



## **Track Prep Guide (Novice Edition)**

### **A few words on High Performance Driving**

There are very few thrills in life which rival that of high performance driving. However, we must remember one VERY important thing? – SAFETY FIRST! Our main objective is to help you understand the delicate balance of speed without compromising safety. The following material is designed to familiarize you with the terms and techniques utilized during high performance driving events. You will enjoy a more satisfying, and more importantly, a much safer experience by understanding the fundamentals covered in this guide. One of the key goals is to allow you to safely build speed, while first, learning proper driving techniques.

### **Personal Conditioning**

High Performance driving requires total concentration, fully coordinated muscle movements, as well as split-second timing. Driving at high speeds in a safe and controlled manner requires that not only the vehicle be tuned for maximum performance, but also the driver. Be sure to get a good night's sleep prior to the track event. Additionally, eat a good breakfast and lunch, and drink LOTS of fluids (water is highly recommended) prior to and directly after each session on the track. Your heart rate will be elevated causing you to perspire much more than normal, even under cool weather conditions. Above all – KNOW YOUR OWN PERSONAL LIMITS! Only you know yourself and your body. If you feel ill or feel you cannot perform in a safe manner once on the track, or if you become fatigued during a track session, pull into the pits (or other designated area) and rest or obtain medical assistance immediately.

For obvious reasons no drugs or alcohol (including any prescription or over the counter medications which may make you drowsy) are allowed during the event. Use of these substances will usually result in immediate ejection from the event, as well as it may render you unable to safely operate your vehicle. You will need to maintain a high level of focus for longer periods of time than you may normally be used to. Therefore, it is highly recommended that you refrain from alcohol the night before any on track event, as this may cause you mind and body to be tired (even though you may not think so). We tend to recognize physical fatigue before mental fatigue, you need both at top levels of performance to be able to recognize track situations and react in a timely and safe manner.

## Vehicle Preparation

This section will cover many topics as there are many issues to address in order to have your vehicle ready for your first event.

**Brakes** – Brakes are arguably one of THE most important (and most often overlooked) component systems on a vehicle. If your car is at least one year old or more, or you have used it in a manner where you were driving very aggressively for extended periods of time and noticed a “mushy” pedal? – you very likely need to change the brake fluid. If you have ever (even only once) driven to these extremes and had the brake fluid boil, you have unknowingly introduced air bubbles into the fluid and potentially caused a very dangerous situation with your brake system. The air contained inside the fluid will expand under severe temperature conditions (such as on a road racing circuit) and cause the fluid to lose its ability to do its job properly. If you are not sure whether or not your fluid needs to be evacuated and replenished, have your car examined by a competent technician immediately. It is highly recommended that you flush your brake fluid anyway and replace it with a high performance fluid (Ford’s high performance Dot 3 works very well).

**Pads** are another area for concern. Check your pads (or again, have a certified technician do this for you) and rotors for wear. If your car is over one year old and/or has more than 20 thousand miles or more, you may need new ones. A good rule of thumb is to attend the track event with at least half of the pad life remaining, especially on the front of the car, since this is where most of the extreme braking forces are applied during hard cornering. Although many track veterans such as myself have upgraded many components in the brake system, such as rotors, pads, brake lines, and fluid, take comfort in knowing that the brake system in your particular vehicle is most often sufficient to take you safely through your first event – as long as ALL components have been checked out and are in top working condition.

The **rotors** should also be thoroughly checked out for signs of wear. Typical warning signs include deep grooves, cracks, heat related blemishes, or any other visible wear indications. Additionally, a thorough check of the entire system including the brake lines at all four corners should be performed to ensure the system has no leaks. Any leak, however small and seemingly insignificant can cause catastrophic brake failure on the track and spoil your fun, as well as put you and other participants at risk.

**Tires** – Tires should be examined prior to attending your first event to ensure they are safe and have enough tread depth to last the entirety of the event. Examine your tires closely for visible signs of cracking and/or any other age related issues. Additionally, your tires should have no LESS than 4/32’s (2/32<sup>nd</sup>’s is considered dangerous for a street tire) left on them. The only exception to this rule is when you are running track compound tires. Also, be aware that you will undoubtedly experience higher than normal (especially on the front tires) wear during your weekend track event than you would normally experience in regular driving on public roads. So, be ready to purchase a new set of tires directly after your first event if they are already worn down to the depths mentioned above. One last note on tires, your mileage will vary depending on how aggressive you drive while on the track, as well as how your suspension is setup. But, generally, expect your front tires to sustain some higher than normal wear during your track event. This is not to say you would wear out a fairly new set of tires in one event, rather, it is to say you do reduce the normal life expectancy.

***Suspension System*** – Have your suspension system completely checked out prior to attending the track event to ensure all components are in top operating condition. Such things as leaking struts and/or shock absorbers, leaking wheel bearing seals, worn tie rod ends, etc. can not only cause premature wear on your tires, but even more importantly, may cause you to lose control causing a safety hazard for you and the other event participants.

I am often asked to make a recommendation on upgrades for suspension systems. As a novice, my answer to you is don't go out and spend money on a new suspension system specifically for your first track event – unless you were already planning to do so. In most cases, the stock suspension system (again, as long as all components have been checked and are in top operating condition) are sufficient to take you safely around a road course.

***Cooling System*** – Have your entire cooling system checked for leaks and other signs of age. If your vehicle is one year old or more it may need to be flushed and replenished with fresh coolant as recommended by the manufacturer. Check hoses (both engine coolant hoses as well as heater hoses) for signs of cracking and replace if needed. The cooling system will be subjected to much higher than normal stress while you are at speed on the track; and as such should be in top operating condition. Although cooling system additives such as “Water Wetter” are not necessary, some of us who routinely subject our engines to extreme heat under track conditions use them as added insurance. If you decide to use any such additives, I recommend you check with your dealership service advisor or car care professional and/or your owner's manual for any potential negative issues surrounding such use. The most important thing to remember here is the system should be operating in top condition with absolutely no leaks!

***Other Fluids*** – It is a good idea to at least check ALL of your fluid levels prior to the track event to ensure proper levels of each. If you have not changed your engine oil in a while, it is a good idea to do so prior to the event. The oil will get extremely hot under track conditions, and dirty oil will just lose even more of its important lubricating properties under extreme heat conditions. The transmission fluid as well as the differential gear oil levels should be checked to ensure sufficient levels exist as recommended by the manufacturer. Again, as in the case of the engine oil, if your car is more than a year or two old and you have never had the transmission fluid or the differential gear oil changed, it may be time to do so prior to the event. Check your owner's manual if you have questions on your particular vehicle when it comes to fluid levels and recommended change intervals. Additionally, top off the power steering canister if it needs fluid, again using the manufacturer's recommendations on brand/viscosity/etc.

***Body panels and general exterior condition*** – In general, check all exterior body panels and attached components for signs of fatigue. Such things as bumpers, mirrors, trim pieces, etc. should be properly affixed to the vehicle to prevent them from coming off and causing a hazard to your car or any other car around you while on the track. Common sense should prevail in this case. If the part is loose and about to come off while the car is sitting still, imagine what might happen while you are moving at track speeds?!! Additionally, any major cracks in your windshield or other windows, as well as your side mirrors should be addressed immediately. Be aware that many track event coordinators will ***not*** allow a car with a major windshield crack to participate in the event.

### **What should I wear?**

While you could certainly go out and spend several hundred to over a thousand dollars on a complete Nomex-lined racing suit (this is a very good fire retardant material used in most racing suits), this is not necessary for the purposes of our Novice group discussion. However, if you feel the need and have the funds, I recommend a one-piece Nomex-lined double layer suit. These usually cost as little as \$350.00 and can run as high as \$1000.00 or more.

It is required that you bring some 100% cotton clothing for use while driving on the track. You should come with long pants (jeans or other cotton-only materials are preferable) and long sleeve shirts. In the unlikely event you have a crash and your car catches fire, you would really like to have as much of your skin covered as possible. Synthetic blends are NOT allowed because they will burn much quicker and will melt on your skin (sorry, I know this is an unpleasant thought! ☹). That is why I am emphasizing this, so you will understand the hazards of wearing synthetic material clothing in case of a fire.

One last point concerning clothing; you will want to bring more comfortable clothing for the weather conditions. Clothing like T-shirts and shorts for use in between track sessions. Most tracks have facilities available (some even have showers) for you to change back and forth.

**Shoes** should be thin soled rubber only!! No waffle style sneakers, as they present a risk of getting caught on the pedals too easily while your foot is moving from the brake to the accelerator and back. Nothing big and bulky, but they should be comfortable. Again, as in the case of the Nomex fire retardant suits, racing shoes are available in both low rise and high rise models if you feel the need and have the funds. If you are going to spend on racing shoes, I recommend the high top models so you can stuff the ends of your pant legs inside before lacing up and using the Velcro straps. This helps to minimize the chance of getting a pant leg entangled in the pedals somehow.

**Helmets** are available in many models and price ranges. A low cost model from Simpson, G-Force, or Bell will run approximately \$175.00 or so with nylon padding. On the opposite end of the price spectrum, these same manufacturers also have many models and styles available with Nomex lining ranging in price from \$275.00 to \$500.00 or more. The model and style you select will depend mostly on how often you plan to attend open track events. I recommend a closed face helmet, as these provide much greater protection for the face in the event debris from another car enters the cockpit of your vehicle and strikes you in the head. Although this is a very unlikely possibility, the risk is always there nonetheless. In case you are wondering? I own a Simpson "Bandit" full face helmet with Nomex lining, for which I paid \$375.00 from Jegs. I have interchangeable visors (clear and polarized smoke tint) for it, depending on weather conditions.

Driving **Gloves**, if you have them are also a good idea. They can prevent sweat buildup and your hands getting slippery on the steering wheel. Regardless of the outside temperature, your first few times on the track, you will sweat.

### **Driver/Instructor Communication**

This may be the most important communication you will have. You will start with the MANDATORY drivers meeting first thing in the morning (check your schedule for the time and place). If you miss this meeting, you won't be on the track that day. Period. This is also the time you will be introduced to your instructor.

You need to listen AND understand what your instructor tells you before getting in the car as well as once in the car. Failure to follow instructor instructions may cause an accident or force the instructor to pull you off the track. The instructor is there for your safety and will teach you those items he/she feels you need to work on. There are many more things to do than what you will be able to do your first few times out. Be patient and learn from the instructor and they will build your abilities as they see you are capable of them. Different instructors may have different techniques, learn from all of them.

Remember, your following the instructor's guidance will give you a more enjoyable time and be safer doing it.

### **Driver/Track Communication**

First, let's address flags. Flags in several color combinations are utilized by corner workers and other track personnel to communicate with drivers. These flags come in various color combinations and **MUST BE OBEYED AT ALL TIMES!** Failure to obey flags will not only get you ejected from the track, but may also place you and others around you at risk of having an accident. Here are the colors normally used and their associated meanings:

**Green** – The session is underway (started by the Grid Marshal – the person in charge of flow of traffic onto and off of the track).



**Yellow** (motionless) – Reduce speed and proceed with caution. Usually, something has happened on the track ahead of you. It could be that another car spun out of control and went off the track. You just need to be prepared in case you see another corner worker ahead is displaying another color which may indicate you dramatically decrease speed and/or stop altogether. **NO PASSING.**



**Yellow** (waving) – Dramatic reduction in speed is required! **NO PASSING** during a waving yellow condition, even in a designated passing zone. Obey this flag until you pass another corner where the worker is waving a different color flag or no flag is shown at the next corner worker station.

**Red** – **STOP** on the track in a safe manner and safe position as close to the edge of the track as possible, depending on track and weather conditions. This flag will be displayed in the event of a catastrophic event such as an accident or a major malfunction which causes an unsafe condition on the track. For instance, when a car has a major engine malfunction causing it to spew oil onto the track! It is very important to stop your car safely and **REMAIN** inside until you receive further instructions from either your instructor or the corner worker nearest your location on the track. Try to stop with a corner worker in sight so you may follow their instruction.



**Blue** or **Blue** with a **Yellow stripe** – Be aware of a vehicle attempting to pass you. If you have another faster driver/car behind you, the corner worker may actually roll up this flag and point it directly at you when you pass them by, indicating you should look into your rearview mirror and as soon as you reach a designated passing zone (we will discuss this in detail later), you should give a hand signal to the driver behind you indicating which side to pass you (more details on hand signals in the next section).



**Yellow** with a **vertical Red stripes** – Drive with extreme caution. There may be debris on the track or some other slippery condition may exist.



**White**—does not mean one more lap, but means slow vehicle on track, be cautious.



**Black** – Complete the current lap and then proceed into the pits (or other designated black flag area) for consultation. One of two things has transpired. You have some malfunction on your car which the corner worker(s) feel is unsafe and therefore needs to be looked at, OR (the more likely of the two) you have been seen driving unsafe or in a reckless manner. Failure to obey this flag will get you ejected from the track and potentially from the entire event!



**Checkered** – Designates the end of your current session. Take a cool down lap and then return to the pits. As soon as you see the checkered flag being displayed, you may proceed to slow down to cool your engine and brakes, until you reach the designated end of the lap, which is usually the exit off the track and into the pit area. The Grid Marshall will discuss these areas with you prior to your first session. Additionally, your instructor should be well versed on proper procedures as far as flags and pit areas are concerned.



### Hand Signals

The driver (you or the driver ahead of you) will use these when:

1. Pass on Left – Left arm is held straight out with index finger pointed to the left, indicating “Pass me on my LEFT”

2. Pass on Right – Left arm is held bent upward and over top of car with index finger pointed to the right, indicating “Pass me on my RIGHT”
3. Pit-In Signal – Left arm is held bent straight upward (90 degrees) with a closed fist. Indicates you are leaving the track and heading into the pits. The driver directly behind you must use caution since you are slowing down.

### **Passing Zones**

Passing is strictly controlled by the event coordinator and the passing zones are usually dictated by the configuration of the particular track you are on. There will be absolutely no passing allowed inside the turns or in braking zones, so don't go there – or you WILL get a black flag. Passing zones are predetermined and will be discussed during the driver's briefing meeting prior to the first group entering the track. Additionally, your instructor will show you exactly where the allowed passing zones are on the track, so there is no confusion once you begin moving faster around the course. Most tracks have very few safe passing zones (at least where novices are concerned).

Another very important point concerning passing is to ALWAYS use proper hand signals to indicate your intent. If you are about to overtake a slower driver, you MUST wait until you get a signal from the driver ahead of you AND you MUST also wait until you are in a designated passing zone before proceeding to pass. This also holds true for the driver being overtaken. It is good etiquette to signal the person behind you that you see them by pointing to your rearview mirror. This lets the person behind you know that you see them and acknowledge them and they should expect you to signal them once you have reached a designated passing zone. This will all be covered in detail during your novice group classroom instruction session, as well as with your particular instructor once you enter the track.

### **General Track Etiquette**

We will now discuss a few simple rules concerning general track etiquette. First, you will be required to observe and adhere to ALL of the rules and guidelines set forth by the organization running your event. Remember, although you have paid a fee to enjoy some fun and learning, the track is no place to act foolishly, and the organizers are required to keep everyone in line. SAFETY is of utmost concern!!

**Pit Entrance and Exit** - Please observe speed limits during entrance and exit to the pit and/or paddock areas. Depending on the track and its layout, you should be aware of the proper position to safely enter the track. There will usually be an entrance corner worker directing you to proceed or wait as there may be vehicles already at full speed on the track when you enter – Observe and OBEY this official! Upon exit from the track, please remember to place your left hand outside facing upward with a fist to indicate your intention to leave the main track area. The person behind you should recognize this signal and slow down until you are safely off of the track. Remember to slow down during entrance into the pits, as there are usually people walking around in the pits/paddock areas, as well as possibly slow moving vehicles.

**Corner Workers** – It is considered proper etiquette to acknowledge the corner workers by waving to them during the warm up lap, as well as the cool down lap. This lets them know you acknowledge their presence and respect the important duties they are performing, as well as orient you to the corner worker locations to watch for flags. Additionally, it lets them know that you appreciate them and

makes them feel needed. Remember, in the unlikely event you have an accident while enjoying some track time, one of these corner workers may likely be called upon to possibly save your life!!

**Respect For Other Participants** – Please be respectful of other participants (and their belongings) and the track’s facilities. Most folks who attend these events will be more than willing to help you in the event you experience a problem with your car. If you need to borrow a tool, remember to ASK first and then RETURN it! And if you have invited guests, make sure they understand the rules and adhere to them as well. You are responsible for your guests.

### **Lessons Learned**

I will now share with you some lessons learned since I first began this open track odyssey some 27 months ago. First of all, the speeds you can and will carry through the turns feel MUCH faster inside the car than it may seem to someone watching from the grandstands or on TV. The G forces you and your car will experience in the turns will send chills down your spine. Additionally, the speed you will WANT to carry on the straights will position you for some pretty scary moments in the turns if you are not ready for what may happen if you miss the turn. This is why it is very important for you to be alert at all times and above all, listen intently to what your instructor is telling you. Your instructor will most often have several years of open track experience and more importantly, they usually have several hundred miles or more of experience on the track you are now on. I know some of you may feel you don’t need instruction or you may feel you know more than your instructor or are a better driver. Well, let me tell you right now – Get over this before you come to the track!! If you come with a cocky attitude, you will likely get into trouble on the track and possibly endanger yourself and/or someone else around you. “You need to go slow before you can go fast”. Over time, you will understand what is meant by this.

Typically your car is much faster than you are able to drive it right now. And you may never get up enough nerve to actually push it to the limits it is capable of, but you know what? Who cares?!! It is all about staying *safe* and having fun.

This brings me to the next lesson learned. Safety should be first and foremost in your mind at ALL times. The first thing you should do is make sure your car is in top operating condition to take you safely around the track. Next, if you are hell bent on spending money, I would spend it on safety gear long before any other performance enhancing modifications. Such things as fire retardant suits (lined with Nomex), fire retardant gloves and shoes, fire extinguishers, etc. should take precedence over any other expenditures. If you must spend on your car, I would recommend spending it on anything that will make it safer; such as good tires, brake pads, high temp brake fluid, a roll cage, fire suppression system, and a head and neck restraint system, etc.

This sport is all about being smooth with your every movement. Unlike other driving venues such as drag racing which require you to have lightning quick reflexes during shifting, open track requires smoothness in turning the wheel, in downshifting, and in braking to maintain control of your vehicle. Physics play a huge part in this sport as the weight transfers from front to rear and side to side during your downshifting and braking points. Taking things slowly to begin with and making sure all of these movements are smooth will ultimately allow you to go faster quicker. The speed will come once you have mastered the techniques of being smooth. As a novice, you will be required to have some classroom time with an experienced instructor who will talk a lot about being smooth – so listen up!

In summary – this is **NOT A RACE!** We are not here to see who finishes first. There are no trophies or any other prizes for the person with the fastest lap times. If you feel you have the skill level and the time and money to actually go out and race, we can have a totally different discussion at another time about



this. I have friends who do this and they would be most gracious in discussing what things are involved in this sport. Additionally, organizations such as the Sports Car Club of America (SCCA) and the National Auto Sport Association (NASA) offer competitive classes with several different levels of expenditures to fit your particular budget.

Final thoughts: Your mental attitude is key to you being safe and having fun

Use this opportunity to improve your driving skills.

When you come off the track – open your hood,

**DO NOT use your parking brake.**

Make an overall general inspection of your car.

Once cooled down, check your lug nuts with a torque wrench.

Please do not hesitate to contact me directly if you have particular questions or concerns over anything we've discussed here. I can be reached at 918-697-8082 or by email dellcobra@yahoo.com..

I hope to see you at a track event some time in the future!

Have fun and keep the shiny side up!!!

Dell R. Hughes