

LDRC Novice Training 2024



BSQUARED

Presented by:

Patrick Alex of Bsquared Motorsports / Team Nummi



Also a big thanks to Robin Virtue for his contributions to this course

Tech & Registration Day

1. When you arrive for your car's Technical Inspection, only one team member is required to be with the car.
2. All other drivers must check-in themselves to registration with their race suits. You may also be quizzed on our rule book so be ready.
3. It is the responsibility of the captain/drivers to make sure all crew members are aware of any rules that pertain to them. (This document can be shared)
4. During tech inspection of the car, a staff member from LDRC will go over our Technical/Safety Form with you and confirm the legality and safety of your race car. Once completed, you will be issued a LDRC Tech Inspection decal confirming your clearance.

Race Day

1. Drivers meeting is at 8am
2. Call to Grid happens approximately 10-15 minutes before Race Start.
3. Race Start is at 9am
4. Lunches for the corner marshals get delivered on a hot track by our Fire/Rescue crew(s) so there will be a brief time in the middle of the day that we will be following those vehicles with white flags. Do not ever pass a moving emergency vehicle unless they are waving you by or they have their turn signal on.
5. Checker flag will be dropped at 5pm and we will immediately line up the top three cars in every class around the podium and do the awards ceremony.

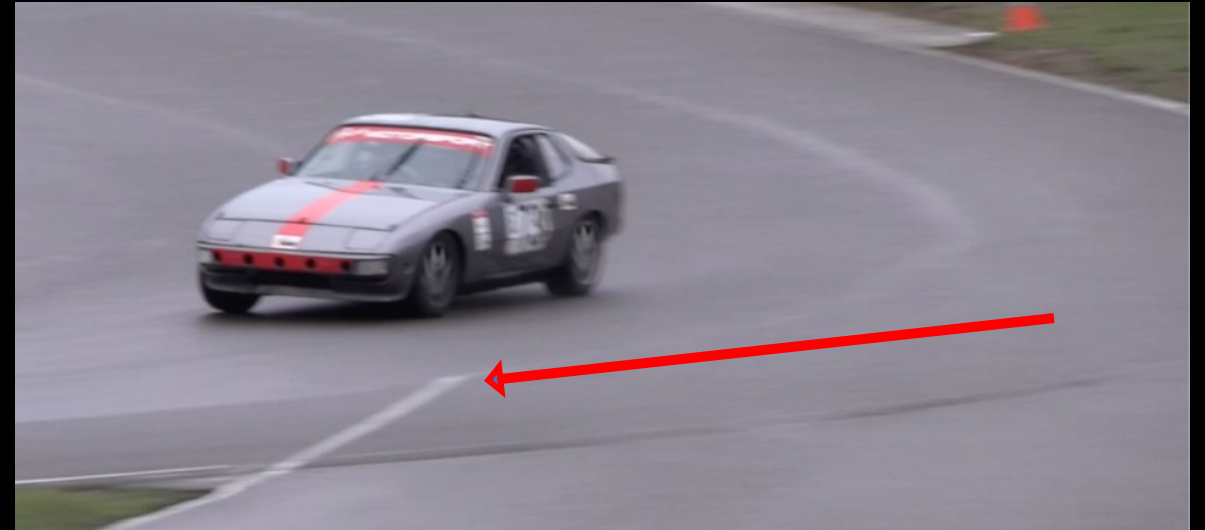
Race Suits

- 1. Helmet** - Driver's Helmet must be a full-face Type SA (sports application) helmet, Snell SA 2015 or SA 2020 in good condition. No Snell M (motorcycle) or Snell K (karting) helmets allowed.
- 2. Hans Device** - A Head & Neck Restraint System is mandatory for all drivers, such as HANS®, Leatt® NecksGen® etc. The Head & Neck Restraint System must have been manufactured or recertified within the last five (5) years (2017 and up). No foam donuts! Drivers can share these devices.
- 3. Suit** - Racing Suits must be in good condition, no rips/holes and have valid SFI (3.2 A/1, A/3, A/5, A/10, A/20) or FIA (8856-2000 or 8856-2018) certification and may be single or two-piece.
Single-layer SFI 3.2A/1 or 3.2A/3 suits and multi-piece suits can also be worn with SFI (3.3) or FIA (8856-2000 or 8856-2018) certified fire-retardant underwear (e.g., Nomex or Carbon-X).
- 4. Socks** - Socks, Shoes, and Gloves are required and must be fire retardant and SFI (3.3) or FIA (8856-2000 or 8856-2018) rated.
- 5. Balaclavas** - are strongly recommended but not required unless you have facial hair or long hair that is not covered by your helmet (applies to men & women). SFI (3.3) or FIA (8856-2000 or 8856-2018) required.

Fueling & Pit Lane Procedures

1. All fuel stops are a minimum of 5 minutes and must take place on pit lane. Pit stops without fuelling involved will still receive the timer at Pit-In and Pit-Out for consistency but the stop can be as short as needed if no fuel is involved.
2. Kill switch must be off at all times while the car is being fueled.
3. Only 1 jug allowed over the wall at a time. No staging jugs on the wall.
4. Absolutely no working on the car while it is being fueled. Not even cleaning the windshield or checking tire pressures. DRIVER CHANGES ONLY. Idea being it is best to keep anyone not necessary to the pit stop away from a hot race car + fuel source.
5. All crew members over the wall during fueling need to be in a full Nomex race suit with visors down.
6. Maximum of 5 members over the wall during fueling.
7. The crew member with the fire bottle should be facing counter traffic (to see if any race cars are driving towards them in the pits) and should be a minimum of 8ft from the person fueling the car, with the fire bottle pointed directly at the fueller, with the pin pulled in the extinguisher and full attention on the fueling.
8. Drip pans are mandatory when fueling.
9. Any spills must be cleaned up immediately after your pit stop has been completed using broom/dustpan and some sort of absorbent.
10. Pit lane repairs are limited to 30 minutes. If repairs will exceed 30mins, we request that it be done in the paddock.
11. If there's a tire off the ground and work is being done to the car, there must be 1 jack stand for each tire off the ground.
12. No children under 12 and no pets in cold pits. Nobody under 16 in the hot pits.

- **Blend lines - critical!** Where are these & what do they mean?
- Do not cross the blend line early or it will be considered unsafe entry to the track
- Same rule applies coming off the track, strictly obey the blend line entering pits
- Come to a full stop at the canopy at both ends to receive or give back your timer.



FLAGS

GREEN – The race is on! Remember that the absence of a flag at a station also indicates green.

STANDING YELLOW – Localized incident off the racing line. Reduce to 70% speed. Do not pass or you will receive a black flag.

WAVING YELLOW – Possible danger on or near the racing line. Reduce speed to 40% speed. Do not pass or you will receive a black flag.

FULL COURSE YELLOW – Two yellow flags displayed at every occupied flag station. This indicates a scenario which requires the entire field to slow down to 40%. It is expected of the race leading car to bunch up the pack behind them. During this time, pit-out will be closed until the pace car and pack have passed pit-out. After all cars have passed pit-out, it will briefly be opened and all cars will be released.

RED – Safely pull to either side of the track (but not off the track). No working on the car or fueling under red flag. If you are in the process of fueling when a red flag happens, simply replace the fuel cap and step away from the car until pit marshals give the OK to continue.

WHITE – Indicates a slow moving or off-pace vehicle, sometimes a race-car with a mechanical problem, but often a pace car or emergency vehicle (EV). Do not pass a moving EV without a wave by or a turn signal.

RED/YELLOW STRIPES – Indicates there is debris of some sort on the racing surface. Could be fluids or someone's drivetrain.

BLUE – This is known as the passing flag and is simply an information flag to let you know that faster traffic is approaching.

BLACK WITH ORANGE OR RED CIRCLE – Often referred to as the "meatball" or Mechanical flag, this flag is intended to make a car aware of a possible mechanical issue they might not be aware of. Pull into the pits and we will advise you of the issue we are seeing.

BLACK FLAG (CLOSED) – Referred to as the "furled" black flag. Simply a warning that you did something unsavory. No need to come in.

BLACK FLAG (OPEN) – If you receive it, on your next lap around, pull into the pits where you will be advised by the Black Flag Steward of the issue and resolution.

BLACK FLAGS ALL-AROUND – Black flags are displayed at all corner stations indicating that we want all cars to carefully return to pit lane and line up at Pit-Out to await further instruction. No working on cars, driver changes allowed (only) and one crew member may approach the vehicle with refreshments for the driver.

CHECKERED FLAG – Do a cool down lap and pull into the pits.



Driver Expectations

1. All driver stints are to be a maximum of two hours or 120 minutes, but any driver can drive multiple stints per day with a minimum of a 60min break between.
2. Blend Lines – it is imperative that you do not cross the blend line early.
3. Re-Entry – if you end up off track, please wait and re-enter carefully when there is no traffic. We will black flag you if a re-entry is considered unsafe.
4. If your car has a mechanical failure on track or you are leaking oil, please pull onto the grass and await a tow. It's better that these fluids end up in the grass vs on the pavement.
5. Do not get out of your car on a hot track unless you believe it is on fire. Be sure to hit the kill switch and pull the extinguisher cable on your way out.
6. If you are being towed, it is very important that you apply a SMALL amount of brake pressure to keep tension on the strap.
7. If you're feeling fatigue or dehydration, don't be a hero. Radio to your team and come in early for a driver change.

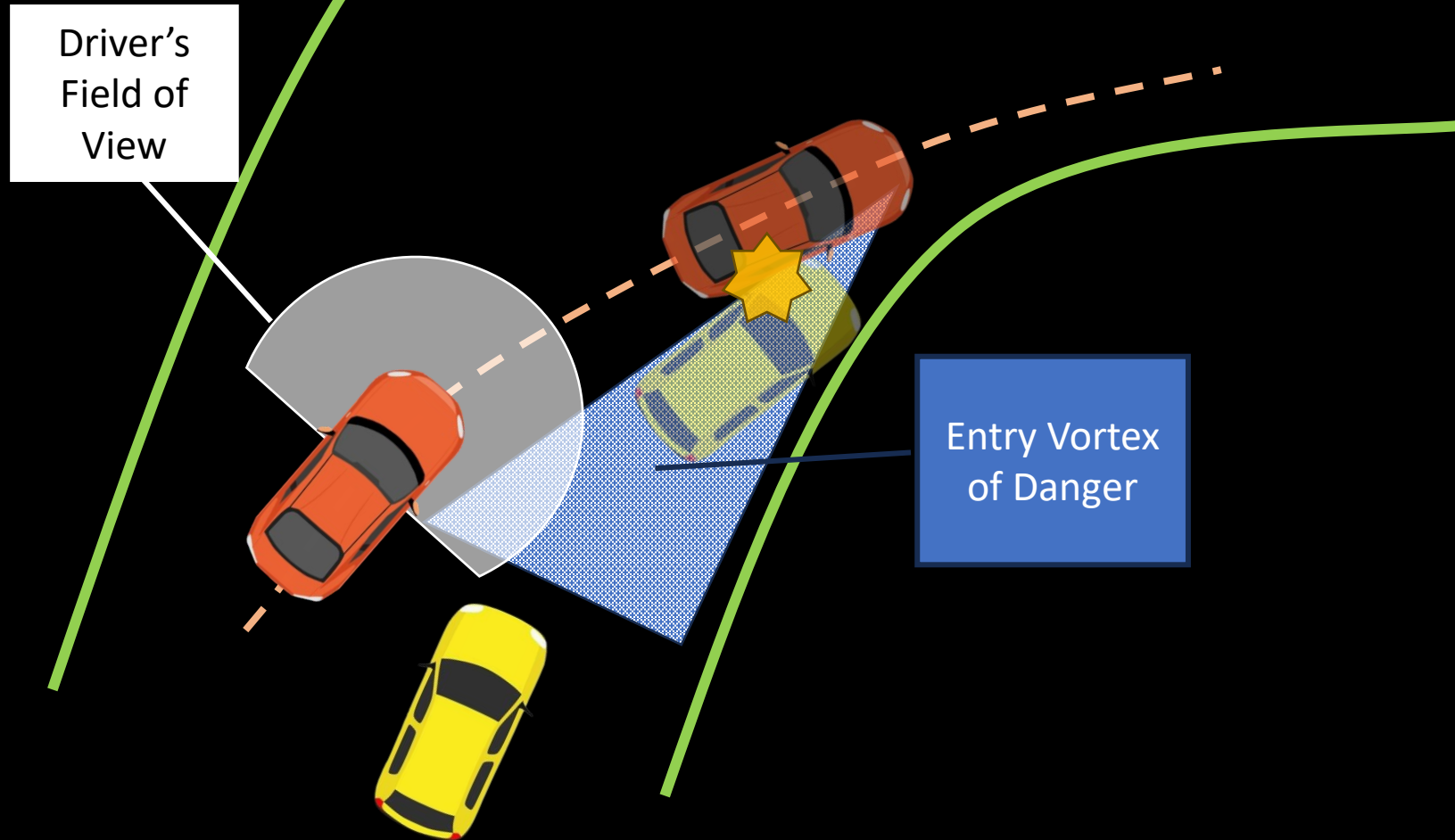
Driver Etiquette / Unspoken Rules

1. Golden Rule! No Contact!
2. It's every driver's responsibility to know what's going on around them at all times!
3. "Hold your line" does not mean faithfully take the true racing line even though you see a MUCH faster car in your mirrors. Know your surroundings and give space when needed. For more information google "The Vortex of Danger"
4. You only earn the right to racing room if you successfully align the front wheels with the car you are trying to pass BEFORE THE TURN-IN POINT, otherwise the trailing car must back off and follow or it may be seen as a dive-bomb by a corner worker.
5. Whoever is ahead at corner entry owns that corner unless cars are side-by-side in which case both cars adjust speed and give room but continue racing until one car is clearly ahead.
6. Racing room is defined as minimum ONE (1) CAR WIDTH PLUS 6 INCHES to the edge of the paved surface.
7. Your car should be under control at all times. It is not your corner if you didn't arrive there safely.
8. If you aren't fighting for position (on the same lap) don't take unnecessary risks. Some drivers feel the need to race every car in and out corners regardless of class, but you could make a mistake and ruin the race for your team and/or others.
9. All drivers must try to achieve minimum 1 car length of a gap before moving back onto the racing line after making a pass. It's endurance racing, there's no need to cut over quickly and shave the other guys bumper.
10. It is your duty as an LDRC driver (or crew member) to help correct any issues you see both on track or on pit lane by letting race control know (within 3 hours of the incident)

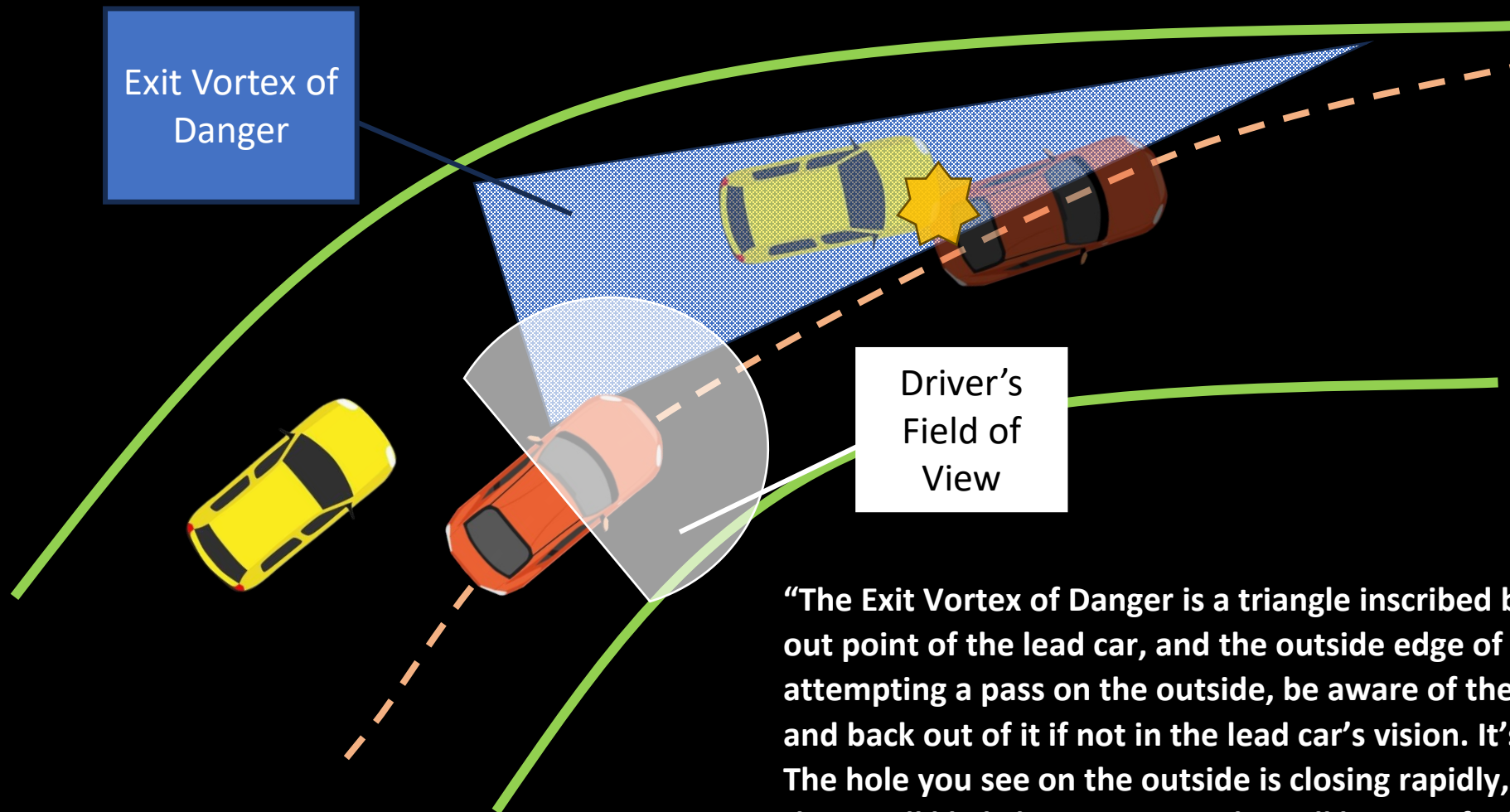
For the offenders, we have the new "16/16 Rule". (1st offence – 16hr probation. 2nd offence – 16hr suspension.)

The Vortex of Danger

“The Entry Vortex of Danger is a triangle inscribed by the turn-in point of the lead car, the apex, and the inside edge of the road. When overtaking, keep out of the Vortex of Danger. It’s too late to pass. The hole you see is closing rapidly, you are in a blind spot, there will likely be contact, and it will be your fault.”



The Vortex of Danger

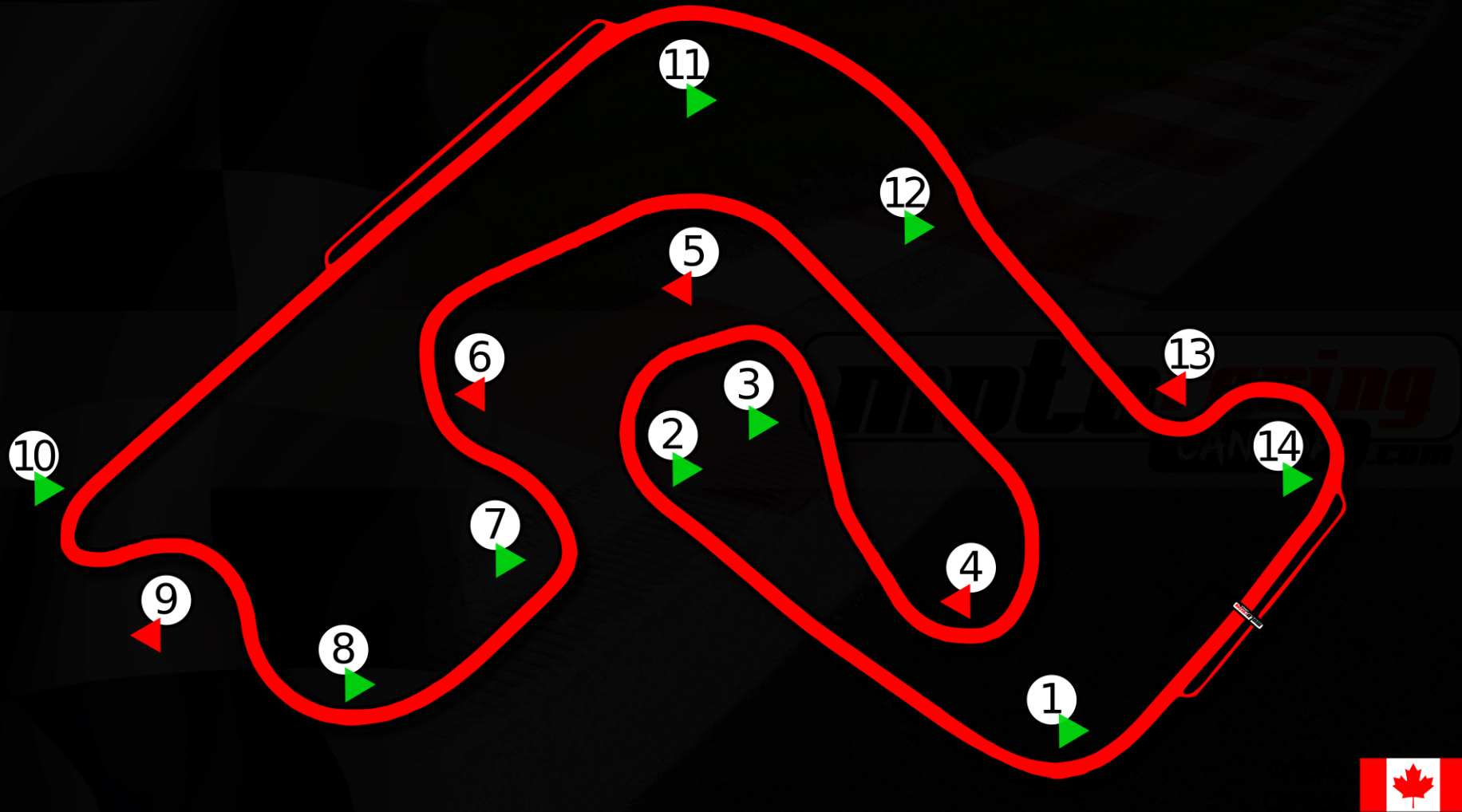


Exit Vortex of
Danger

Driver's
Field of
View

“The Exit Vortex of Danger is a triangle inscribed by the apex, the track-out point of the lead car, and the outside edge of the road. When attempting a pass on the outside, be aware of the Exit Vortex of Danger, and back out of it if not in the lead car’s vision. It’s too late to safely pass. The hole you see on the outside is closing rapidly, you are in a blind spot, there will likely be contact, and it will be your fault.”

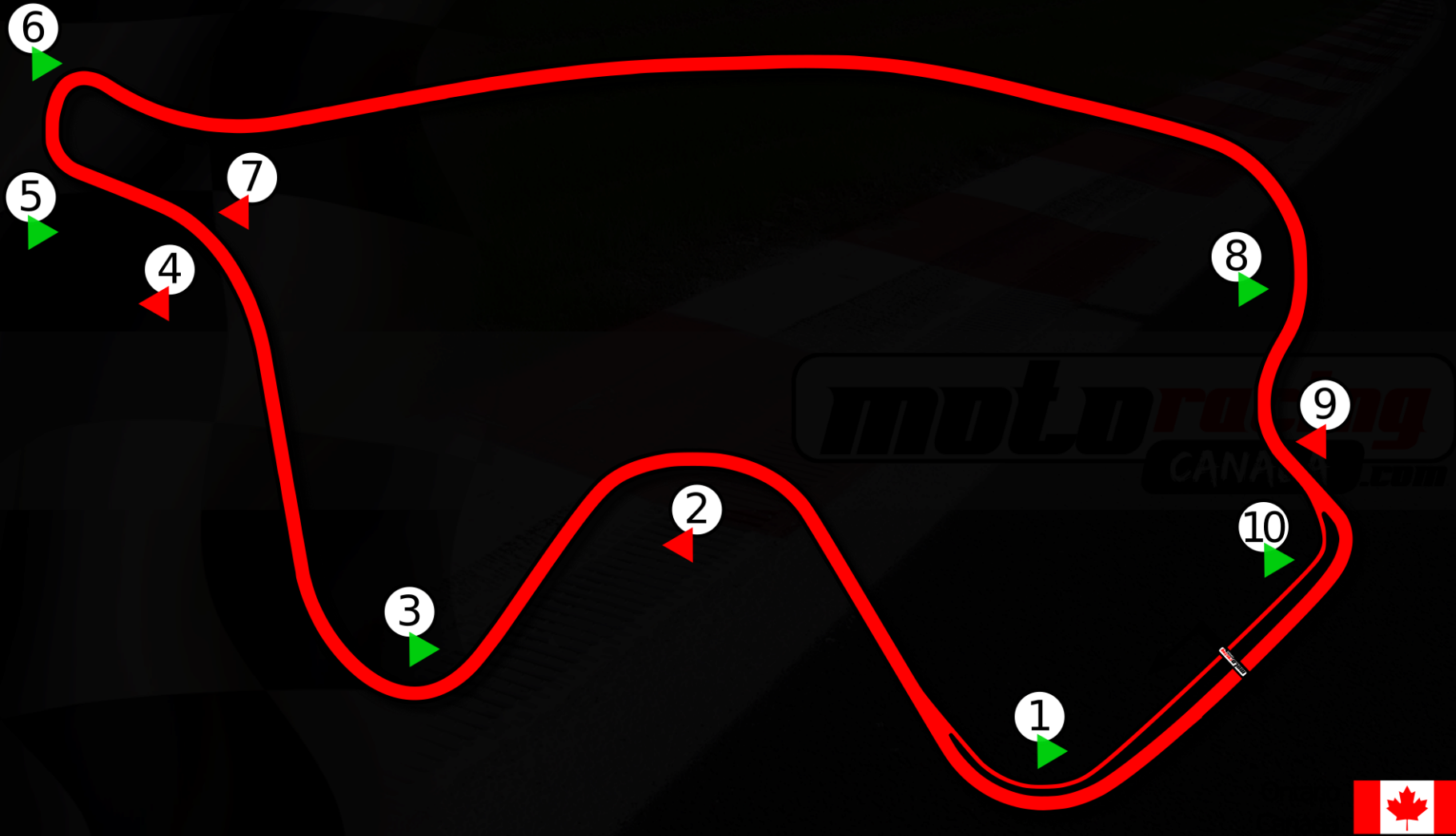
Shannonville Motorsport Park



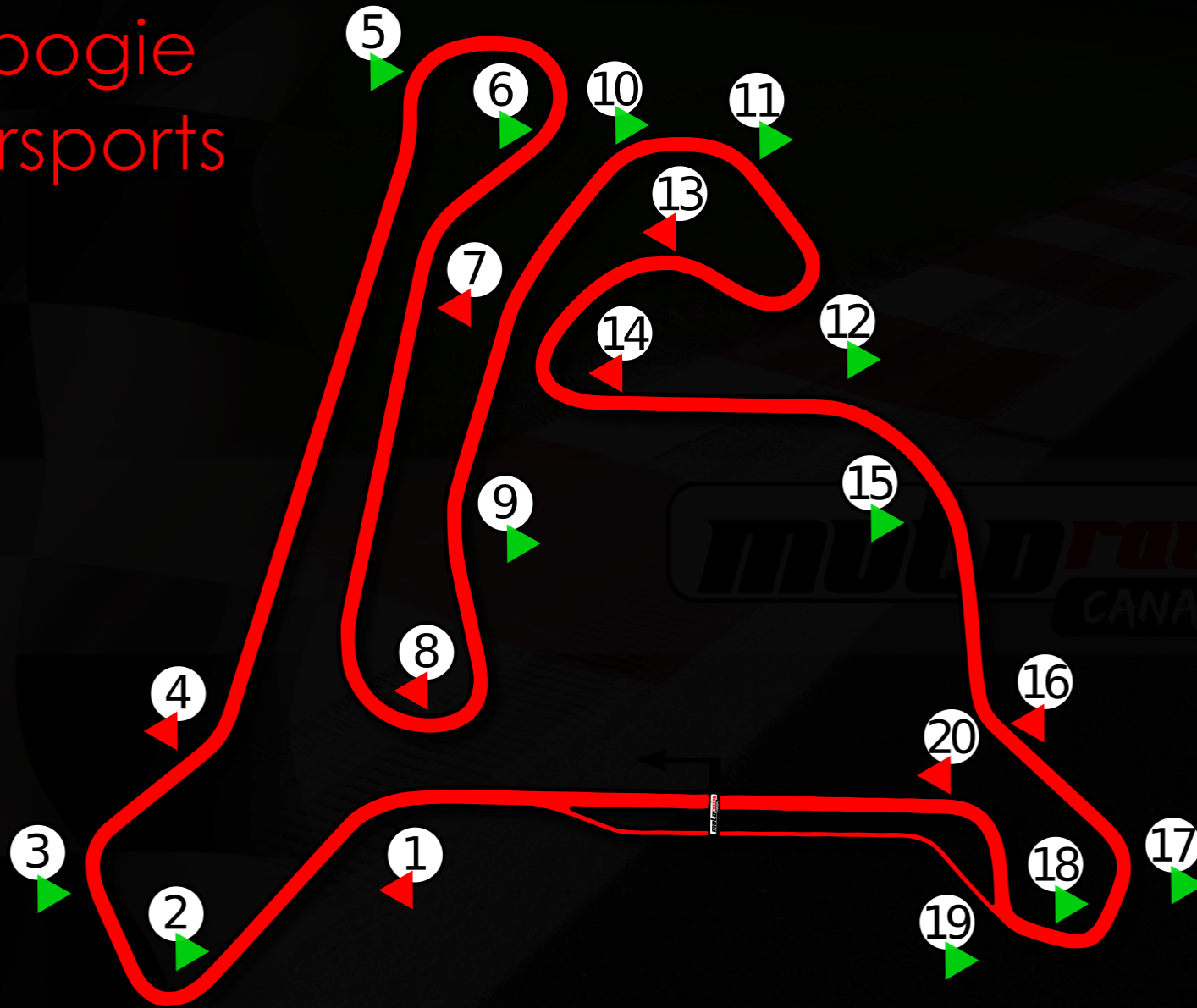
1. Shannonville – Shane Hutton – Scrap Denial - <https://www.youtube.com/watch?v=qtIckAyByEE>



Canadian Tire Motorsport Park



Calabogie Motorsports Park



3. Calabogie Motorsport Park – Mike Luitt - <https://www.youtube.com/watch?v=C11n-m9G80U>
(two good examples of correcting the car in T8 & T16)

Tips for the track

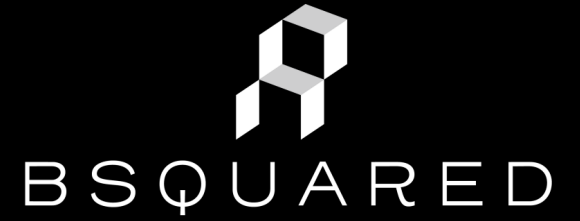
1. No sunscreen if you are a driver (risk of it getting into your eyes while your helmet is on is high)
2. Paddock parking and Pit-stall assignment is first come, first serve (no reserving a space)
3. Make sure every driver on the team has practiced getting out of the vehicle quickly (in case of emergency)
4. Proper seating position is very important (drive comfortably, don't drive with a death grip on the wheel)
5. Hydration prior to your (long) driver stint is very important
6. Make sure the pin has been removed from your fire system prior to going on track
7. Pace car will lead cars around for two laps so we can check all transponders prior to green flag.
8. Don't be a hero on the first few laps. Get comfortable with your car first.
9. Starting at the back of the field is a great idea if you are a bit nervous. Let the experienced guys take off in front of you, leaving you time to get comfortable.
10. Be consistent and predictable for the faster cars trying to pass you (no blocking, ever)
11. Make it a habit to always glance at the corner stations (missing a flag could be catastrophic)
12. Pit-Lane speed is 40kph or 2,000rpm in 2nd gear
13. Always stop at pit-in and pit-out for a timer. Failing to stop results in a penalty.
14. Race results are broadcasted to Race-Monitor (mobile) and also on the LDRacing.ca website (browser)

Tips for the track

- 15. Regular checks of mirrors (and flag stations) for situational awareness
- 16. Drive your line, not the line of the guy in front of you. If they make a mistake, so will you.
- 17. Smooth is fast
- 18. Consistency is key
- 19. Keep it fun



LDRC 2024 Sponsors



RCLUB

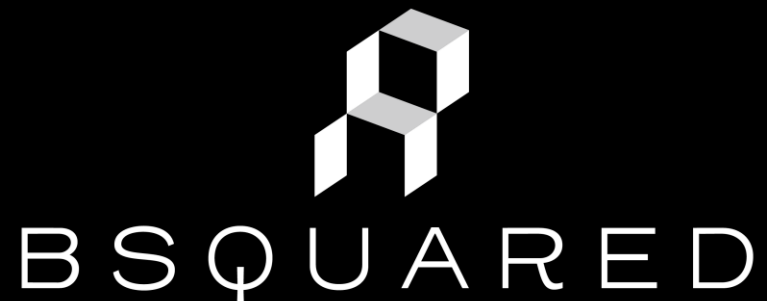
2024 Top Novice Prize Pack

The novice team that finishes the season with the most points will receive a driver coaching consult for four of your drivers, provided by BSquared Motorsports (\$460 in value)!

Tips to Winning: **SURVIVE!** The series awards points on laps completed, and we want to promote safe racing, so make sure your car is reliable and your team keeps it clean out there!

Requirements:

- Must be a new team with no more than 3 events entered in previous years
- Must be able to provide data (datalogger or video acceptable) for each driver, one track per driver

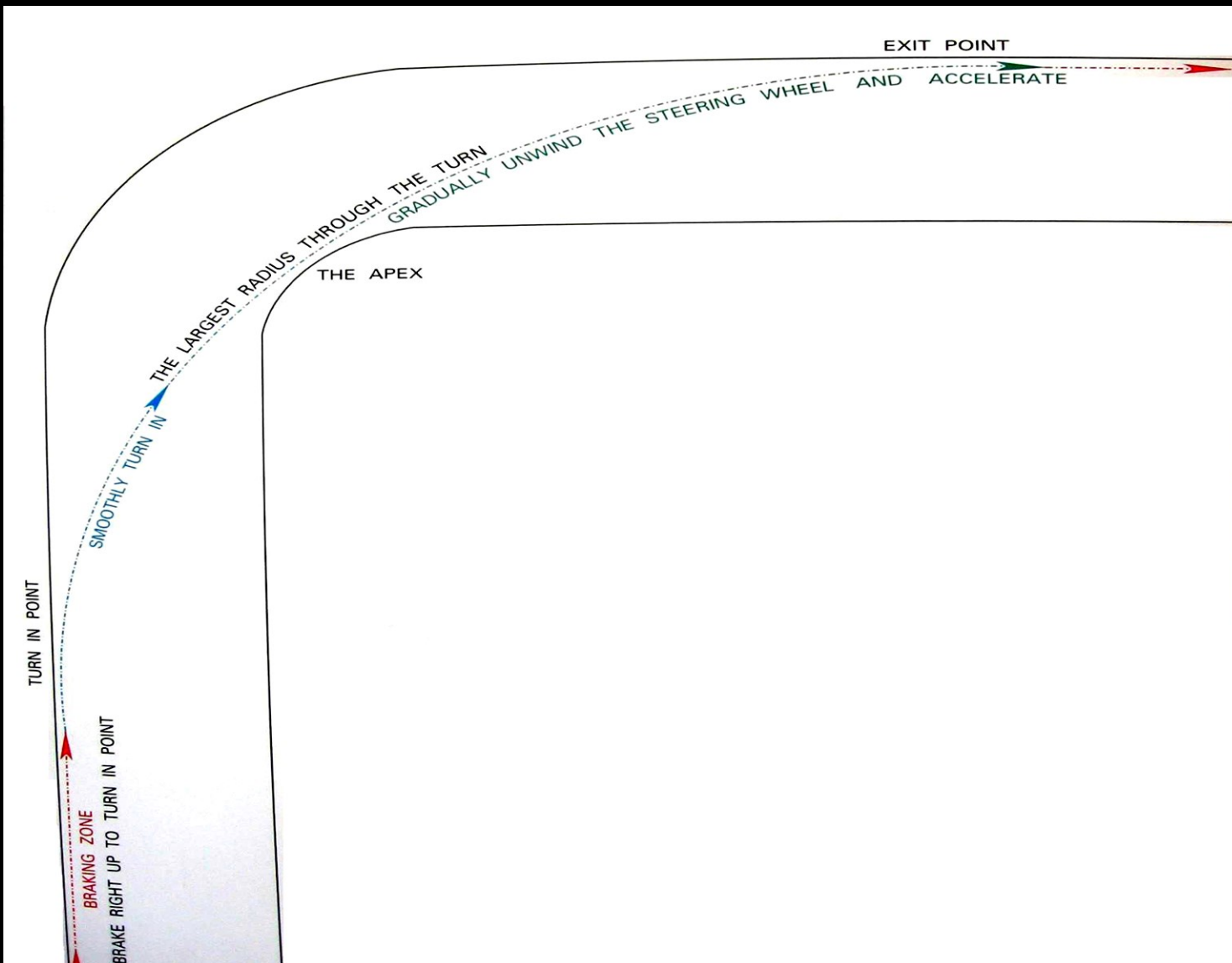




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At this point

1. Anyone in this meeting that has raced on track before (but in a different series) can leave
2. Anyone who has never been on a track before will stick around for Part-2



1. Look ahead – is it clear?
2. Brake when straight
3. Downshift (if needed)
4. Turn in
5. Balance the throttle
6. Apex – critical!
7. Accelerate, unwind

Do or think about these steps for every corner!

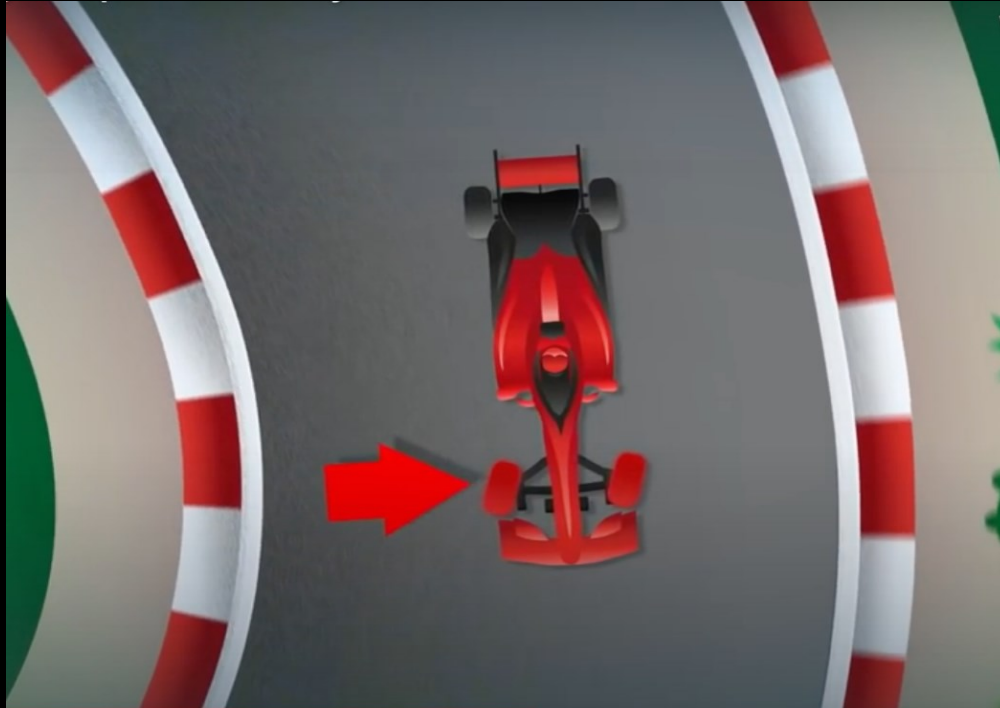
Dynamics of Cornering

Vehicle Weight Transfer

- Every input will change the weight distribution (weight on each corner)
- Making a sudden steering correction at high speed (low grip levels) can be dangerous
- Smooth is fast (and more safe)
- This is critical for grip levels



Understeer or Push

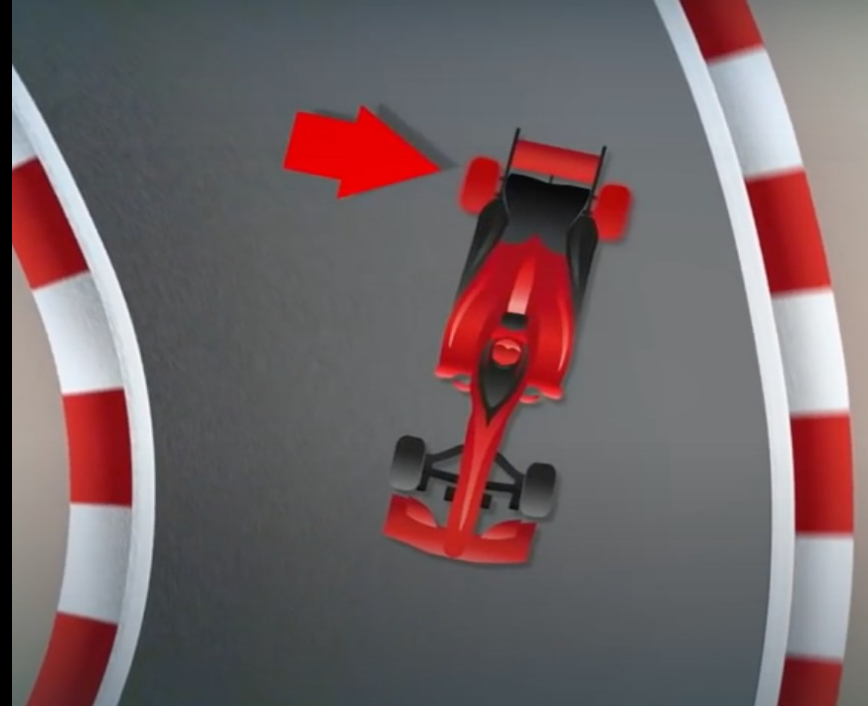


Cause: Too fast into the corner – most common

Correction:

- Ease off the gas
- Weight transfers to the front
- Unwind wheel slightly to reduce slip angle

Oversteer



Cause: Acceleration on RWD or braking while turning

Correction:

- RWD - counter steer into the direction of the slide.
- RWD - ease on the gas to move weight back
- FWD - ease on the gas to move weight back