As you become more familiar with autocrossing, you may find data acquisition a worthwhile tool for becoming a better autocrosser as it will allow you to analyze your speed, position, throttle/brake application, lateral G's, etc. on the course you are running.

Driver's Logs

CLIPBOARD & PEN: A clipboard provides a place to write and keep any notes you take from flying away. Keep a box of pens in your autocross toolbox.

LOGBOOK: At the end of each race day, write notes of the day's activity in a logbook, which could be as simple as a spiral-bound notebook or a document, such as a text or spreadsheet file, on your computer. This is a great tool to review your day later and can help you plan a strategy for the next race. Having the ability to review any given race day's history can prove to be valuable in making informed decisions about your vehicle set up and driving skills.

SCCA Rules Book

Rule book for SCCA National Tour, ProSolo, and Divisional Events outlining the structure of the SCCA, Solo rules, and car classification rules. Available on-line on the SCCA website or you can purchase a printed book through the website.

JOIN AND PRE-REGISTER

Below are the basics for online registration for our events. The latest version of this document can be found in the Events section of the solo2 forums.

Q: Where can I find a schedule of events?

A: The official California Sports Car Club calendar contains a schedule of our upcoming events and can be found on the Calendar.

Q: Where are the event fliers?

A: Event fliers contain information on an event including where, when, how much it will cost, and any other information the Event Masters wish to convey. There are typically 2 places where our event fliers show up. One is in the Calendar page on our website. The other is within the online registration site. A link to the online registration site will be included in a post in the "Events" forum.

Q: Where can I find the Run/Work order?

A: The Run/Work order is a schedule of when you will be running your car and when you will be doing your work assignment during Event days. The Run/Work order for practices is usually based on a color system, while events are based on your car's SCCA or CSCC class. A link to the Run/Work order will be included in the event specific post on these forums. It will also be included in the online registration site flyer. Look for the phrase: [CLICK HERE FOR RUN/WORK ORDER](#)

Q: How do I specify that I want a Trophy or Solo\$?

A: If you win or place high enough to get a 'Trophy' in your class (a T will be placed by your position in the posted results), you get the choice of either a Trophy or Solo Bucks discount on your next autocross. For MotorsportReg: This will be a question you will have to answer before you will be able to register.

Q: What is the difference between a TO run, X-run, and Fun Run?

A: Time Only runs, X-runs and Fun Runs are time-only, non-competition runs where penalties don't count and passengers are allowed, just like practices. Time Only and X-runs may be available for purchase for the day's event and may be taken any time after your competition runs. Fun Runs occur at the end of an event day, time permitting, and are typically \$1 or \$2 each. Sometimes, Fun Runs are free, but only if you stay and help clean up, which is highly encouraged whether you run Fun Runs or not.

For Time Only and X-Runs, you get the same number of runs as you do event runs that day. If you are not taking class runs, your first set of runs would be in TO (Time Only) Class, which is full price and requires work. X-Runs (eXtra runs) are for people who would like run in addition to Class or TO runs and do not require work. We do ask, however, if we are short workers and you hear a call for volunteers that you consider being the first to volunteer. The number of Fun Runs at the end of the day is contingent upon how much time is available and any other limits set by the Event Master.

Q: I am not a points card holder with CSCC. What should I put for a number when I am registering?

A: When doing on-line registration, please DO NOT just pick any number you feel like! If you do not have a points card with CSCC we have reserved the numbers 600 to 699 for you to use. Please browse the registration list and see what 600 numbers have been chosen by other people then pick one that is still available.

Q. What is a SoCal Solo points card?

A. A points card provides a number of benefits:

- The ability to accumulate points toward the year-end championship competition

- A “permanent” car number for the year (no taping 6xx numbers to your paint)
- Guaranteed entry into Championships (for those times we run out of 6xx numbers reserved for non-points card holders)
- Priority entry into some practices. This is up to the club hosting the practice.

Q. How do I purchase a points card?

A. A points card may be obtained in advance of a practice or event on our website.

Q. How long is a SoCal Solo points card valid?

A.

- A points card is valid from date purchased until end of calendar year it was purchased.

If you are a NEW member AND it is purchased after the last championship event in September or after September 30th whichever comes first, it will be valid until the end of the following calendar year it was purchased (i.e. 10/2007 - 12/2008). Thus you get 3 months free by buying early.

- A points card expires at the end of the year but subsequently put ON HOLD until the next renewal date starts (1st of October). The member has until 2 weeks after that to renew it. If at that time the card is not renewed, then the status of the card becomes AVAILABLE to the public.

Q. Can I reserve a SoCal Solo points card number before paying?

A. Points card numbers are NOT put on hold/reserve by request for anyone.

Q. Do I need to join SCCA to get a points card?

A. Technically no, but you will NOT be able to compete in our events since SCCA membership is required. SCCA memberships may be purchased in advance on the SCCA website.

Q. Do SCCA members need a points card to compete for points?

A. Yes. While an SCCA membership will provide you some of the benefits of a SoCal Solo points card, it will not allow you to compete for points. Points are tracked by car number, so without the permanent number provided by the points card, you will not be able to compete for points.

Q. Do I have to join a club to get a points card?

A. Yes. CSCC is organized as a conglomeration of clubs and in order to be a CSCC member, you must be a member of one of the clubs that comprises the organization. There are many clubs to choose from, from marquee clubs to nation-wide clubs, and many of them do not have any extra dues.

Q. Which club should I join?

A. That is a decision you’ll have to make for yourself. Read the description of each club or you can e-mail the club rep found on the Club Listings.

Q. When will I receive my points card?

A. Points cards are no longer mailed out as they are not required at registration (only driver’s license and SCCA membership card. As long you are registered online, your name will appear on the list.

Q: How do I register for an event?

A. As of the July 2010 event, we have switched to using the motorsportreg system.

This is where you can find the events that are open for online registration. Simply click on the Register button and follow the directions.

Q: Can I pay with Solo\$ online?

A. We currently do not have a system in place to allow you to pay before the event using Solo\$. You will have to pay on the day of the event.

Q: Where can I find Event Results?

A. Results can be found here in the Event Results part of our forum.

Q: Where can I find year end points?

A. Year end points are posted on the solo2.com site, using the "Current Years Events and Results" link in the left navigation tool bar. Or through this message board in the Event Results part of our forum.

ARRIVE AT THE SITE

Best time to arrive at the site, especially if you run in the morning run/work groups, is right at 7 am because 1) it's easy to find a parking spot close to the grid so you don't have to do too much walking and 2) you will have plenty of time to register and walk the course at least twice. Don't forget to bring your driver's license and SCCA card if you have one.

For the afternoon run work/groups, the best time to arrive is before 11 am. However, lunch is usually going to be limited to less than an hour, so be sure you allow yourself enough time to register, tech, walk the course, and eat. One advantage to running in the afternoon is you can arrive at 7 am and walk the course, though this obviously makes your day longer and you do have to get up earlier than you needed.

If you are not currently an SCCA member, you may sign up for a weekend SCCA membership — details available at registration. You will have to sign one or two waivers at the 'gate' depending on the venue. Minors (those under the age of 18) must have a SCCA minor waiver signed by both parents/guardians — these signatures must be obtained in the presence of either a notary or an SCCA member.

FIND A PARKING SPACE

Nothing fancy here. Just enough space for your car and a place to empty your belongings from your car. Some people like marking their space with small cones, though it's not necessary. For you and your car's safety, make sure you park only in the designated area, also known as the paddock. If you park anywhere beyond the line of cones marking the boundary between the paddock and the course, you will be asked to move.

REGISTER

Register at the Registration Desk, usually under a canopy near the motorhome, and register to run. At the Registration desk, there will be two lines: one for pre-paid entries and one for on-site registration. It is required that you have an SCCA membership and valid driver's license if you want to run. If you are not an SCCA member, there are weekend and annual memberships available in a separate line. Do this before registering. After you have your SCCA membership, go to the registration line where you will pay your entry fee. Entry fee can be paid with either cash or check.

If you qualify as a Novice under our supplemental regulations, you may want to register as a Novice. The Novice class allows CSCC points card holders a chance to compete for the year-end 'Rookie of the Year' jacket - only your best six events count. You will be required to have the NOV class letters in addition to your car's numbers and class letters on your car.

After you have paid your required fees, you will be given a driver's wristband. If you do not have a number, a 6xx series number will be assigned to you and you will be given a paper number to attach to the side of your car. If you would like to have a regular number and to qualify for year-end points, you will have to pay the annual local membership fee and pick a local club. This fee is in addition to the SCCA member fee.

FIND OUT WHEN YOU RUN/WORK

There should be a sheet of paper on the Registration Desk or the motorhome indicating the run/work groups. If you don't see it, ask for one. It is your responsibility to know when you run/work and that you are on time for both! As this is a work/run event, everyone who runs must work. If you do not show up for work, you will be marked down on our sign-up sheets with a DNW, won't get to run, and may be banned from running with us in future events. If you do not show up for your runs during your scheduled run group, then you don't get to run.

SIGN UP FOR WORK

Plenty of different work positions to choose from — but most likely you will be working course as that's where almost all novices are sent as it is one of the easiest positions to work. It is also one of the most dangerous, so please read the section on worker responsibilities and safety later in this guide.

The following is a list of some of the worker positions available. However, as a novice you will most likely be put on course as a course worker. Please go over the section on worker safety:

- **Course Worker**
Picks up cones, red flags cars in case of an incident or safety issue, watches for penalties, reports penalties to radio person.
- **Radio**
Records penalties and car numbers and class letters on clipboard.
Communicates penalties, course incidents and safety issues to master radio.
- **Timing Slips**
Hands out timing slips to drivers as they complete their runs.
- **Starter**
Sends cars on course by waving green flag or signaling, spaces cars properly according to their skill level and any directive from the Event Master.
- **Grid**
Controls flow of cars from grid to starting line, marks off runs on tech stickers.
- **Master Radio**
Writes down penalties from radios on course. Communicates with course radios to let them know of any safety issues, car number issues, and directives from the Event Master.
- **Computer**
Records car number, class letters, lap time, and penalties into computer. Times are automatically brought into computer, but must match car number. Must keep precise track of order of start and finish of drivers to ensure accurate recording.
- **Timer**
Makes sure the number of cars on course corresponds with that of the timer. Also, makes sure the time recorded matches the car finishing. Responsible for restarting the start or finish times if a car does not finish due to a problem or if a course worker walks or debris goes through lights.
- **Time Recorder**
Manually records with pen the car number, class letters, lap time, and penalties on to timing sheets. Must keep precise track of order of start and order of finish of drivers. Must include timing log from printer onto timing sheets.
- **Announcer**
Talks into microphone and over loudspeakers about cars, drivers, times, position of drivers in class based on a computer display, and both general and safety announcements.

PREP AND EMPTY CAR

Once you have registered, go back to your car and remove any loose items from the interior and trunk. Basically, anything that can fly around or roll around must be taken out. Remove the spare tire and any tools. Take care to remove items from any storage bins, especially ones that are overstuffed. You DO NOT want these items flying or rolling around the inside of your car while autocrossing. In addition to being distracting, you don't want any of these objects hitting you or getting stuck underneath any of the pedals.

Make sure you have the correct class letters and numbers on your car BEFORE you go to tech. You can find out what class your car belongs in by looking at the SCCA rule book, which is available online on the SCCA website. Also, if you are running in our Novice class, please remember to put NOV on the side of your car in addition to the car number and class letters.

Place your numbers and class letters on the side of the car, not on the windows. The driver/car number must be a minimum 8" high while the class letters and numbers must be 4" high. Check the SCCA rules for any other requirements. During the course of the day, you will see a lot of drivers using either vinyl or magnetic numbers and letters. When you become a member of our club, you will have a permanent number to place on the side of the car, so it would make sense for them to have vinyls and magnets, which you can purchase either online or through a local vendor. Otherwise, as stated previously, you'll have a 6xx number, which changes from event to event.

Also, we strongly stress avoiding using tape for your numbers and class letters. If this is your first time, we usually let it slide with a warning and maybe some light heckling. Also, do not use shoe polish to write the numbers and letters on windows. It is required that class numbers and letters are on the side of the car. It's just easier for workers both in the motorhome and on course to identify your car when you've got printed numbers and letters.

It's a good idea at this point to check to make sure the battery is tied down, there are no leaks, and that your car's lugnuts are tightened properly and the wheels are not loose.

TECH THE CAR

Take the car to tech to have it checked for safety. Don't forget to bring your helmet as that will be checked as well. It is your responsibility to make sure your car is in proper working order before going to tech. Make sure your car's brakes, throttle-return spring and seat belts are in good working order. All lug nuts must be present and tight, wheel bearings in good condition and the battery must be securely fastened. The car may not leak any fluids. The tires should have minimum tread depth unless you're running a class that allows slicks. All loose items must be removed from the interior and trunk.

After your car and helmet have passed tech, you will be given a tech sticker to place on your windshield, which is typically placed on the upper right hand corner of the windshield. This will be used by the grid person to mark off your runs.

If you get to the site before the event starts or during lunch, you will have the opportunity to walk the course. Walk as many times as you can/need, though most drivers will try to do at least two or three. DO attend the novice course walk with an experienced competitor — OR find an experienced competitor with whom to walk.

The course walk is where you will plan your method of driving the course during your runs. This is the only chance you get to see the course before you drive, so it is critical you pay attention to detail here and, most of all, remember it later as you drive it. Walk the course as many times as you can to get a good mental imprint of it. After walking the course, try visualizing yourself driving your car on the course, before you run, and in-between runs. If there is a novice course walk, take it! Taking notes from an experienced competitor will help you greatly.

- Identify where the starting line and start timing lights are.
- Walk in the line you plan to run. This allows you to have a good, general idea where you will be placing the car on course.
- Occasionally kneel down to see what the course might look like in your car. What looks clear while standing may be near impossible to see when in the driver's seat. Identify any challenging parts of the course during the course walk so you won't be surprised during your runs.
- Look at least one turn ahead. Two or three if you can. When looking ahead, do not look AT the cones — look beyond them for your corner exit. If possible, pick an object (not a cone) in your line of sight so you can remember where to look when you reach that point during your runs.
- Identify gates, slaloms, wall-loms, lane changes, and pointer cones and make a plan on how to approach and drive through each element, remembering to link each element mentally with the racing line you plan to run. A gate is two sets of two cones that you drive through. A slalom is a straight line of cones that you weave the car through in a zig-zag motion. A wall-lom is a slalom, but with a wall of cones instead of single cones you weave the car through.
- For each element, identify the entrance, the apex (middle peak of the curve), and the exit. Multiple turns linked together will require some thought and planning on where to place the car and when to brake and accelerate. Try to plan the tightest, fastest line around the course you and your car are capable of, while staying as close to the cones as you can.
- Plan on driving AROUND the apex cones using arcs, not directly at them with straight lines.
- Pay attention to pointer cones and where you will be placing your car in relation to them. In slaloms, check the distance between each cone to see if the cones are evenly spaced or vary in distance. Try to make a mental note of this as you visualize the course mentally later.
- Figure out where you will be applying the gas, the brakes, and any shifting points.
- Check the surface. Is the surface grippy asphalt? Loose asphalt? Grainy concrete? Cold? Hot? Wet? Bumpy? Make sure the line you pick will work for your car on that surface and isn't one that will put you in the 'marbles.' Marbles are dirt, dust, and debris that will cause your car to lose grip if you drive on them and you could lose control of the car.
- Watch for on-camber or off-camber turns. On-camber turns will be banked to the inside of the curve, while off-camber ones are banked to the outside.
- Identify whether you will be going uphill or downhill.
- Identify the finish, where the timing slip chair is for you to stop, and how to get back to grid.

Before it becomes time for you to run, move your car to grid when your run group is called. Don't forget to bring your tire pressure gauge, water sprayer, drinking water, hat, sunglasses, or anything else you might need during your runs. DO NOT warm your tires up by doing peel-outs, donuts or squirreling before you bring the car to grid.

As a precaution, do a safety check before you take your car to grid.

Check lug nuts and wheel bearings

These should have been checked at tech, but it doesn't hurt to check again before you run. Just make sure everything has been tightened down properly and nothing loose.

Check Tire pressures and tread

Racing on a set of good tires is always important. Make sure your tires are not showing any cords. Setting the tires to proper inflation is very critical too. Most street-driven tires will allow an 8-12 PSI increase without damaging the tire. The pressure increase will depend on the tire design, rubber compound, and driving style. Work with your team or a seasoned veteran on how to properly analyze your tire pressure after a run. NOTE: As a tire gets warmed up on a race course, the air pressure will increase slightly, sometimes more than you'd think. It is a good idea to monitor and adjust pressures after each run.

Check fluids

Double check to make sure there are no leaks and that you have enough fluid everywhere needed.

Clean windows — inside and out

Nothing like having that splattered bug on your windshield distract you while you look for that next apex! Clean those windows before you head out on course.

No loose items — check trunk and under seats!

You should have done this already before taking the car to tech. You don't want anything loose rolling around that could get stuck under your brake or gas pedals while autocrossing. Not fun.

Removing distractions

Those fuzzy dice hanging from the rear-view mirror? Not a good idea while autocrossing. Same goes for that bobble head on the dash and those fuzzy animals in the rear deck and anything else that will detract you from enjoying the course — and that includes your cell phone!

DRIVING TO GRID / IN GRID

- Speed limit in the paddock and grid is 5 mph — watch out for children, spectators and other cars
- Don't leave your car in case you have to move it
- Watch for and abide by instructions given by officials

TIME TO DRIVE THE COURSE

A run is the same thing as a lap around the course. In a championship, you get three (sometimes four) runs on a course with your best lap time counting toward your place in class.

When running, do not be afraid to ask (the grid person, motorhome, novice coordinator, or event chair) for an instructor. If the instructor drives your car, it will NOT count as one of your championship runs. The instructor may ride with you on all of your runs, but I recommend doing the last one on your own. You will get more out of your experience if you are just starting to autocross! We have plenty of national level competitors in our region who are more than happy to help you become a better autocrosser!

Having your body and mind ready to race is just as important as having your car ready to race. These simple ideas will help in big ways.

A few things to check before you drive:

- No distractions — Focus is the key. Turn off the radio. All of your attention must be focused on the task at hand. This will help you relax. Even the most seasoned veteran gets the butterflies as they approach the starting line; go ahead and ask anyone, just not when they are getting ready to race.
- Check pockets — Make sure those pockets are empty as anything in the pockets could distract you.
- Use restroom — Relieving yourself before your run helps with your concentration as it is one less thing to worry about. Think of it as a weight reduction tool as well.
- Beware of loose clothing and jewelry — This can be both a safety hazard and distraction. So, make sure you take off any jewelry that could be a problem and make sure you don't wear that shirt that's two sizes too big.
- Beware wide, thick-soled shoes. Use narrow, thin-soled shoes or driving shoes. No loose laces.
- Put visors up and ensure they are secured.
- Move rear-view mirror up and out of the way. It obstructs your vision. Turn away side view mirrors. Turning away the side mirrors means you won't be looking back to make sure you didn't knock down that last cone. Besides, you should be looking ahead anyway.
- Assure headroom. You may need to remove Targa/T-Tops or put down convertible top to make room for helmet.
- Make sure your helmet is on and chin strap secure. Although the starter and grid person are supposed to make sure you have your helmet on, your personal safety is still your responsibility. So, put on that helmet and make sure that chin strap is snug enough to keep that helmet from moving around.
- Turn off any traction or stability controls, if you can — a lot of novices feel these need to stay on during their runs. While these driver aids are good for the street, they get in your way while autocrossing because they will slow you down. Also, you will learn more quickly about both the car and your driving with these aids off.

SEATING POSITION

- Sit enough forward to have a bend in your knees (you don't need to stretch or slump to reach the pedals)
- Sit upright
- 90-120 degree bend in elbows (wrists rest on top of steering wheel)
- Seat belt on, tight and locked, if possible. A secure seat is critical. You need to feel 'through the seat of your pants.' You can't focus and drive well if you are sliding around.

DRIVING POSTURE AND POSITION

- Sit in an upright position, not a reclined long distance freeway type driving position. Arms need to be free from any obstacles close to you. Arms and elbows should be as close to perpendicular to the steering wheel as possible and, of course, comfortable for you.
- Grip on Steering Wheel
- Hands at 10 and 2 o'clock or 9 and 3 o'clock
- Most people will agree the basic "10- and 2-o'clock" position is considered optimum for vehicle control. "9- and 3-o'clock" isn't bad either.

DRIVING

LOOK AHEAD

Try to look at least one turn ahead of where you are. The best drivers look at least two to three turns ahead. The farther you look ahead, the faster you will be able to go. Also, do not let your eyes lock onto a cone or stare blankly ahead. Scan forward and back, left and right. Don't forget to use your side windows to look ahead for 180 degree turns. Don't be afraid to look around any obstructions, like the A-pillar, in your car, but please keep your limbs inside the car!

SMOOTH + FAST + PRECISE = QUICK:

Drive as SMOOTH as possible. All of your inputs - steering, braking, and accelerating - should be smooth. Any sudden inputs will upset the car by suddenly transferring weight, which can result in losing grip or even a spin. Keep the vehicle moving as FAST as it can without losing traction. Apply the brakes easily and only when necessary AND as little as possible. Stay as close to the cones as possible. The more precise your car placement is, the lower your times. These things will help you become QUICK through the lights.

Autocross is a Speed, Control, Time and Traction type of event. If your tires are skidding you have no Traction and you are gaining Time (this is bad you want to be losing time), scrubbing off Speed (necessary for a quick time), and most likely out of Control. Try slowing down, hitting your braking zones, using better apexes, and being smoother through the turns with little noise from the tires. Think of there being a 1/2 full glass of water on the dashboard you're trying not to spill while trying to drive as fast as you can and you get the idea.

KEEP GRIP LIGHT

- Relax those hands. You will find steering the car MUCH easier.
- Don't grip with your palm up/on the inside of the steering wheel. Your palms should always contact the outside of the wheel
- Don't get crossed up — Instructors will show you how to properly shuffle steer. If not, ask them.
- Having the ability to quickly pull down and hold a steering wheel setting without letting the wheel go and then steering the wheel back to "straight-forward" is very

important, this is called “winding and unwinding.” A common mistake is to release your grip from the wheel, allowing the wheel to “snap” back to center; this IS NOT good for performance driving as you want to stay in control 100% of the time.

- TIP: Place a piece of colored tape on the steering wheel to indicate “straight-forward” located at 12 o’clock as the car is perfectly straight. This is assuming your car’s front wheels are aligned so that when they are pointing straight ahead, your steering wheel is perfectly centered.

FULL THROTTLE

Put the gas pedal all the way down at every opportunity, working within the limits of the car’s suspension and tires. Be SMOOTH when applying the throttle. Do NOT coast. You are either accelerating or braking.

SHIFTING

If you drive a manual, ONLY touch the shift knob when you need to shift. Always keep BOTH hands on the steering wheel as much as possible and remember the ten and two o’clock positions. This will assist with vehicle control and a safe “in control” feeling.

BRAKE EARLY

It’s better to brake early before a turn to give you some margin for error as you can apply more brakes or add more gas if you need. Brake too late and the only thing you can do is wait for the tires to stop squealing as you slide past your racing line in the corner. Braking too late or not at all is a common Novice mistake. Remember: ‘Go slow to go fast.’

BRAKE STRAIGHT

Maximize your car’s braking power by braking SMOOTHLY but FIRMLY in a straight line. Braking with the wheels turned can lead to a spin. Remember ‘when in spin, both feet in’ (brake and clutch with manual transmission cars - brake only with automatic transmission cars).

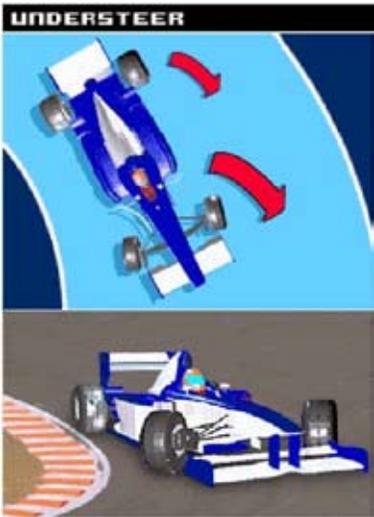
URNS

Remember: Slow In, Fast Out. Brake before the turn to both settle the car and put the weight on the front wheels to help turn-in. Then accelerate through the corner. Again, keep your braking, steering, and throttle inputs SMOOTH - use shuffle steer rather than hand-over-hand steering. Basically, if the turn goes left, enter it from the right. If the turn goes right, enter it from the left. A sequence of multiple turns may require different entry and exit points for each turn and you may end up in the middle of the course as a result. Do not be afraid to make adjustments to your racing line with each successive run. As you become more experienced, you will learn what approaches work best on each turn on the course for obtaining a fast time.

LISTEN TO THE TIRES

Tires play an important roll in any driving event. The louder the tires are squealing, the more you are losing grip. Slow down by quickly but smoothly easing off the gas. Remember the gas pedal is not an on-off switch. It is an analog dial with many settings. While in a turn, modulating the throttle between full-on or full-off will help keep the car from going off the racing line. When in a turn, quick and smooth application of the throttle is best.

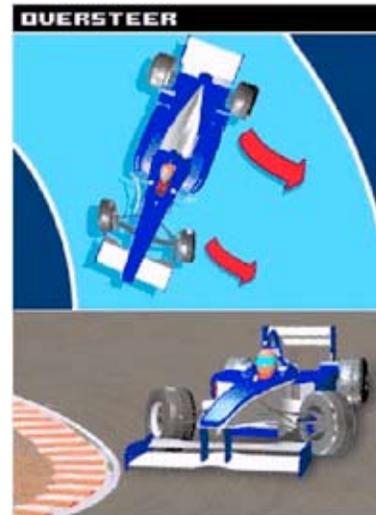
The tires are one of the vehicle’s primary communication devices with the race/ road surface. In autocross, due to the extreme nature of vehicle movement, it is recommended to increase tire pressure to lessen “side- wall flex” for a more positive road feel to the driver. You can check how much your tires are rolling over by marking the sidewalls with chalk. Side-wall flex or “roll” is evident by the sluggish feel of the tires during a turn; typically this is accompanied with a lot of “tire squeal.” Most notable will be the front end’s “push” or understeering of the vehicle. Get to know your tires. Ask around the pits about who is using which tire and why they like them. A wealth of knowledge is at your fingertips. Just ask, we are a bunch of friendly people.



Understeer, often called “plowing” or “pushing,” is when the vehicle continues straight forward and does not go where you point it because the vehicle’s weight and momentum forces the car straight during a turn i.e. the front tires HAVE NO GRIP. Also, a locked up, non-turning or skidding FRONT tire(s) DOES NOT STEER, just like in understeering. If you overdrive a corner, apply the brakes as necessary, try to avoid a skid, and, remember, skidding equals no steering. Use the brakes only as necessary to slow the vehicle for a turn.

Oversteering often called “sliding”, also known as DRIFTING, is when the rear tires lose their GRIP or traction and the rear of the car tries to come around toward the front of

the car. Just like in drivers ed class, the way to correct this situation is to turn into the skid. Oversteering CAN be a good thing, to a degree, because it has the tendency to “rotate” the car around a turn quicker. With time and practice you may be able to master this art form. Please DON’T try to impress yourself, the crowd, or your friends by driving out of control.



TIGHT TO APEX AND USE THE ENTIRE COURSE

Get as tight as you can to your apexes, which you hopefully identified during your course walk(s). Maximize your entry and exit points by getting as close as you can to them as this lessens the amount of distance you drive on course. For the most part, you should be on one side of course or the other. You should not be driving down the middle of the course, though there are exceptions. The better you position your car closer to the cones, the lower your times. Driving fast without using the entire course will yield a slow time.

WHEN IN SPIN...

If you find the car spinning, remember ‘WHEN IN SPIN, BOTH FEET IN.’ By that, we mean do NOT try to save the car when you start to lose control. Also, do NOT try to continue driving off course after you spin as you could endanger yourself and any others on course. When in a spin, put one foot on the clutch (if you have one), and one on the brake and push down both at the same time to bring the car to a complete stop. If you have an automatic, just push the brake all the way down to bring your car to a complete stop. When you have stopped, calmly, but quickly, get back on course.

IF YOU ARE LOST ON COURSE...

Hopefully, this doesn’t happen to you because you got an instructor for your first time out. Otherwise, remain calm and SLOW DOWN so you can find your way around. Course workers can help you out by telling you where to go. DO ask for an instructor when you get back to grid to help you out.

THE CHALLENGE:

Newton once said “A body in motion tends to stay in motion.” Here’s how to apply that to our sport: I bet you can get a quicker time by being conservative with your speed and not driving super fast or over your ability. Try driving at a somewhat fast but comfortable pace at a controlled speed while being very attentive to the tire noise you are making; concentrate on not skidding and using the brakes as little as possible to keep the car moving and see what happens.

AFTER YOUR RUN

COOL DOWN

Often at the end of a run, drivers, especially new ones, will have the adrenalin still pumping and forget to slow down after the finish lights and/or the checkered flag. Once finished, regain composure and stop for the person at your driver's door who will hand you a time slip. Drive slowly back to grid or, if you have finished your runs, your parking spot in the paddock and take the next few minutes to calm down. If going back to grid, get your car back into the same line as where you started; maybe take a drink of water too as you check your tire temps and pressures. It is a good idea to have some friends watch your runs and give you feedback from their vantage points.

THINK ABOUT YOUR RUN

Congratulations, you have completed an autocross run! After you have completed a run, sit down, take a deep breath, close your eyes, and think about it. While it is easy to dwell on any mistakes you have made, concentrate on how and where you can improve your run - if you had an instructor ride with you, ask them where you can improve. Think about where you can use less braking or be more aggressive on the gas.

A video camera is a great learning tool, as is data acquisition. If you have recorded video, go over the video. If you have acquired data through data acquisition hardware, go over the data. If you have none of those, run the course through your head as if you were driving it. You can do this either between runs or after you are finished. If you can, try to just make ONE correction on course per run.

HYDRATE

Drink a good amount of water before each race and even between runs. This will keep the body from "running low" which can decrease mental clarity and reaction times. You may keep the water bottle in the grid line or in a friend's hand, the last thing you want is a bottle rolling around under your feet affecting your pedal usage and stealing your concentration.

WORK ASSIGNMENT

CHECKING IN FOR WORK

When the announcement is made for you to work, check in with the worker chief — they're usually the one with the clipboard near the motorhome — and report to your work station. If you are working course, don't forget to bring a fresh bottle of water — work gloves would be good, too. DO show up for work. Not showing up for work will have you marked down as a DNW and is grounds for being banned from future events.

WORKING COURSE — RESPONSIBILITIES AND SAFETY ISSUES

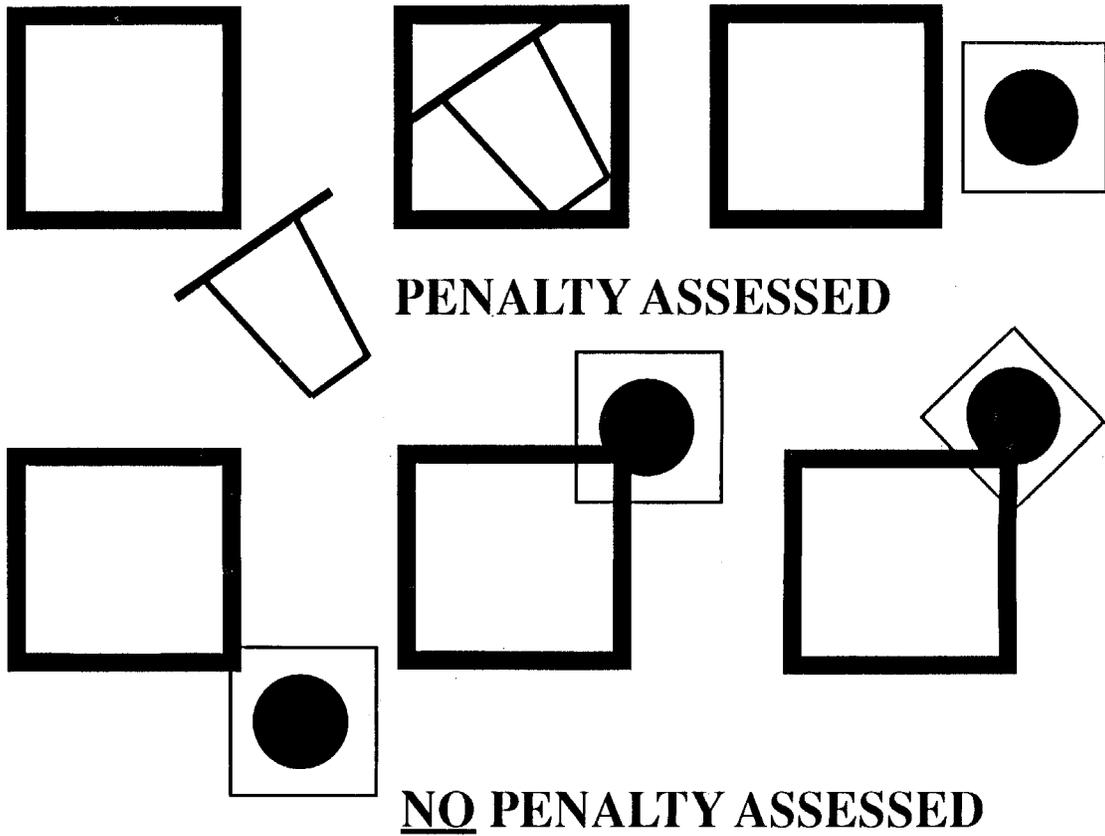
As a novice, you will probably be working course as your work assignment. The following are your responsibilities as a worker in addition to safety issues. These are also covered during the mandatory driver's meetings at our events.

1. WORKING THE COURSE CAN BE DANGEROUS! Work locations are chosen with attention to safety, but it is extremely important that everyone always pay attention to all vehicles on course. Be ready to move out of the way if a car spins or slides in your direction. BE SAFE.
2. CHECK IN WITH THE WORKER CHIEF before going out to the worker station.
3. WORKERS MUST BE STANDING AND ALERT any time that a car is on course.
4. NEVER TURN YOUR BACK ON A MOVING CAR. If you must turn your back on a moving car, have someone watch your back and signal you at the first sign of danger.
5. CHAIRS, CAMERAS, CELL PHONES, ETC. ARE NOT ALLOWED on course at any worker station.
6. KEEP THE FLAG IN YOUR HAND at all times. The flag should be bunched up and never rolled up. It takes too much time to unroll the flag in an emergency. The RED FLAG SHOULD BE USED IN ANY EMERGENCY SITUATION in which you wish to stop a driver on course. The driver should come to a complete stop, at which time you should inform them of the present danger. Give the driver any special instructions on how and when to proceed through the rest of the course. When red flagging a car, NEVER RUN IN FRONT OF THE CAR. Maintain a safe distance while waving the red flag. Finally, report the car number to your radio person and/or Timing and Scoring for a rerun.
7. CARS WILL BE COMING AT FAST INTERVALS. Hurry to reset a downed cone and return to a safe location.
8. "POINTER CONES" (or any cone that is already lying down) DO NOT COUNT AS A PENALTY. Make sure that they are returned to their proper position if hit, but do not count them when reporting to Timing & Scoring.
9. Know how to assess CONE PENALTIES. (See next page.)
10. When possible, HAVE THE PERSON *NOT* HOLDING THE FLAG, RETRIEVE DOWNED CONES. If the flag-person must retrieve a cone, hold the flag out of sight as to not appear to be red-flagging a car.
11. WATCH FOR CROSS TRAFFIC. There are usually 2 or more cars on course at once.
12. When a car is approaching, WATCH BEHIND THE CAR, not directly at the car. When it is close enough, look for the car number, then resume watching behind the car for downed or wobbling cones. When the car passes make sure that any wobbling cones are still within the chalk box.
13. If a cone cannot be reset in time for the next car, IT IS THE DRIVER'S RESPONSIBILITY TO COME TO A COMPLETE STOP and signal to the

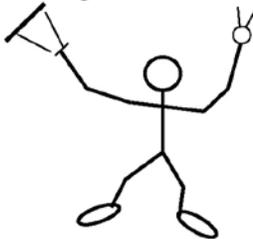
course worker that the cone is down. Report the car number to Timing & Scoring for a rerun. Do not flag a driver because a cone is down.

14. ONLY DESIGNATED WORKERS ARE ALLOWED ON COURSE during competition. Any other people on course must have the permission of the Safety Steward. Photographers must have a dedicated spotter. This spotter may not be someone currently assigned to a course working position.
15. NEVER PICK UP PARTS THAT HAVE FALLEN FROM A VEHICLE, as they may be hot. If they are hot, try to quickly kick them off course or flag the next car if they are in danger of hitting the object.
16. IDENTIFY STATION NUMBER AND CAR NUMBER when calling in penalties and speak in a clear and calm manner.
17. MAKE SURE THAT TIMING & SCORING ACKNOWLEDGES PENALTIES as they are called in.
18. LIMIT TALK ON THE RADIOS to penalty or safety related information only. No chitchat please.
19. Before the run group starts, WALK THE COURSE IN THE AREA THAT YOU ARE WORKING to ensure that all cones are within the chalk boxes and that the chalk mark is visible. Re-chalk any cones where chalk boxes are becoming faint.
20. WORK STATIONS WILL HAVE SPARE CONES to use to replace cones that are dragged off by cars
21. RUN 90-DEGREE ANGLES from a car skidding toward you. Don't run away from the car, it can catch you.
22. FAILURE TO DO A WORK ASSIGNMENT will result in disqualification.
23. If there is an accident, DO NOT TOUCH ACCIDENT VICTIMS. Only people certified in First Aid should try to help the victim of an accident. The only exceptions would be if the person is in danger of serious injury in the position that they are currently in. (i.e. trapped in a burning car or EXTREME loss of blood)
24. REPORT ANY FLUID LEAKS OR DEBRIS coming off of cars immediately.
25. WATCH FOR SPECTATORS crossing the boundaries established at the drivers meeting. Ask them to stay within the designated spectator areas.
26. Be prepared for any type of WEATHER. Make sure you drink plenty of fluids.

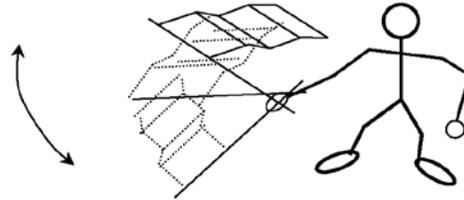
CONE PENALTIES, COMMUNICATING PENALTIES, AND RED FLAG WAVING



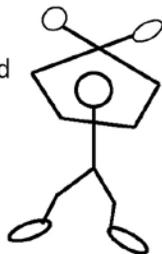
Example: a 2 cone Penalty
Hold 2 fingers in the air



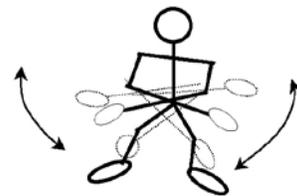
RED Flag situation
Wave flag up & down



DNF
Cross-arms over head



All Clear
Wave arms across waist



WAITING TO WORK OR RUN

While waiting to work or run, it's a good idea to watch other run groups to get an idea of what kinds of challenges the course provides in addition to seeing what kinds of times people are running. It's also a great time to make some new friends. Autocrossers are mostly a rather friendly, social group of people who love cars, racing them, and talking about them. I highly recommend meeting people who run a similar car to your own, but you don't have to limit yourself.

FWD VS. RWD VS. AWD

Front wheel, rear wheel, and all-wheel drive vehicles perform differently from model to model. Have a look around in the pits and find a like make and model. Strike up a conversation with the owner. Ask a lot of questions and maybe even ask for a ride in their car during practice, Time Only runs, X-runs, or fun runs.

DO'S AND DON'TS

- **DO** Ask a lot of questions, you will learn from everyone with whom you speak
- **DO** Come out and practice your driving skills; schools are available year-round
- **DO** Get to know the "limits" of your cars handling in a safe and controlled environment
- **DO** Practice your advanced driving knowledge in every day driving — NO, not street racing: things like controlled braking and hand shuffling the steering wheel on a daily basis
- **DO** Print out the Novice Handbook and this beginning A/X driving document for review
- **DO** Bring lots of water to drink and snacks to eat
- **DO** Tell your family and friends how much LEGAL fun you just had and try and get them to come out and support you in your new sport
- **DO** help clean up the course and put everything in the motorhome if you are around at the end of the event. Also, any trash/bottles must be put in their respective bins (if available).
- **DO NOT** Play the radio. SHUT IT OFF. Listen to the tire's song instead. It tells you a lot
- **DO NOT** Practice you're A/X driving skills like an idiot in everyday driving
- **DO NOT** Bring any illegal drugs or alcohol to any CSCC event, ever
- **DO NOT** Drive like an idiot in or around any CSCC event — OK, don't drive like an idiot ever
- **DO NOT** Try and warm up your tires in the grid line by quick acceleration and fast braking as this will only get you thrown out of the event, and you will possibly lose your ability to run at our events
- **DO NOT** Forget to sign up for OR skip a work assignment. This hurts everyone and may exclude you from driving with us again

CLOSING THOUGHTS BY NORMAN ROBERTS

Now that the race day is over, have a look around and see if you or someone close to you has left some trash. Please pick it up and dispose of it. We rent these lots and we get many people eating food, reading newspapers, flyers etc. and they easily get blown away from their pit area. Part of the contingency for us renting these parking lots is to leave it just as clean, if not cleaner, than when we arrived. If we all pick up just one piece of trash the place will be much cleaner and entitle us to return and race another day.

Be smart and drive out of the local event area at posted or slower than posted speeds. Again these venues are getting harder to find and we are constantly being evaluated for enforcement of all abiding rules at every event.

Spending some more money for driving schools and practice days are a great way to quickly hone your driving skills. Check our local website for more school and practice events.

Sometimes in Southern California's wonderful weather, we have the ability after the race event to have "FUN RUNS." These fun runs are cheap, usually \$1 or \$2 each. This is a wonderful time to learn more about your car and improve your driving skills. Secondly, this is a GREAT time to ask some of the faster drivers to ride along or even drive your car to gain further knowledge.

Good Luck, Be Safe, and Have Fun.....

Norman Roberts
Team Blew co-founder

Solo Racing Box Contents and Race Day Checklist

Equipment

- Tire Pressure Gauge
- Lug Wrench
- Chalk (to monitor tire roll-over)
- Paper Towels
- Glass Cleaner
- Terry Towels
- Extra Engine Oil
- 50/50 Coolant/Water Mixture
- Other fluids (brake, power steering, auto transmission, etc.)
- Basic tools (adjustable wrench, screwdrivers, small socket set, etc.)
- Electrical Tape
- Blue Painter's Tape
- Duct Tape
- Work Gloves (to handle dirty cones or hot items)
- Notebook to record event conditions, track surface, weather/temp, and critical car settings (shocks, tire pressures, alignment, etc.)
- Helmet
- Thin-soled, narrow shoes or driving shoes
- Car Numbers/Class. Numbers must be at least 8 inches tall; Class letters must be at least 4 inches tall: Both numbers and class letters must be in a contrasting color from the car and visible on both sides (not taped to the inside of tinted windows)
- SCCA Solo Rules Book
- Traffic Cones to mark parking space (optional)
- Driving gloves (optional)
- Pyrometer (optional)
- Air Tank or Compressor (or fill tires to desired pressure before arrival)
- Sprayer for water (only) to cool tires (if needed)
- Sturdy Floor Jack
- Jack Stands

For personal safety, health, comfort:

- Drinking Water
- Breakfast, Lunch and Snacks or money to purchase
- Chair
- Portable shade (when using EZ Up or similar, assure weights and method to secure so it won't blow away/damage cars)
- Sunscreen
- First Aid Kit
- Hat
- Sunglasses
- Neck Cooler and/or mister
- Hand sanitizing gel or wipes/pre-moisturized towelettes

Getting Ready to Drive!

Check Car (Safety)

- Check lug nuts and wheel bearings
- Check Tire pressures
- Check fluids
- Clean Windows — inside and out
- No loose items — check trunk and under seats

Driver Position

- No distractions — focus is the key
- Check pockets
- Use Restroom
- Remove jewelry that can interfere
- Beware of loose clothing that can interfere
- Beware wide, thick-soled shoes. Use narrow, thin-soled shoes or driving shoes. No loose laces.
- Put visors up and secure
- Move rear-view mirror up and out of the way if it obstructs your vision
- Assure headroom. May need to remove Targa/"T-Tops" to make room for helmet

Seat

- Far enough forward to have a bend in your knees (you don't need to stretch or slump to reach the pedals)
- Sit upright
- 90-120 degree bend in elbows (wrists rest on top of steering wheel)
- Seat belt on, tight and locked, if possible. A secure seat is critical. You need to feel "through the seat of your pants." You can't focus and drive well if you are sliding around!

Grip on Steering Wheel

- Hands at 10 and 2 o'clock or 9 and 3 o'clock (preferred)
- Gloves are a personal choice
- Keep grip light
- Don't grip with your palm up/on the inside of the steering wheel. Your palms should always contact the outside of the wheel
- Don't get crossed up — instructors will show you proper techniques

Driving to Grid/In Grid

- 5 mph speed limit — watch out for other cars, children and spectators
- Don't leave car in case you have to move it
- Watch for and abide by instructions given by officials

- Have Fun!!!