

SCCAForums.com

 Search

Autocross Handbook

A guide to help you make it through your first season

by Kate Hughes

Glen Region, SCCA

Painted Post, New York

© May, 1996

revised March 2006 by SCCAForums.com

Further copyright Information at end of page.

Table of Contents

What is SOLO (autocross)?

On Being a Novice

Description of the Novice Program

What to Bring to an Event

What Happens at a Solo

1. Registration
2. Tech Inspection
3. Course Walking
4. Drivers' Meeting
5. Your Runs
6. Your Work Assignments
7. Fun Runs
8. Course Clean-up
9. The Awards

Tech Inspection Requirements

Working Rules and Safety

Car set-up Tips

Course Walking Tips

Driving Tips

Solo Etiquette

How to Help Out at an Event

The Rule Book and Classes

PAX Index

Championship Points

SCCA Membership

Beyond the local Region

Recommended Reading

Back To Reality

What is Solo (Autocross)?

"Solo II is a precision sport, much like, say, archery, riflery or golf. You must be precise and consistent, all the while driving so fast you can barely concentrate" -- Mark Sirota

SOLO (formerly known as Solo II, or Solo2) events (also known as autocrosses) are an all forward motion driving skill contest. Each driver is individually timed to the thousandth of a second, over a short, miniature road course clearly defined using traffic cones. Cars compete one at a time, hence the name "Solo", in a class with similar cars. An event can be held on any flat paved surface, usually a parking lot, or airport apron or runway.

SOLO emphasizes driver skill and vehicle handling rather than just speed. The corners are tight, and there are lots of them, so the driving is exciting and challenging. SOLO speeds do not exceed those normally encountered in highway driving. (This is the main difference between SOLO and Solo I; where much higher speeds are attained)

The skills you learn and practice here; smooth transitions, enhanced braking, and skid correction, will have an immediate impact on improving the safety and skill of your street driving. SOLO is an excellent way to teach car control to young drivers in a safe environment.

SOLO is also a very social sport, filled with some of the friendliest people you'll ever meet. The camaraderie of the drivers is a special part of autocrossing that is profoundly satisfying.

Cars are divided into categories and classes. *Classes* separate cars by performance, so that VW Rabbits compete against Honda Civics, and Porsche 911s compete against Nissan 300ZX Turbos. *Categories* separate cars according to their level of preparation. Unmodified cars compete in classes in the Stock category. Cars with modifications to the suspension, intake or exhaust system, or different wheels and tires compete in Street Prepared. Cars with engine modifications and race cars compete in the Prepared category. Cars with different engines, and open-wheel cars compete in classes in the Modified category. The complete descriptions of classes and preparation allowances are spelled out in the SOLO rule book.

The costs of SOLO competition are reasonable because you can compete in anything from a real race car to the car you drive on the street every day. Entry fees are usually \$15 to \$20 per driver, and two drivers can share a car.

Sports Car Club of America (SCCA) sanctioned events are insured through the SCCA, and are conducted under the watchful eyes of SCCA Safety Stewards. The rules and guidelines established by the SCCA and enforced by the Safety Stewards are what makes this one of the safest motorsports. A day of autocrossing is far safer for both car and driver than most people's daily commute to work.

Approximately 1100 SCCA sanctioned SOLO events, totaling more than 10,000 competitors, are held each year throughout the country. More people compete in Solo competition than any other motorsport save drag racing.

With so many SCCA regions, rules and programs may differ somewhat between the regions. For instance, some regions have an extra class for their national-caliber drivers, some regions drive in morning and afternoon heats. A quick look at a region's supplemental regulations will outline local customs. In this handbook I will indicate with RLS (Read Local Supplementals) those topics which are covered in your local "supps".

On Being a Novice

You'll remember your first event for a long time. The adrenaline that makes you shake at the start-line before your first run, and the even bigger surge of adrenaline you feel when you finish. That excitement is part of the sport, and it's why we all do this.

Don't let being a novice overwhelm you! Every driver, including the National Champions, had a first day and a novice season. Autocrossing is a skill that requires instruction and practice to see improvements. If it was easy, it wouldn't be so competitive, or so fun. In fact, when experienced road racers come to Solo for the first time, we often put them in Novice Class. It's not like falling off a log for them, either. The great thing about this sport, though, is that even when you're going "slow", it's still fun driving.

The course may seem "busy" at first, because it's tighter than what you see on the street, and you're trying to attack it faster than you could in traffic. You'll have fun learning the sport and learning to keep the car in control as you get faster and better with more seat-time.

With that said, here are some tips to give you the right novice attitude, so you don't become discouraged:

- Your goal is to have fun! That's why everyone is here.
- Your goal for the first run is to avoid getting lost on course (see course-walking tips)
- Your goal for the rest of the day is to improve your time on each run
- Your goal for the second event is the same as the first.
- Your goal for the rest of the season is to beat somebody (anybody!) and continue to make each run faster than the last.

At this point, you are learning a lot on each run, and you may be 10 seconds behind the class leader. That's not unusual! You're still doing OK.

Generally speaking, the veteran drivers like to help the novices. The magic words "I am a novice" will get you extra instruction from other competitors, who can critique your run. Just be careful not to interrupt a driver on a course walk, or while he or she is concentrating on going over the course in his or her head. (See the section on Solo Etiquette.)

Don't forget, there is a Novice Class Instructor available to answer your questions and help you get started.

Description of the Novice Program

The Novice Program was created to help people new to autocross have fun from the first event. If this is a new sport for you, you will have lots of questions. The Novice Chief, the instructors, and the novice handbook are here to answer them, and to show you some of the basic skills to get you started (RLS).

The Novice Class is designed to let all novices compete against each other, regardless of their car or preparation level. The PAX index is used to handicap the different classes and categories based on average performance nationwide. (more detail on the index in a later chapter)

Eligibility for Novice Class (RLS)

Request novice classification at registration and it will be noted on your form. You must request this before the first car is run. Novices display an N after the class markings on the car, such as ESN or DSPN, etc.

When Novices make their runs (RLS)

Novice class drivers compete only against each other, scored by PAX indexing. Trophies are awarded for the Novice Class by the same system used for the open classes; the top third of the class.

Most importantly, remember this is a Novice *Program*, a whole package for instruction and fun. It includes instructors, the handbook, a guided course-walk and rides with experienced drivers. We want to answer all of your questions and help you have fun. Please take advantage of us.

What to Bring to an Event

This list covers everything from sunscreen to snacks to tires pressure gauges. You will probably come up with your own list of things you need at a Solo event, but this will get you started.

You must have:

- Your car (although you may share a car with someone else) Your entry fee A valid driver's license

You may want to bring:

- Your SCCA membership card, to get a discount on entry fees
- A safety helmet
- Extra air in your tires. Stop at a gas station and fill your tires to approximately 45psi-Front/35psi-Rear for a front-wheel-drive car, or 40psi all around for a rear-wheel-drive car.
- Suitable shoes for driving. The best are light-soled, with a narrow sole which does not stick out past the side of the shoe
- Sunglasses
- Sunscreen
- Clothes appropriate for the weather forecast, plus a change for when the forecast is wrong.
- Rain gear / umbrella
- A hat
- A folding chair
- Thermos of water or other *non alcoholic* beverage
- Cooler for lunch or snacks
- Windex and paper towels
- A pad and pencil to write down all the advice you'll get
- A copy of the current SCCA SOLO Rule Book
- A good tire pressure gauge
- A portable air tank or compressor
- Chalk or white shoe polish to mark the tires

What Happens at a Solo

People begin arriving before registration opens (RLS) so they can unpack their car, change tires and get ready for the day before registration begins. It is best to arrive at or before the beginning of registration so you will have time to register, tech your car, walk the course, and have ample time to talk to the Novice Chief.

Registration

To register you must have a valid driver's license and entry fee (usually \$15 to \$20). Fill out the information card at the registration area. They will help choose the class for your car if you don't know what it is. You will also be assigned a car number for the day. At registration, you will be asked to sign the insurance waiver. You *must* do this to compete, and any guests you bring must sign the waiver also.

Once you know your class and car number, mark your car using white shoe polish on the window (it comes off with Windex), tape paper numbers inside the window, or use magnetic numbers if you have them.

Tech Inspection

Your car must pass tech inspection before you can compete. Read the tech inspection chapter to see what you'll need to do. Registration may be at one central area, or at your "pit" space (RLS).

The tech inspector will sign your card if you pass, or recommend changes to make the car pass, such as additional tie-downs for the battery or removal of loose items or hub caps if you've forgotten.

Course Walking

After tech, you will have time to walk the course. Before you go, read the chapter on course-walking tips. Course maps are available at registration, and the Novice chief will take you on a guided walk after the drivers' meeting. Try to have the course memorized before you go on the guided walk.

Drivers' Meeting

The drivers' meeting is *mandatory for all drivers*. The event chair will hold the meeting approximately one half hour before the first car starts. Be sure to attend. This is where you will find out information you'll need to know about the course conditions, number of runs, particular safety concerns, how penalties are assessed, and how work assignments will be handled.

At the end of the drivers' meeting, the Novice Chief will announce the novice course-walk.

Your Runs

You will have a minimum of three timed runs, weather permitting. Depending on the event, you may get as many as five timed runs. Find out who is running before you and after you, so you know when to line up (RLS). Running in order makes the timing people's job easier, and keeps the event running smoothly, but if someone gets in front of you, or you are running a little behind, don't worry too much about it. The event chair will call out which classes are to come to the grid (line of 4-5 cars waiting to run)

Once you are in grid, you will wait for the cars in front of you to launch, and you will move up until you are on the start line. A starter will wave a green flag when it is OK for you to start. The green flag means go as soon as you are ready, the timer will not start until you pass through the lights. Don't take too long if we are running two cars on course at once, because you start is timed to make sure you do not get too near the car already on course.

If you do get "lost" on course, take the time to orient yourself and continue. Don't head back to the start line, because you may be pointed toward another car. Just take the time to get back on course, and continue the run as a practice! If the next driver catches up, they will be red-flagged and be granted a re-run (which they'll use to its fullest potential).

Times are posted after each run. Your fastest run of the day is used to determine your finishing position.

Read the Driving Tips section for more detail about your runs.

Your Work Assignments

It's best to report for your work assignment as quickly as possible when it is time for you to work (RLS). Otherwise, some people end up working longer than others, which is no fun. The place to get work assignments will be announced in the drivers' meeting.

We try to put a novice with an experienced driver on a station if we have enough people. For a little bonus instruction, ask your co-worker to talk about the techniques of the cars on course. Read the chapter on Working to get more detail on how to call in cones and stay safe while working the course.

Fun Runs

If time permits, fun runs are held at the completion of the event while trophies are being readied. This is your opportunity to ride with other drivers and have them ride with you. Fun runs usually cost one to two dollars.

Course Clean-up

Once all the timed runs and fun runs, if any, are complete, everyone helps clean up the course. This involves bringing in the fire extinguishers and flags, cones and timing equipment, and storing them in the trailer. Scoreboards need to be cleaned off and the pit area needs to be checked for trash. When everyone helps, this can be completed in fifteen to twenty minutes.

The Awards

After the event, following course clean-up, everyone meets for the trophy presentation. The location for the presentation is usually announced at the drivers' meeting. The event chair and his/her assistants will give out results and present trophies to the top third of each class, plus a trophy for Fastest Time of the Day (FTD) and the PAX challenge winner; the driver with the fastest indexed time.

Tech Inspection Requirements

Safety Helmet: If you bring your own safety helmet, it must be approved by Snell in the current or two most recent ratings (e.g. if Snell 95 is in production then that, 90 and 85 are legal). The club provides loaner helmets for people who do not have one.

Safety Belts: Original safety belts, at a minimum are required. Shoulder belts are not required, if your car did not come with them, but you must have a lap belt. Belts must be firmly attached.

Solidly Mounted Battery: The battery must be held down properly. If it can be moved at all, it will not pass. There are some additional battery requirements which may affect you if you have modified your car. The Tech Inspector will help you out with them.

Legal Tires: In Stock and Street Prepared categories, the tires must have measurable tread, and must be in good condition. Excessive weather checks or visible cord/plies will fail inspection. Tire pressures should be higher than used for the street, usually 45psi-Front/35psi-Rear for a front-wheel-drive car, or 40psi all around for a rear-wheel-drive car.

Brakes: The brake pedal must be firm, with no loss of pressure when held down.

Steering / Suspension: The steering must be tight, with no excessive play. Wheel bearings cannot have excessive play.

Hub Caps and Trim Rings: Hub caps, trim rings and wheel covers must be removed for competition, unless they are bolted to the wheel.

Loose Items in Car: All loose items must be removed from the passenger compartment and trunk. This includes the floor-mats. You may remove the spare tire and jack, but you are not required to if they are properly secured.

Fluid Leaks: Excessive fluid leaks will not pass inspection.

Numbers and Class Markings: The car numbers and class markings should be prominently displayed on both sides of the car in colors that contrast with the paint, and should be large enough to be seen easily from the timing van. White shoe polish for marking windows (comes off with Windex) is available for people who don't have magnetic or paper numbers.

Adequate Muffler: Your car must be quieter than 95dbA (RLS) measured 50 feet from the course at a place where you are under full throttle. Due to the possibility of losing sites for noise problems, this rule is strictly enforced. (If your car is quiet enough to avoid attracting Police attention, it will most likely pass the noise requirement)

Throttle: Accelerator pedal must have a return spring and operate freely.

(RLS) for local tech requirements

You are not required to have your car registered for street use, but it must pass tech inspection.

Working Rules and Safety

Do's

Report to work promptly.

Make sure your station has adequate supplies; extra pylons, fire extinguisher, radio and red flag.

Know your area of responsibility and station number.

Make sure cones are in their proper place when you get to your station, and check them periodically during your shift.

Understand the pylon rules (Section 7.9 A, B & C in the rule book) e.g., pointer cones **do not count** if hit (see below), and a car is off-course (DNF for Did Not Finish) if they pass on the wrong side of a cone.

Pay attention to cars on course for accurate cone counts and your safety. It is best to watch the *back* of the car and the cones themselves to see the wobbling cone which may have left the box.

Replace cones as soon as possible, another car will be coming through in as soon as 30 seconds.

Be prepared for exposure to sun/rain, wind, heat/cold while on station

Keep red flag in your hand, unfurled (but not flapping) ready for immediate deployment.

Stay alert for unexpected pedestrians and vehicles

Don'ts

Do not use cameras while on station.

Do not sit down and do not wander away from your post.

Do not turn your back on cars on course. Safety First!

Do not red flag a car unless instructed to do so by the radio person **or** if it is an emergency. However, *if in doubt, err on the side of safety!*

Do not litter

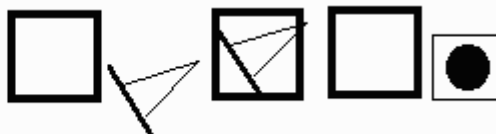
Do not pick up hot parts dropped on course because of risk of burns.

A penalty is given if :

- If the cone is knocked over and is out of the box.
- If the cone is knocked over and is in the box.

- If the cone remains standing but is out of the box.

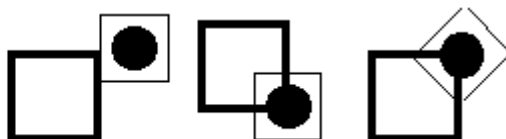
Penalty Assessed



A penalty is NOT given if :

- The cone remains standing is touching the box
- The cone remains standing and is partially in the box.
- And of course, if the cone remains standing within the box.

No Penalty Assessed



Car set-up Tips

Keeping things inexpensive, we'll only talk about things you can do for free, or under \$50. After a while, you may want to put more go-fast goodies on your car, but make sure to read the rule book, and stay legal for your category.

But also keep in mind, at this point you can go faster sooner by working on the driver instead of the car. See the course-walking and driving tips!

What you can do Today

Tires: You've already read that you should put an extra 10 to 15 psi in your tires. The reason for this is to keep your tires from rolling under during hard cornering. But how much is too much? Put chalk on the edges of your tire, in three places around the diameter, and you can see how far over the tire was going during your runs. Bleed out a little if the chalk is still showing on the tread, or add a little more if the chalk has been worn off down the sidewall. The line of worn chalk to remaining chalk should be right at the corner of the tread and sidewall. Keep notes on how many psi you ran, and where the chalk line was, for your next event.

Remember that as you get better and corner harder, you'll need more air to compensate, so keep using the chalk at every event.

Driver Restraint: In order to have good control in driving, you, the driver, have got to stay put. So make sure your seat belt is tight and firm. Some people like to tug hard (fast) on the shoulder strap to engage the lock on the reel.

Driver Location: Most experienced drivers will agree that the best place for your seat - to give you the best control - is seat forward far enough to have your leg slightly bent when the clutch is all the way to the floor, and seat-back reclined or upright to a position that allows you to rest your wrists on the steering wheel when you shoulders are firmly against the seat.

This position allows you to run the full range of steering inputs and foot motion without stretching or moving in your seat, and can have a huge impact on your driving skill.

What you can do before the next event

Alignments cost \$20 to \$60, and if you're looking for a cheap way to improve your SOLO set-up, this is a good one.

Some words of caution, first. Manufacturers set their alignments to what they consider to be the most predictable and stable settings. Improving your car's turn-in for autocross may make your car twitchy on the street. So use your own discretion. To get some suggestions, though, ask a driver who has a car similar to yours in weight, wheelbase or front or rear wheel drive.

Course Walking Tips

"You must be able to keep track of the course in your head. If you can't, then you can't drive it to its fullest potential"

Josh Sirota

That quote is worth five seconds to a novice. Knowing how to walk the course is the most important step in being competitive and staying "ahead" of the course. Usually, you'll want to walk the course *at least* three times.

Step 1) Walk the course. Your first walk will be to get the general layout, and is often a social walk. Now get away from friends and walk the course alone, concentrating on memorizing the layout. Think of it in sections, with key cones marking the turns, such as:

start straight

slalom (enter on right)

decreasing sweeper to the left

"little snake" then "big snake"

right-hand curve (look for three pointers)

"thread the needle section"

tight right, then tight left

finish

Stop every now and then and run through the course in your head, from the beginning to where you are. Get down - the course looks different from a seated position. This will give you a better picture of what the course will look like at speed.

Pace off the distance between cones in a slalom. Some course designers vary the distance, and it's good to know before you arrive whether you will have to vary your speed in a slalom. Take a note-pad if you like, and make notes such as pavement changes, camber change, bumps, sand, etc.

Make a mental note to yourself (or write it down) how far ahead you will be looking. When I walk the course, I say to myself, "OK, when I am *here* I will be looking *there*" This will help you to remember to look ahead while you are driving.

"Repeat this step over and over until the picture is perfect."

Andy Hollis - Four-time Pro Solo and SOLO National Champ

How do you know if the picture is perfect? Sit down by your car and try to draw the course on a blank piece of paper. Include the key cones you want to recognize while you drive. If you can't draw the course, you will want to walk it again. Once you leave the start line in your car, you should not be spending any time figuring out where the course is.

Step 2) Plan the course. (Do this *while* walking the course again) Now decide exactly how you want to drive the course. Driving the course perfectly involves two things; coming up with the correct plan, and executing the plan

correctly. If you don't have a plan, you can't possibly know where you didn't execute it correctly. It's hard to know if you did this step correctly, but step 4 is something you can work on.

The plan involves the line you will take through the cones - the quickest way through. Note, I didn't say shortest. Think about the characteristics of your car; does it corner better than it accelerates, or the other way around? That will tell you whether to slow down so you can get through the corner in control and get on the throttle as soon as possible, or try to carry speed through to keep up the revs.

Don't forget to plan where you will be looking. There is no need to memorize *every* cone on the course, only the ones you plan to be near, the "important" ones. Look from one important cone to the next in your plan.

Step 3) In Grid. Before you run, while you are in grid, go over the course again several times in your head, executing the plan you made before.

Step 4) After the run. Sit in your car and go over your run. Figure out where you didn't execute the plan. If the plan was to be near a particular cone, and you were five feet from it, then you didn't execute the plan correctly, and a red light should have gone off in your head. Maybe you need to adjust the plan because you were going too fast in the slow parts. Decide at this point whether your next run needs to be a better execution of the plan, or a modification of the plan.

Basically, don't use the car as an excuse, you will see a big difference in your times when you drive a course that never surprised you.

Driving Tips

Seat time, seat time, seat time. That's the best way to go faster. They say, "Before you fix the car, fix the driver". That's because there's so many techniques to improve your driving, it takes seat time to learn them all, but once you do, someone without those skills would have to spend a lot of money on their car to beat you, and probably still couldn't.

Here are a few techniques to get you started. Don't try to apply them all in your first run, you'll be too busy. But read through the whole list, then work at gaining these skills one at a time.

Look Ahead. I can't emphasize this enough. I repeat it out loud while I am driving. It's so easy to forget, but makes such a big impact on my driving. It all relates to hand-eye (and eye-foot) coordination. *Look* where you want your hands to drive you, and look far enough ahead to take advantage of the feedback. If you're looking at that outside cone that you're afraid you'll hit, well, you'll hit it. If you're looking ten feet in front of the bumper, the turns will keep surprising you. Imagine looking at your feet while you are running on foot! You won't be very coordinated, and you won't have a good sense of distance or speed. Same goes for driving hard corners as you do in autocross. Look ahead. You will be *astounded* at your performance the first time you remember to do this all the way through a course.

Slow Down to Go Fast. A common problem when you're starting out is trying to take the tight sections too fast, and not staying in control. I still remember finishing a run and saying, "Well, I didn't go very fast, but it sure was smooth," only to find out I'd gone faster by a full second! Just be patient in the slow spots. They're slow spots, after all.

Brake hard in corners. Go ahead, squeeze the brakes *hard*. There's no morning coffee on your dashboard, or eggs in the front seat. Once you decide to slow down for the corner, don't waste any time. If you find yourself at a crawl and you're not at the corner yet, why, you've just found out that you can brake later. Locking up your tires will not make you stop faster, so squeeze the brakes and let them do the work, not your tires.

Adhesion. Don't ask too much of your tires. For any tire/pavement pair, there's only a certain amount of traction. We'll call that 100% traction. You can use up that traction with your throttle, your brakes or your steering wheel. So if you're going into a corner, using 100% of your traction to make the turn, what happens when you ask for more traction by

applying the brakes? Either you won't brake or you won't turn. Or both. Same goes for accelerating out of a corner. Ease in the throttle as you ease out of the turn. *So use full throttle and full braking only in a straight line.* This goes back to slowing down to go faster, and brings us to...

Smooth Inputs. You may have noticed that I used the phrases "squeeze the brakes" and "ease in the throttle". This is where you have to change your mind-set about inputs to controlling your car. You need to convince yourself that you can make your car respond better by squeezing the brakes hard instead of standing on the brakes, by rolling in the throttle rapidly instead of stomping on the gas, by turning the wheel quickly instead of cranking it around. Subtle, but it will show up in how often your car is in control instead of scrubbing off speed pushing around a corner. And it will take a lot of practice to become second nature.

Shift near redline. On the street, we don't usually shift near redline (high rpms). But in autocross, you want to be making the most of the power available to you. You'll learn to hear the motor as you drive and stay in a low gear longer. Most courses will be in second gear for stock cars. If you're shifting to third, you're shifting too soon, and giving up power (ask local drivers if this is true in your region).

Launch at 4000 rpm. Each car varies, but try to start at higher rpms than you're used to. Don't "dump" the clutch, or you'll find your wheels spinning. Let it out rapidly and find the right rpms to maintain traction. Higher horsepower cars will want to use lower rpms than less powerful cars.

Don't worry about the blinkers, wipers or horn. You're bound to hit them as you drive. Don't let it throw you. We've all done it!

More, Later... There are many more techniques for getting better times, but start with the ones listed above. After you've learned them, you'll be ready to buy a book on autocrossing (see Recommended Reading), or attend a driver's school and learn the advanced techniques of heel/toe, shuffle steer, late apex, and more.

Go to as many events as you can. Go to the ones with the toughest competition - winning something local is fun, but losing to someone fast will probably teach you more. Attend drivers' schools in your area, or travel to another region. Do some Pro Solo events; these are explained in more detail later in this book. They give you 12 runs on a fairly short course, with time to walk between runs and a chance to drive against real national competition.

Always remember to have fun, even when you are being stomped by some national hotshoe. You'll never stop learning - the best drivers will tell you this still applies after ten or twenty years! Remember, *seat-time, seat-time, seat-time.* Nothing will make you go faster sooner. And nothing is less expensive in improving your times.

Solo Etiquette

SOLO is a social sport, and most drivers are happy to give you advice and critique your runs. Ask someone with a similar car if you may follow them through a course walk. Maybe they'll even think aloud for you (don't do too much talking yourself, or you will be making them walk again). Ask if you can ride with them on a fun-run, and offer to pay the \$1-\$2 for the run. If you're not sure when to line up, go ahead and ask. Ask someone to look at the chalk on your tires to see whether you need more air. Ask someone to watch your run if they have time, and tell you what needs changing. They'll be glad to.

There are a few bad times to ask for advice, though. Here's a quick list:

When they are walking the course. (They're trying to memorize it.)

When they are staring into space or have their eyes closed, they're probably going over their run or plan.

When they are in grid. They are only thinking about the course.

Sometimes events will conspire to keep a good driver from competing. It may be a broken car, it may be an injury that prevents them from being able to change tires. *This is your chance!* Offer that driver a ride (co-drive) in your car - make it free if you can afford to. So they use up \$20 worth of tires. Not a bad price for a private instructor all day! I have gone to some of the big events, Tours, Divisionals and ProSolos and sent out an ad for a co-driver. It has been an enormous benefit to have advice from these experts all day, and be able to walk the course with them.

Try to help out. There is more work to be done than the mandatory course-work. This is an all-volunteer organization, so help is always appreciated. Luckily, this also puts you in a position to talk to other drivers, because the veterans are helping out, too. If you share the work, they'll have more time to talk to you. Likewise, showing up early will help out the registration and tech crew, and give you more time to walk the course. Read the next section on how to help, if you're looking for ideas to lend a hand.

Everyone stays to help clean up the course and pit areas. Keeping the sites is important to everyone, so leave your pit area cleaner than you found it.

The trophy presentation is a continuation of the event, and people talk about the course or their cars or runs. It's nice to have everyone show up, to cheer the winners, even if you didn't get a trophy yourself.

How to Help Out at an Event

(You don't have to spend money to help. The region pays for all supplies)

While you're still a novice:

Arrive extra early and be a gopher during course set-up.

Help sweep the course in sandy corners.

Line the course, or mark the cones.

Fill and bring water coolers if it might be a hot day

Help at registration: carry the waiver board through the line, or go through the line with registration cards and a pen. Check that everyone has their license and SCCA card out. Identify novices and give them a novice book.

Offer to be pre-event gopher. Does someone need to run for lime? Marking pencils, scoreboard cleaner or batteries?

Get water/lunch/whatever for the event officials stuck in the timing trailer or safety.

Corral people to help clean up, or take a walk through the pit area to pick up things left behind.

Offer to stamp and mail the results

See if the trailer needs supplies between events, then pick them up and bring them along next time.

When you get more comfortable with the way things run:

Help the event chair in calculating results and preparing trophies

Learn how to tech cars

Learn timing and scoring.

Be a novice helper. You can go over course-work with the novices while the novice chief takes his or her course walks.

Learn how to set up timing

Get your safety steward's license.

Get involved! It's fun to be a part of the action.

The Rule Book and Classes

The official SCCA Rule Book is a good investment. It will tell you about legal modifications, rules on re-runs, and many other topics. You may look through the region's copy to see what's there.

Almost all un-modified cars start out in the stock category. There are a few exceptions, but most people can't afford them. From Stock classes, each car moves to a designated Street Prepared or Prepared class when it has modifications made to it, and from there, with more modifications, on to a Modified class.

Sometimes cars in different stock classes will end up in the same street prepared class once they have go-fast goodies added. The reason is that modifications may equalize the cars. In general, the stock classes can be listed by stereotype:

SS Really fast sports cars (Corvette, '93+ RX-7 Turbo)

AS Powerful sports cars (C4 Corvettes, Honda S20000, Various Porsche, MR-2 Turbo)

BS Lightweight sports cars (RX-8, 350Z, MR-2 Turbo, M3)

CS Older or heavier sports cars (MR-2, RX-7, Miata)

DS Small coupes, mostly FWD (Type R, WRX, BMW 3 Series)

ES (MR-2, Miata)

FS Muscle cars (Mustang, Camaro/Firebird)

GS Large coupes & sedans, mostly FWD (Probe, Grand Am, Mini Cooper S)

HS Everything else (you name it!)

Cars listed are typical examples, not necessarily the best for the class and certainly not all the cars in the class. The stereotypes break down in the other categories (street prepared, prepared and modified), because of the allowed modifications to the car. Not all cars go to the same letter in the next category. The classes for the remaining categories are listed in the PAX index charts in the next section.

PAX Index

The PAX index, calculated each year by the "Professional Autocross" people (whoever *they* are) is a commonly used handicapping system for comparing times of cars which are not in the same class. The index is composed of data from across the country, and tries to take the driver out of the equation and compare only the cars.

These indices are based on cars prepared to the limit of the rules and driven by top drivers. (RLS to see the current year's indices, if your region uses them)

The index is multiplied against your run time to provide the time you would have had if you had been in an A-Modified car. It is interesting to compare the index of one class to another to see how much time you should gain if you prepared your car to, for instance, Street Prepared rules. Look in the rule-book to find out where your car would be if you made modifications. You can also see that alphabetically, higher cars are not necessarily faster.

Current Pro Solo Index Values

Index archives

PAX/RTP [2006](#), [2005](#), [2004](#), [2003](#), [2002](#)

PAX [2001](#), [2000](#), [1999](#), [1998](#), [1997](#), [1996](#), [1995](#), [1994](#)

RTP [2001](#), [2000](#), [1999](#), [1998](#), [1997](#), [1996](#), [1995](#)

Championship Points

The Championship Series is the system for year-end trophies. The champion of each class is the driver with the highest number of points at the end of the season for that class.

Calculations for points and eligibility criteria are outlined in the current year's supplemental regulations (RLS).

Usually, the points are awarded based on how you finish, or place, in your class. Often, you must be a member of the SCCA to compete for Championship points, and you must compete in at least half of the events in the season. Most regions count your best finishes in 2/3 of the events, so it helps you to drive in as many events as possible.

There are also year end trophies for Most Improved Driver and Worker of the Year. The Championship trophies are awarded at the annual banquet held by the region, and all members are invited (encouraged!) to attend, whether receiving a trophy or not.

SCCA Membership

Membership in the Sports Car Club of America is a great investment. You receive discounts on your entry fee at any region's SOLO events, and you receive the monthly SCCA magazine *Sportscar*. As a member, you may hold office and have a voice in running the club.

Membership is required for year-end Championship trophies (RLS). It is also required to compete in Divisionals, National Tours, Pro Solos and the Nationals event in Kansas.

Nationwide, the SCCA has over 50,000 members. On that strength, the main office for SCCA in Denver has negotiated special rates for members in insurance, travel to Nationals, long distance telephone rates and other, ever-changing programs. You can request information on these programs from the National Office in Colorado at (303) 694-7222.

Beyond the Local Region

Your region is only one of many in a nationwide SCCA SOLO program and independant autocross organization network. Expert autocrossers will all tell you that the most important factor in improving your skills is seat-time, seat-time, seat-time. Most of the local "hot-shoes" (everything's relative) can be seen at many events besides their own. But going beyond a local event for the first time can be confusing and a little intimidating. So here's a summary of what those other events are like, as a way of introduction. SCCA Membership is required for any event above the regional (local) level.

Nearby Regions: Often a great place to enjoy an event with more cars and deeper competition, and, in some cases, larger lots and faster courses. A one to two hour drive to these events will give you an opportunity to tune your skills, and sometimes steal the trophies from the locals. You'll see fields of 25 to 200 drivers, depending on the region and event. Some regions have an annual two-day event where winners are determined by combining the best time for each day.

Far Away Regions: I like to look in autocross publications such as North American Pylon or Sports Car Magazine for dates and locations of events whenever I'm traveling. I've met some great people and driven on some exciting courses all over the country. I haven't been anyplace yet where I couldn't find an event within a two-hour drive.

Divisionals are held by each of the eight SCCA divisions. Your own divisional and neighboring divisions are worth the drive. This two-day event is offered to determine the champions of each division. They usually feature locked pit areas for overnight storage. There's money as well as prestige on the line, from contingency sponsors (you use their product and advertise it on your car) like BFG, Yokohama, Mazda, Chrysler and others. Winners are determined by combining the best times for each of the two days of competition. 100 to 200 drivers is common.

National Tours: This sponsored, nationally run series is held six times per year at sites across the country. It is designed to be a traveling look at The Nationals. A two day event; the best times for each day are combined to determine the winners. This is a great opportunity for newer drivers, as an all-day novice school is held the day before, with national champions as your instructors. Once again contingency sponsors offer cash prizes, as well as trophies. Expect to see 100 to 200 drivers.

The Nationals: *The largest* U.S. motorsports event, held each year in September. Our current home for the nationals is Topeka, Kansas. This is the Mecca of autocross, and for any car enthusiast, a must-see. Each driver competes over two days, but if you have the time, stay for the whole show, as it takes four days to get through *over nine hundred* drivers.

The paddock area is a treat to tour, and see exotic cars, unlikely cars, classic cars and meet their drivers. Even knowing that your first trip is unlikely to yield a trophy, this is a delightful event which includes award banquets, a talent show, and more bench-racing than you've ever experienced.

There are also some "side shows" like the Neon Super Solo sponsored by Chrysler and held the Friday before competition, The Skid Pad Challenge sponsored by the Tire Rack to determine the car capable of the highest lateral Gs, and a "warm-up" event held by the local Kansas region the weekend before the competition. Read below to learn about the Pro Solo Finale, held at the same time as the warm-up, for those competing for the Pro title.

Pro Solo: A twist on the SOLO format, the Pro Solo features two cars simultaneously on mirror-image courses, starting from a drag-strip-style light "tree". The courses are shorter, forty seconds or so, but each driver gets six attempts on each "side" over the course of two days. Pro Solo₂ combines the driving skill of SOLO with the wheel-to wheel thrill of drag racing.

Winners are determined in two ways, by class, during the event, and by single elimination runoff for the "Challenge" in four categories; Open, Club (novice), Ladies, and Ladies Club, with prize money for each category and class. There are ten Pro Solo events held at various sites across the country during the year.

Winners accumulate points toward the championship which culminates in the Pro Solo Finale at the same site as, and the weekend prior to, the SOLO Nationals. Many of the faces and cars you see at Tours and Divisionals also drive in the Pro Solo series. There are usually 100 to 200 drivers.

Pro Solo Finale: This final event of the Pro Solo series counts as 1.5 events in points. Since most (all?) of the competitors also drive in SOLO, they are held in the same week in Topeka. Oh, yes, there's money involved here, too.

Recommended Reading

Secrets of Solo Racing by Henry A. Watts

Prepare to Win,

Tune to Win,

Engineer to Win,

and *Nuts Bolts and Fasteners* all by Carroll Smith

How to Make Your Car Handle by Fred Puhn

Back to Reality

You've had a blast driving in the SOLO event. The adrenaline was high, you're ready for another event. You can't wait to start improving your skills. Before you leave, lower your tire pressures to recommended levels for street driving. Don't forget to check when and where the next SOLO will be held! Then spend some time reading through this handbook again before the next event.

Driving in SOLO is a real thrill. But don't forget when you leave the course, that you're in traffic again. Take your new car control skills with you for emergencies, and obey all road laws. Save your spirited driving for Solo, where it's legal!

Copyright Information

This material is copyrighted because the whole point is to make it readily available to autocross novices and it is not intended to create a profit for me and especially not for anyone else. You may copy this material freely provided that you credit the author and contributors, mention the copyright and do not charge *any* fee to your users. If you wish to copy this information onto your own web-site, I really prefer if you just link to this site so that your readers will always have the benefit of the most recent version of this handbook.

Not I, nor anyone listed in this handbook is responsible for your actions, despite what you read. Be safe, use common sense, and take responsibility for yourself. All Sports are inherently dangerous. We know that, and we play anyway because it's fun. We apply our own values to the decisions we make about safety and risk within the rules. Your mileage may vary, therefore you are the only one responsible and accountable for your choices.

by Kate Hughes

Glen Region, SCCA

Painted Post, New York

© May, 1996

revised March 2006 by SCCAForums.com

With thanks to:

Karl Hughes (Finger Lakes Region) for his novice help sheets;

Josh Sirota (San Francisco Region) and Andy Hollis (Houston Region) for course-walking and driving tips;

Christine Johnson (Houston Region) for enthusiastically sharing her novice program ideas;

Team.Netters - Paul Brown, Sid deLeon, Frank Freda, Stuart Galt, Dan Hollenbaugh,

Eric Jones, Mark Sirota, and Jim White - for many helpful ideas which are used in this book;

and Paul Schelling (Glen Region) for patiently proofing.

Football Jersey Galore

Find a vast selection of Reebok NFL Jerseys at FansEdge

Sports-N-Collectibles

Sports Card Boxes Wholesale Prices Sports Apparel, Memorabilia & More

Copyright 2006 SCCAForums.com

