



2023 Road Course Racing  
**COMPETITION**  
**LICENSING SCHOOL**

Conducted By The Northern Alberta Sports Car Club



# Classroom 1 – Know the Flags (Test!)

## On Track Session 1– Learn the Line

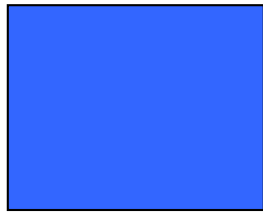
- Optimum path called “the line”
  - maximize radius of corner
    - general rule, some corners are special
  - Primary focus is on allowing early acceleration
  - Secondary focus is on carrying maximum corner speed
- Importance of braking points
- In-car instructors may ask to drive student’s car to demonstrate for the first 3 laps or so

# Flags and Their Meanings

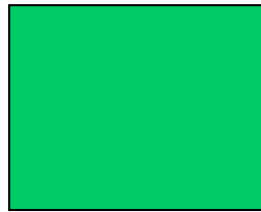
- Watch the Flag presentation
- These slides are just place holders
- Read the notes to prepare for the written exam
- <https://nascc.ab.ca/wp-content/uploads/2023/05/Flags-of-WCMA-copy.pdf>
- Basics
- Yellow caution flag
  - Slow down until you pass the incident
- Red Flag
  - Come to a safe controlled stop off the racing line
- Black Flag
  - Chief Instructor needs to talk to you about your driving on track – come in to pits

# Safety

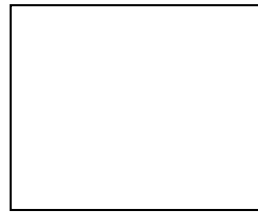
- Flags and signals:



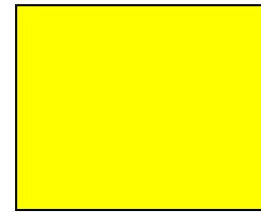
Blue - overtaking



Green - Road clear



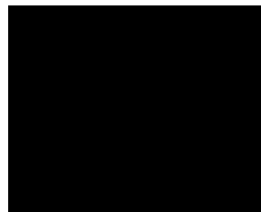
White - Slow moving vehicle



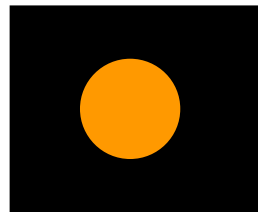
Yellow - Danger



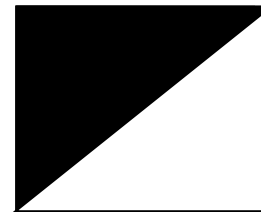
Red - cease racing  
stop



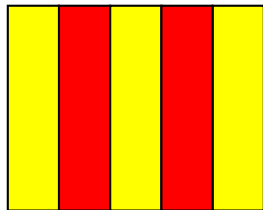
Black - report to  
clerk



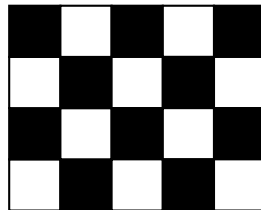
Meatball - Mechanical  
failure



Black/White - Warning



Yellow/Red - Change  
of adhesion



Chequered - End of race

## Classroom 2 - Safety

### On Track Session 2 – Focus on braking

#### Importance of braking points

- the braking points
- the acceleration points
- Reinforce and refine “the line”
  - Consider car attitude
    - – angle of attack to corners

# Safety, Health & Well Being

- What's wrong with this picture?



# Review track protocols

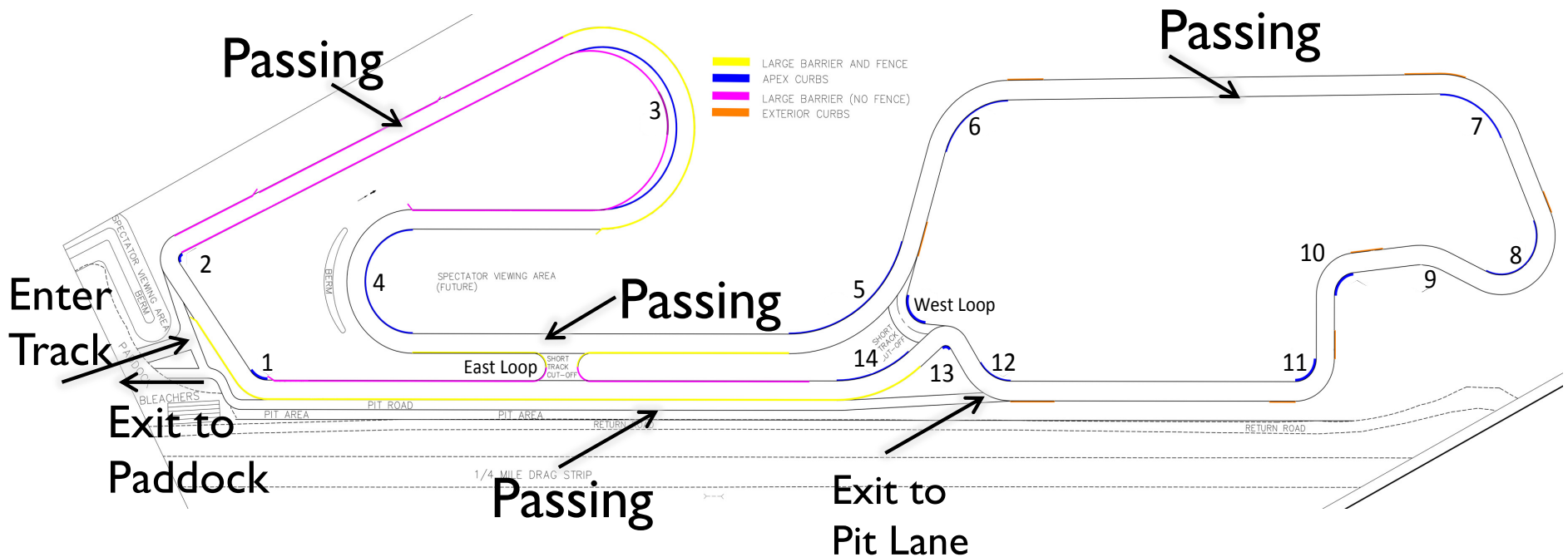
- Helmets for all sessions
- Always wait at track entrance to be waived on
- Enter the track under acceleration and keep to outside
- When being passed – point the other driver by to pass you
  - on the inside line of the straight
  - You stay on the normal line along the straight
- Passing zones – must point by to be passed, ease up to allow a faster pass –
- If wheels off – mandatory pit stop
  - 2 wheels off talk with your instructor in pit lane
  - Spin - talk with Chief instructor in the pit lane
  - 4 wheels off – talk with Chief Instructor in the pit lane

# Safety – in Paddock & Hot Pit lane

- Pit and Paddock safety:
  - Paddock speed is dead slow; 15 km/hr.
  - Pit lane & Paddock crew fully clothed,
  - nomex recommended for refueling in Paddock
  - Smoking is not permitted in the pit lane or when fueling
  - Cars must enter the track through the pit
  - Cars must exit the track through the dedicated track exit
  - Cars may not be driven backwards in the pit lane.



# Track layout for protocols

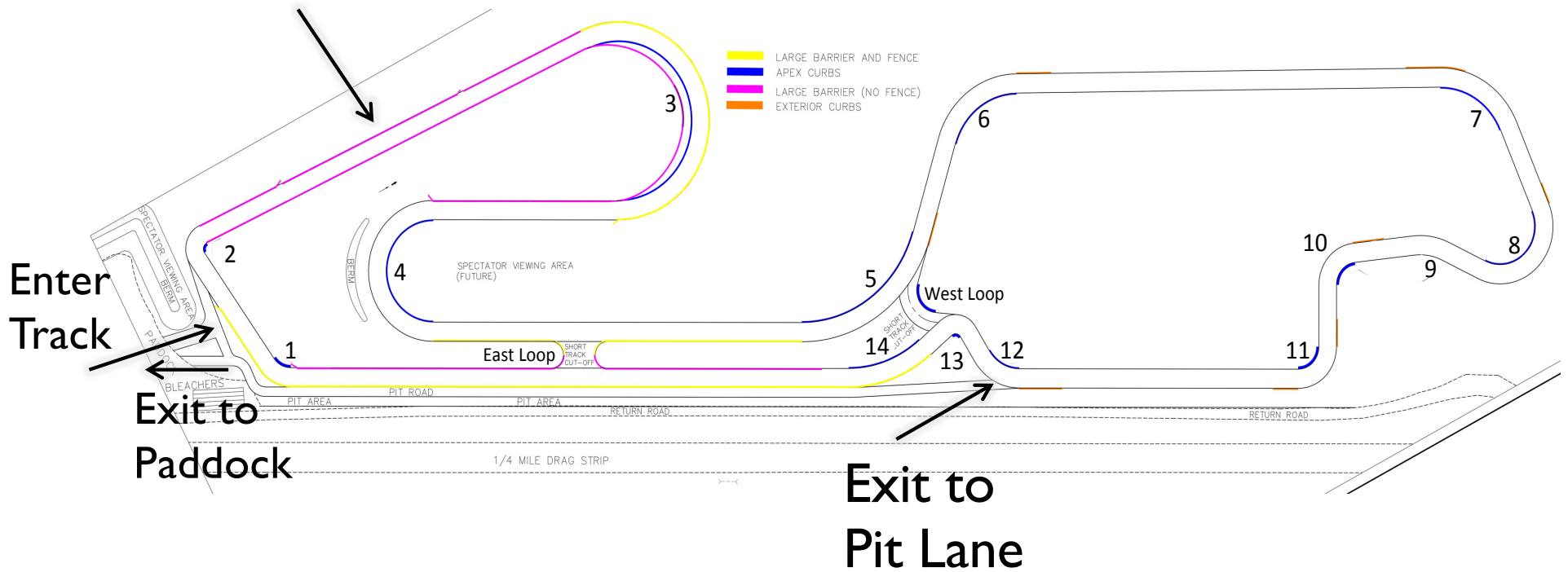


Passing requires a point by

Remember there will be several cars in some passing groups due to lead/follow

# Lead/Follow protocols

## Lead/Follow position switch



# Safety – on track

- On track safety:
  - Obey flags & signals
  - Overtaking vehicle - responsible to pass safely
  - Yield right-of-way in lose-lose situations.
  - No vehicle may ever move counter to the normal direction of travel.
  - Rejoin - when other traffic has cleared the racing line.
    - If you are off track you have already compromised your race, do not compromise others when re-entering

# Most Important piece of Safety Equipment...

- What is the most important piece of safety equipment you will need???
- Helmet?
- Safety belts?
- Harness?
- Roll Cage?



# ...YOUR MELON!!!

- When racing, if your brain says something “just might not work” - LISTEN to it!
- More races have been **lost** in the first corner or lap than have ever been **won**!
- In the paddock if you have to say “what could go wrong?” then think about it again.
- At the end of the day, we all want to go home with our cars and bodies in one piece.

Focus, focus, focus  
easy to loose – results can be deadly  
Fernando Alonso in F1 early days



# Safety – Your Health

- Medical Safety:
  - Fitness
  - Hydration
    - Actively focus on drinking water and staying hydrated
  - Don't race fatigued
  - No drugs, alcohol, etc.
  - Medical conditions – inform appropriate parties if necessary (ie: ambulance personnel)

# Safety – on you and in car

- **Safety Equipment - *outlined in the Race Regulations:***
  - Snell SA 2010, 2015 & 2020 helmet and HANS device.
    - 2020 spec out now, 2010 helmets expire in 2023
  - **Approved fire retardant single piece driving suit**, gloves, shoes, socks and balaclava
  - 5 or 6 point racing seat belts
    - SFI belts expire every 2 years, FIA every 5 years
  - **Car preparation according to class:**
    - Fuel cells, window netting, fuel line specs, seat requirements, roll-cage specs, etc.



## Classroom 3 – Race Driving

### On Track Session 3 – Emphasis on Vision

- Importance of **VISION**
  - Car goes where you are looking
  - Look further down the track, look ahead
  - Look **past** the turn-in to apex when turning in
  - Look **past** the apex to track out, before the apex
  - Look **past** track out toward the next corner once at the apex.
- Awareness – towards situational awareness
  - Green flags thrown - students expected to call out when they see them – feedback on how quick they are
  - Towards end, students say what car is behind, what is front

# Race Driving – others are Faster

- There is no HPDE instructor in the car, you must teach yourself to be faster
- Tools – learn from other drivers
  - where do they apply the brakes?
  - where do they seem to get on the throttle?
  - where are they trail braking?
  - is their line different at corner exit or entrance?
  - are you faster at one corner and them at another?
- Try to keep up with them, work yourself harder

# Race Driving – Tools to Improve 83

- Make the straights longer (full throttle, WOT)
  - distance you are at WOT starts in corner, ends under braking
  - use more car control, opposite lock, weight shift to rear wheels, later apex, trail braking, etc, to support WOT
- Use brakes to go faster
  - brake modulation with trail braking can balance weight transfer to give better turn in and corner speed
  - later braking carries speed for longer, but has the smallest pay back in lap times, and largest risk (**caution**)
- Use your butt
  - feel the grip, feel when you are losing grip
  - get every corner to the point you are just losing grip
- Be Precise
  - Hit your marks for turn in, apex and exit
- Relax
  - find a flow to your driving, don't stress over each corner and each mistake

# Sergio Perez – get on throttle earlier

Extend the length of the straights – given by distance from on throttle to off throttle

Improves precision of using all the track, controlling car attitude, so allows him to more aggressively getting on the throttle

FI Sergio Perez at Barcelona

# Race Driving – Tools to Improve

85

- Extend your vision further down track
  - this is a constant effort
  - it is easy to drift back to driving off your hood
- the car goes where you look
- As Brooke says “of course I saw the wall, I hit it didn’t I”



# 5 Basic Driving Mistakes

- 1 - Improper Driving Position
- 2 - Failure to Look Ahead
- 3 - Apexing Too Early
- 4 - Improper Braking Technique
- 5 - Improper Downshift Technique

Contrast with the F1 drivers we watched

Doing these things perfectly earns them their fastest lap

# Classroom 4 – Racing Starts & Passing

## On Track Session 4 – weight transfer

- Importance of balancing the car
  - Applying brakes, throttle or steering shifts weight (load) around the tires
  - Smooth application of inputs helps keep the car balanced
  - Abrupt inputs unsettle the car, reducing grip
  - Braking loads the front, enhancing turning grip
  - Throttle loads the rear, keeping the back end pinned to the track and reducing sliding
  - Turning reduces grip for throttle or break

# Racing – Starts



- Starting Procedure

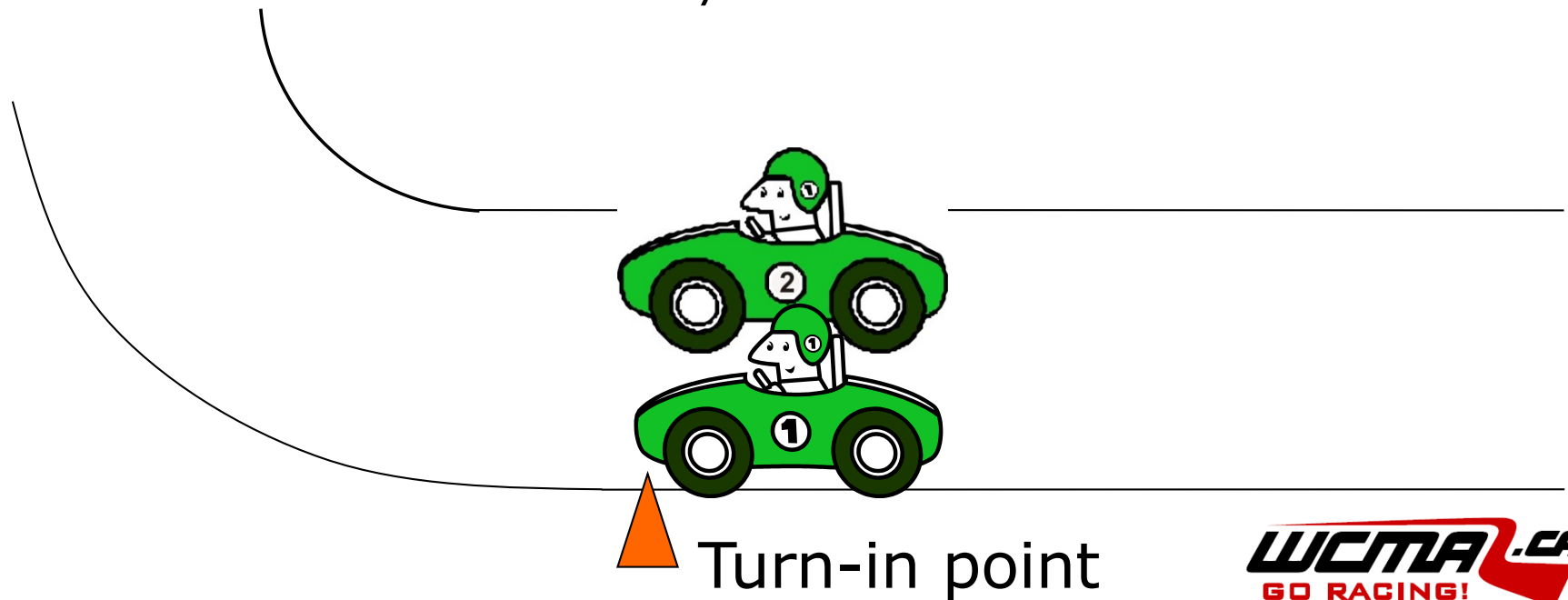
- Line up in pre-grid - 2 by 2 in qualifying order
- Enter the track in order from pre-grid
- Line up behind pace car - lights on
- Pace car rolls for warm-up lap(s) – cars follow 2 by 2
  - Tightly spaced!!
- Near end of warm-up lap – pace car lights out
  - This signals start next time by start/finish
- Pace car exits into pits – pole car sets the pace
- Field formed up? - Green! Green! Green!
- Field ragged? – go around again under control of pole car



# Racing – Passing 1

- Most contentious part of racing – most risky too
  - Who has ‘right-of-way’?

Car 2 is ahead and has the right of way,  
Car 1 needs to yield the corner

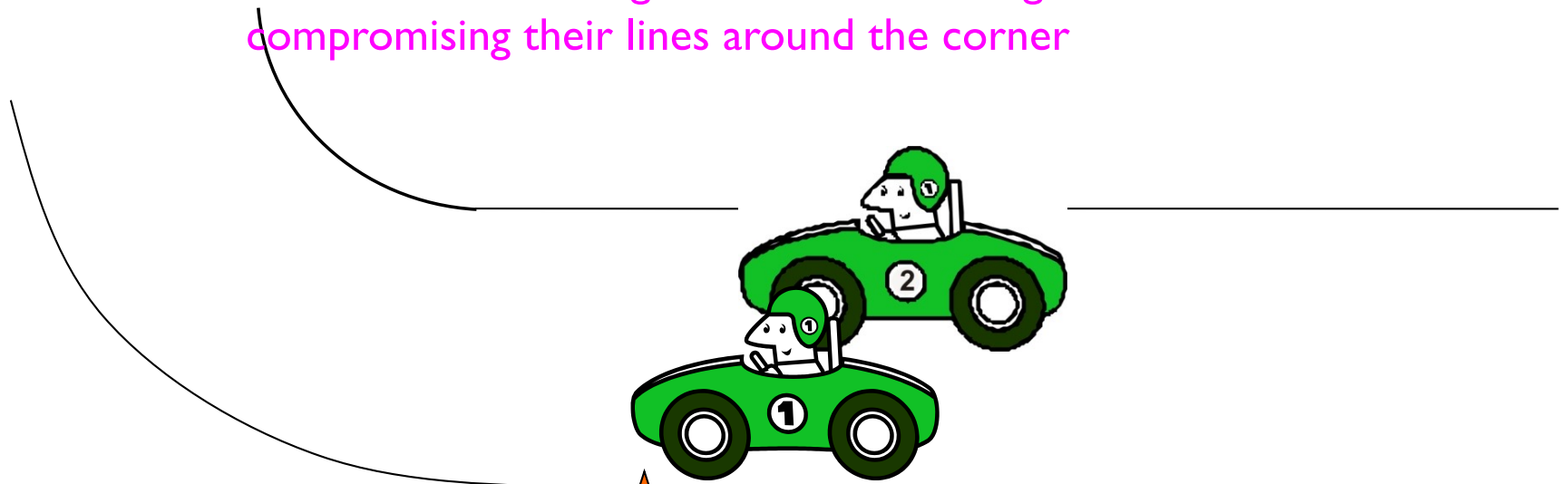


# Racing – Passing 2

- Most contentious part of racing – most risky too
  - Who has ‘right-of-way’?

Here car 2 is substantially alongside car 1,  
but pass is not complete

Car 1 and 2 have to give each other racing room, both  
compromising their lines around the corner

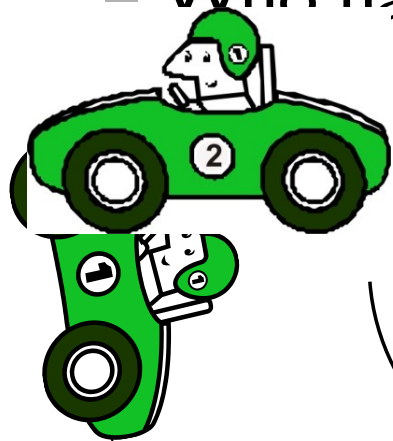


Substantially along side  
Front wheel of 2, around driver's door of 1

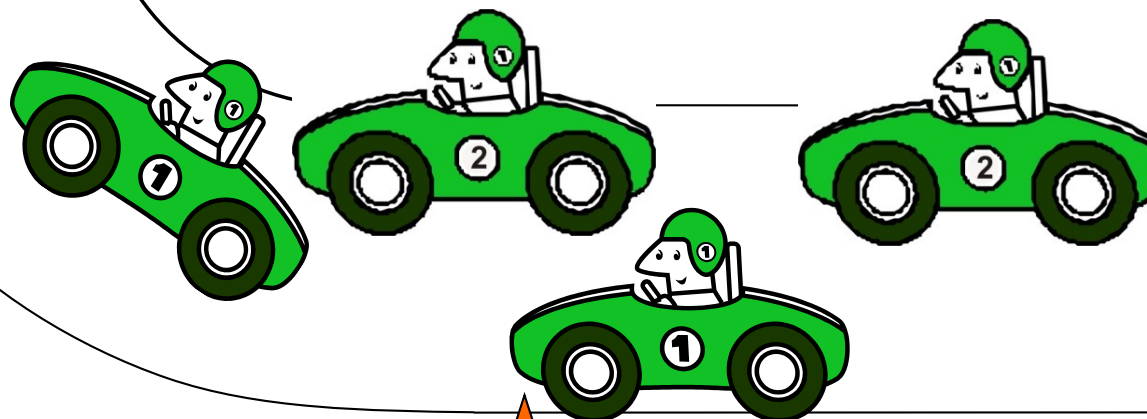
Turn-in point

# Racing – Passing 3

- Most contentious part of racing – most risky too
  - Who has ‘right-of-way’?



Here car 2 is just at the tail end of 1, when 1 is at the turn in point  
Car 1 has the right of way



Known as dive bombing the corner,  
often has disastrous results

Turn-in point

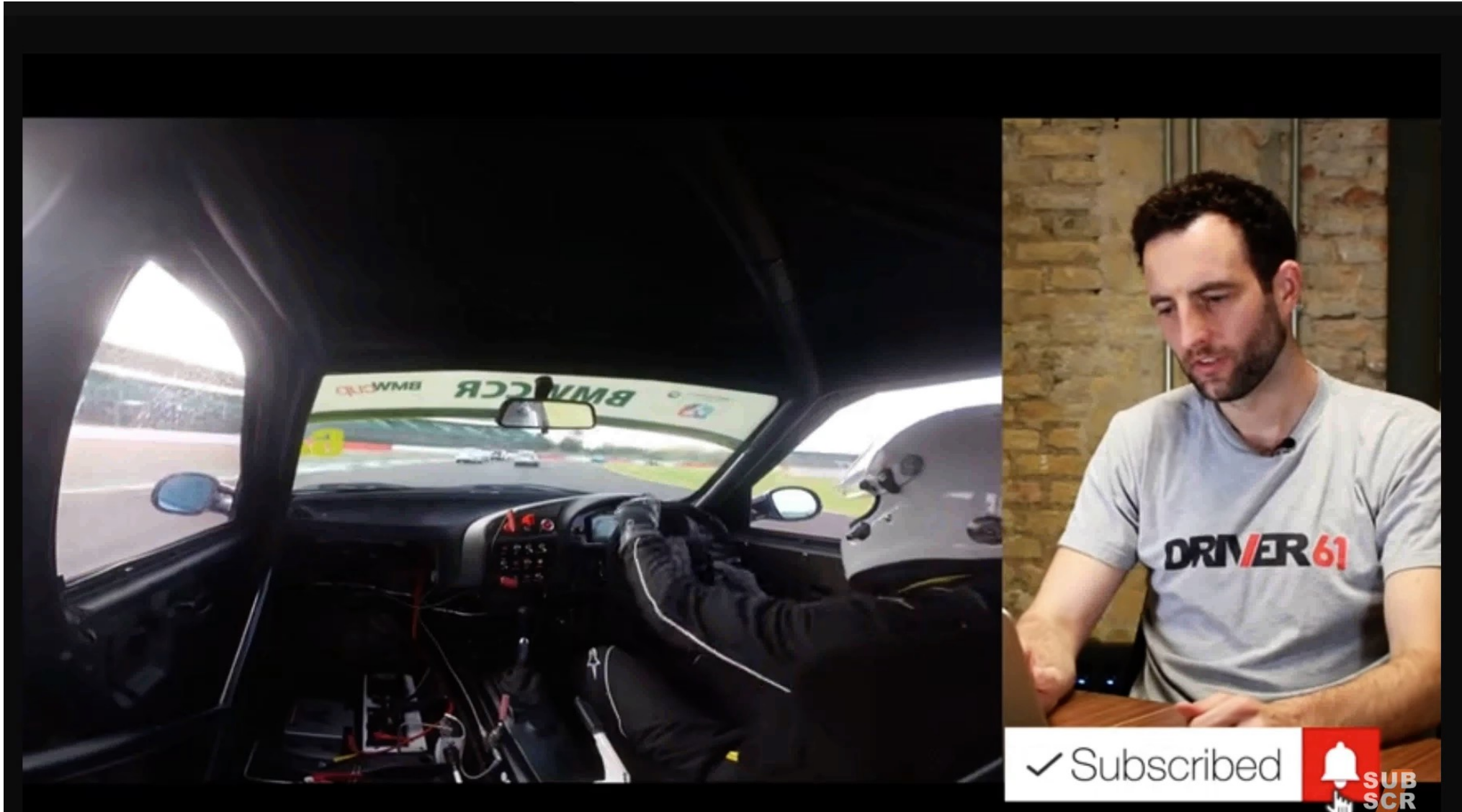


# Short'n'sweet summary

All competitors have a right to “racing room” on the marked racing surface. All have a responsibility to avoid contact.

“Racing room” is generally defined as sufficient space on the marked racing surface so as to allow a competitor to maintain control of his car in close quarters, under racing conditions.

# Overtake tips from a pro



- Driver61 Scott Mansell



# WCMA Passing Rules (for your reference)

## ▪ **9.4 Passing on the race track**

▪ a. Corners or curves, as well as the entry and exit zones thereof may be negotiated by drivers as they wish, within the limits of the marked race track.

▪ b. **The responsibility for the decision to pass another car rests with the overtaking driver.**

However this will not relieve the overtaken driver from the responsibility for the safe passing of another car.



# WCMA Passing Rules

c. The overtaken driver shall not block. Both drivers in a passing maneuver shall give each other adequate room to pass if the passing car is significantly alongside.

**Failure to yield racing room by either driver may result in a penalty at the discretion of the Steward.**

d. Any driver being overtaken should point to the side on which an overtaking driver should pass.



# WCMA Passing Rules

- e. Drivers are obligated to heed the flag signals displayed around the track. Failure to respond to a flag signal is serious violation of these regulations and is subject to penalty which is not subject to protest or appeal.
- f. Any driver appearing not to be making adequate use of the car's rear view mirrors, or driving in a manner which, even if unintentionally, appears to hinder or discourage another driver seeking to pass, or appearing to ignore the blue flag, may be given the black flag.





# WCMA Passing Rules

- g. Systematic or repeat offences may result in exclusion of the offending driver.
- h. The penalty inflicted for ignoring the blue flag shall be applied to the drivers who obstruct part of the track and may range from monetary fine to exclusion. The same penalty shall be applied to drivers who swerve from one side of the track to the other side of the track in order to prevent other competitors from overtaking.

# Classroom 5 -Racing Officials & You

## On Track Session 5 – Rolling Starts

- **Student Side-by-Side & Rolling Starts**
  - **Instructors in car or observe from corners**
- Sub-groups of 5 or 6 cars within the colour run group, organized in paddock
- Pace car for every sub-group of cars (so 3 Pace cars)
- Rolling start practice,
  - Follow pace car, maintain speed when it jack rabbits away before the start line.
  - Continue side by side run until green is thrown, then race to the checker flag
  - Regather behind the pace car side by side, and follow pace around track maintaining side by side and keeping up with pace.
  - Repeat, and run the side by side faster each time.
- After about ten minutes
  - Black Flag All will bring you through the hot pit lane,
  - and then back on track for a regular session
  - Lead/follow students proceed to paddock to collect instructor car

# WCMA Hierarchy & Basic Racing Stuff

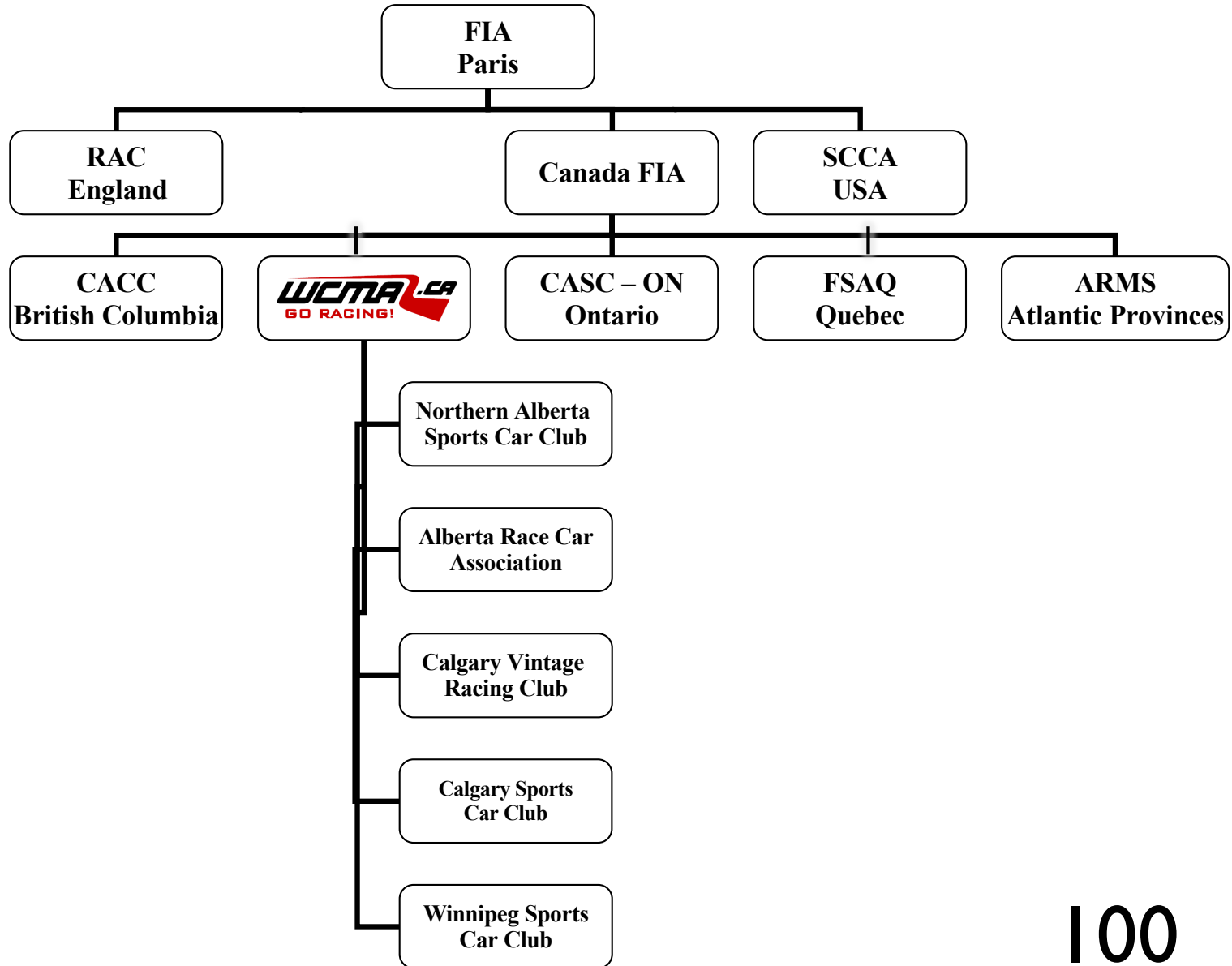
Western Canada Motorsport Association

- Sanctioning body - Alberta, Saskatchewan, Manitoba
- Responsible - safe and fair administration
- Racing, Solo, School events
- [www.wcma.ca](http://www.wcma.ca)





# Motorsport Organization



# WCMA Regulations

- Sporting Regulations
- Technical Regulations
- Solo (Solosprint) regulations
- Supplementary regulations
  - All available on-line: [www.wcma.ca](http://www.wcma.ca)

# WCMA Officials

- Senior Steward, Steward & Recording Steward
- Clerk of the Course
- Chief Scrutineer
- Chief Starter
- Corner marshals
- Chief Timing and Scoring
- Chief of Licensing

# How to go racing

- Join a WCMA affiliated racing club
  - Alberta Race Car Association
  - Calgary Sports Car Club
  - Northern Alberta Sports Car Club
- Enter a rent-a-ride series
- Jump into the online forums,
  - [www.wcma.ca](http://www.wcma.ca)
  - NASCC group Facebook page