

**Welcome  
to the  
Rocky Mountain Region - PCA  
Drivers Education (DE)**

# **Novice Driver**

**Classroom Session One**



It's my first day at a Driver's Education (DE).

***What can I expect?***

- **Apprehension is normal!**
  - Do your best to relax.
  - Breathe, relax, and channel that energy!
- You are here to:
  - *Be Safe!*
  - *Learn Lots!*
  - *Have Fun!*

**OUR NUMBER ONE GOAL**

***Have a safe and fun track experience!***



# Preview of Today

## Novice Driver Schedule

- **Classroom Session #1**
- **First Track Session**
  - Instructor will drive your vehicle for a few laps at a “comfortable” speed to show you where the track goes and point out some things.
  - Student will then drive, and instructor will “talk” you around the track
  - After a 25-30 minute session, you will debrief with your instructor.
- **Classroom Session #2**
- **Additional Track Sessions**
  - You will have at least 3 more 25-30 minute track sessions with your instructor.
  - You and your instructor will de-brief after each session.
- **End of the Day: Something called “Beer-thirty”**

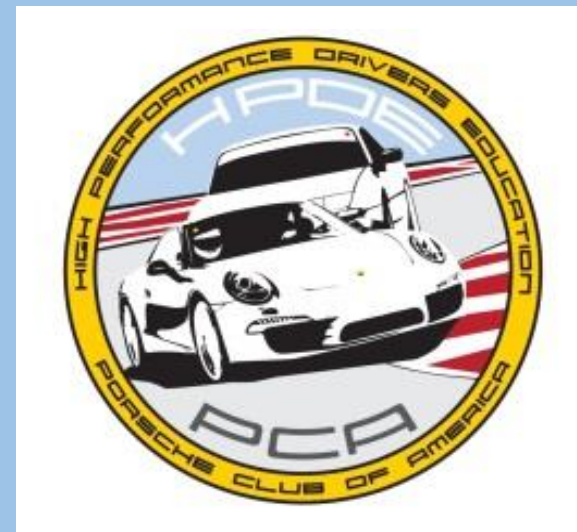


# Prepping Your Car

- **Make sure your car is empty - no loose articles.**
  - Check trunk & interior - glove box, console, door pockets, remove floor mats, garage door openers, etc.

**REMOVE EVERYTHING!**

- **Torque wheels (know the torque spec for your car)**
- **Check/set correct tire pressures**
  - Recommended tire pressures can be found on your door jamb.
- **Install front tow hook**
- **Adjust mirrors and seat position**
- **All windows down**



# Driving Basics

## Steering wheel hand position – “9 & 3”

- One hand draped over the top of the wheel and the other resting on shift knob is a no-no!

**Most people move their seat slightly forward.**

**We will drive at “instructional” speed.**

- There will be minimal gear shifting.
- One or two mid-range gears are all that is necessary.
- Early on, don’t be surprised if you’re told to stay in 3rd gear. It makes absorbing other information easier.



# More Driving Basics

**Emphasis is on SMOOTHNESS !!**

- *Again... SMOOTH inputs!*
  - Aggressive inputs can cause loss of control because it upsets car balance
  - Gentle “soft” hands and feet

**Demonstrate self-control**

**Listen to your instructor - If told to do something, DO IT!**

**Ask questions – they are ALL welcome!**

**Leave the EGO at home!**

**This is NOT racing!**





# The Four C's

## Corner Stations and Flags / Lighted Signs

### Cones

- Reference points for:
  - Braking
  - Turn-in
  - Apex
  - Track-out (turn exit)
  - These terms will be discussed further in Session # 2.

### Cars

- Awareness, track etiquette (courtesy)
- Passing protocol, mirrors

### Correct Driving Line

- Connect the dots (cones) for now
- Correct "line" will be discussed further in session #2.



# Corner Worker Stations Lights & Flags

**Be Aware & Take Note!**

- Corner Worker Stations - Corner Workers
- Corner Worker Stations – Lights
- FLAGS: An overview - let's get started...





# FLAGS

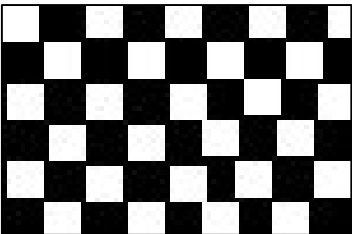
Here we go...pay attention 😊

## Your “Basic” Flags



### GREEN Flag

- Used only by the starter in Grid or at the Starting Line. The green flag is the only signal or permission, under any circumstances, for a driver to enter the track.

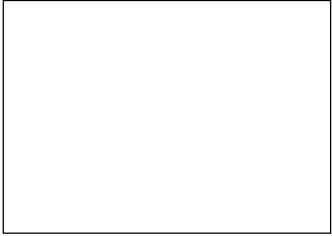


### CHECKERED Flag

- Session finished - commence cool-down lap and prepare to exit track



# “Advisory” Flags



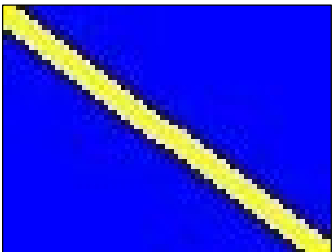
## WHITE Flag

- Slow moving vehicle is on track



## DEBRIS Flag

- Indicates there is debris ahead on the track that could create a hazardous situation such as oil, car parts, dirt, cones, etc.



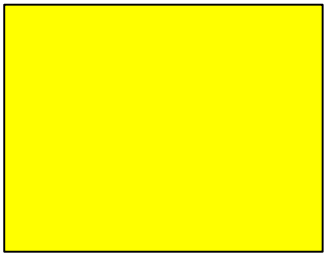
## PASSING Flag

- **CHECK YOUR MIRRORS** - Used to alert a driver that he/she is obstructing traffic.
- Faster cars may be wanting to pass or the driver is not slowing enough to allow equal speed cars to pass.
- At the first opportunity, the driver is to allow passing in the designated passing areas.



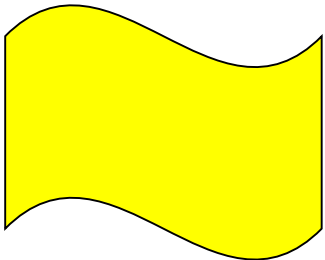
# “Action/Command” Flags

**YELLOW Flag** - Hazard ahead... proceed with caution



- **Standing Yellow (held still)**

Exercise heightened caution but continue to move on the track. The hazard is likely off the track just ahead of you. The flag is also displayed in this manner if there is a hazard that drivers have seen before but continues.



- **Waving**

Exercise extreme caution but keep moving.

For example, a car has stalled on the track or is off the track in a hazardous location just ahead of you.



# More “Action/Command” Flags

## BLACK Flag



- **Open Flag (held still)**
  - Drive cautiously to the hot pit lane
- **Furled Flag (pointed at you)**
  - Something is wrong with your car or your driving.
  - Exit track to Black Flag Station

## RED Flag

**This is serious! Check mirrors before slowing abruptly!**



- There is an obstruction of traffic on the track and the situation is hazardous such as a fire or possibly injury.
- The driver should stop on the track as soon as safely possible within visual range of the closest manned corner station or lights. Keep safety gear (helmet, belts) fastened.
- Move to the shoulder or off the track if possible rather than stop in the middle. Expect Black or Yellow flag next when you may move again.



# Procedures Review

## Grid

- Where we line up to start our session
- Finding the Grid
- Keep your speed down in Paddock and Grid!

## The Track is “Hot”

- Entry to the track and exit from it
- Green flag / checkered flag
- “Hot Track” includes “Hot Pit Lane”
- Cool down lap - cool you and the car down!
- Debrief with instructor

***FYI, the track is “cold” when no cars are allowed on the track.***



Almost done... 😊

# Passing Procedures

On the last three slides, we will review...

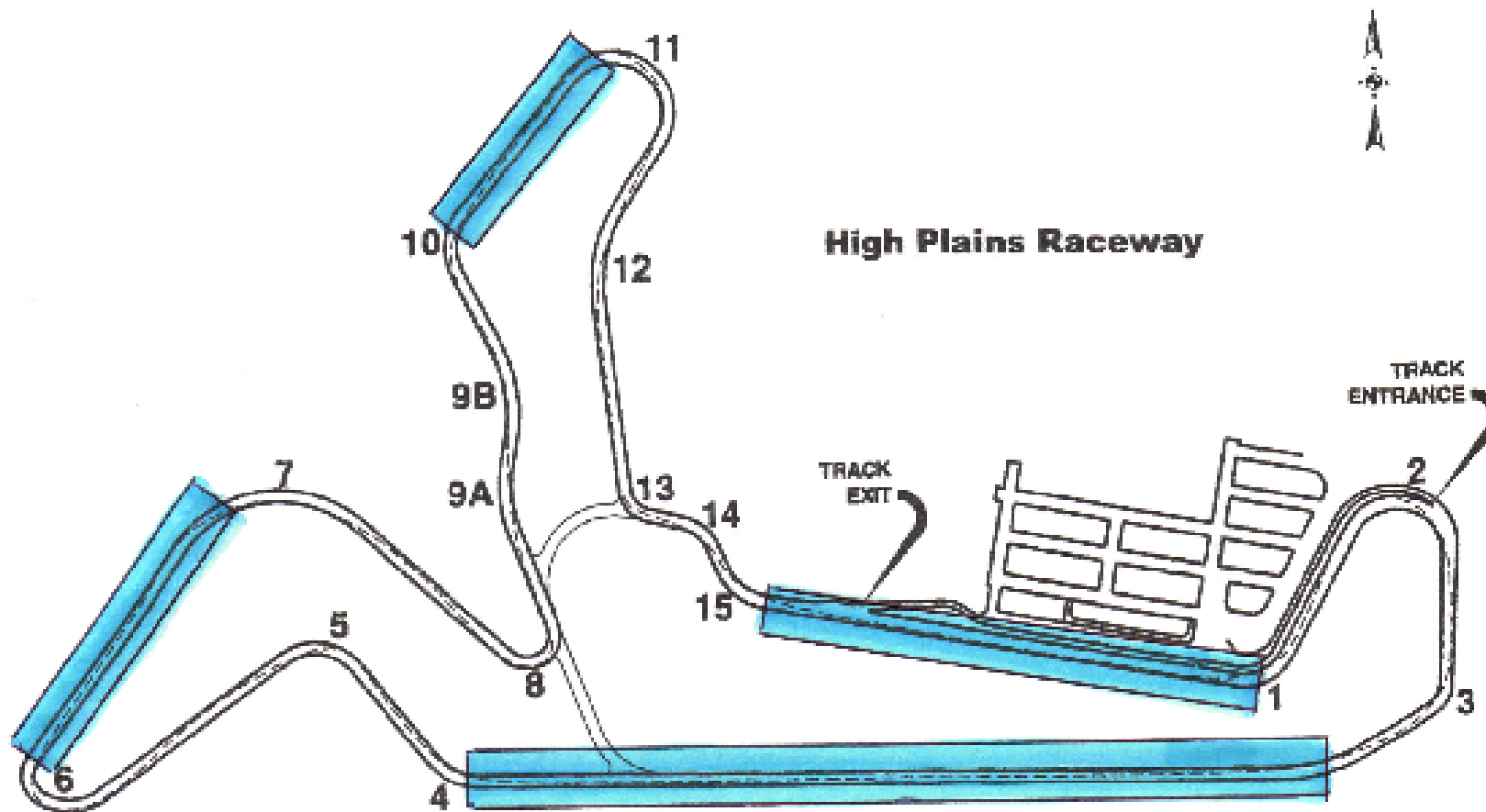
- Where the passing zones are
- Driver-to-driver passing signals
- Passing rules & the responsibilities of the “lead” & “passing” car





# Green, Blue, & Brown Groups

## Passing Zones for RMR-PCA



# Passing Rules

## Mirrors

- Check your mirrors before entering the passing zone
- Allow passing as needed

## Hand signals used by the “lead” car

(the car that is allowing a car to pass it)

- Use a CLEAR “point-by” hand signal to tell the overtaking driver on which side to pass.
- Keep the “point-by” hand signal displayed until the pass is completed.
- One “point-by” for each car!
- Leave room for car to pass on the same side as your hand signal.
- Slow down enough to allow the “overtaking” car time to complete the pass.
- Be predictable
  - The car allowing and signaling a pass should remain “on-line.”
  - The overtaking car executes the pass “off-line.”



**Bottom Line on Passing...**

# **Use good judgment!**

- Both “lead” and “passing” cars
  - Please be sure pass is completed or aborted by the end of the straight and...
  - **NOT** in the beginning of the next turn.



# Questions?



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# Novice Driver

**End of Session One**

# Have Fun!



# Novice Driver

## Classroom Session Two



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# How was it?



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# Let's start getting technical...

## What is the “Line?”

- The quickest route around the track
- Not necessarily the shortest
- Use all of the track!
  - The widest arc through a turn lets you keep your speed up.

## A Concept:

- Minimum time taking the turn = maximum overall speed

**Look at the track map to examine the line turn-by-turn.**



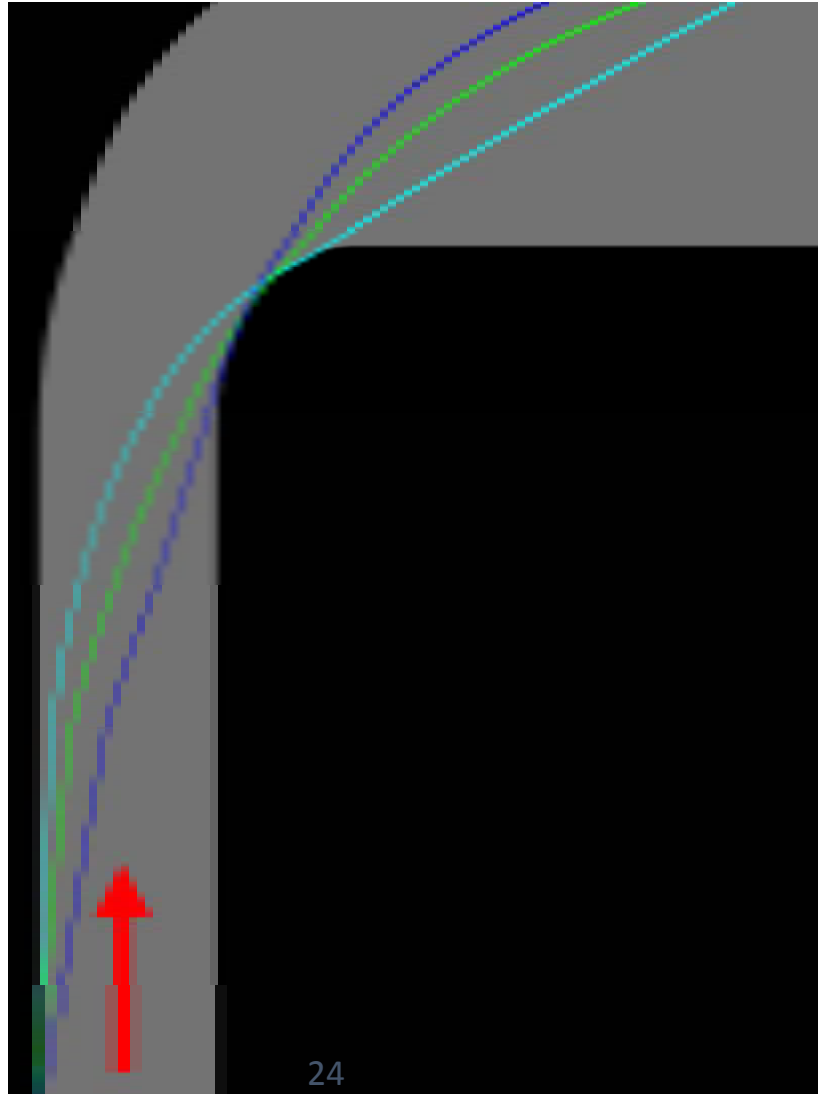
# Turn Apex

## What in the world is an Apex?

- The innermost edge of the turn – the “clipping point”
  - Sometimes, it’s the geometric center of the turn
  - More often, it’s later (called a “late apex”)
- “Hitting” the apex correctly lets your vehicle take the best line to maintain the highest speed throughout the corner.
- Types of Apex
  - **Early**
  - **Middle**
  - **Late**
- Only one of these works best for each turn.



# Types of Turn Apexes



- **Early**      **Dark Blue**
- **Middle**    **Green**
- **Late**        **Light Blue**



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# Braking & Turning

## Braking Points Entering a Turn

- Some have numbers (usually distance to start of turn)
- Some have cones
- Some have nothing at all

The below locations may also be marked with cones (but not necessarily).

## Turn-In

- Where a turn is initiated

## Apex

- “Clipping Point”

## Track-Out

- Exiting the turn - where a turn is completed



# Taking a Turn

Keeping it Simple

**Braking Point > Turn-In > Apex > Track-Out**

Said another way...

**OUTSIDE > INSIDE > OUTSIDE**

- Practice, Practice, Practice!
- Pick two or three corners to concentrate on per session.
- FOCUS!





# The Classic Track Driving Method

## Approaching a Turn

- Brake while driving in a straight line – “**straight line braking**”
- Downshift as required
- Release the brakes
- Turn into the corner – find the apex (a late apex is usually safest.)
- Return to the throttle – “squeeze” gas pedal and modulate throttle to track-out / turn exit point
- **USE THE WHOLE TRACK!** Wide entry into corners and wide exit

**Do not *RAPIDLY* lift your foot off the accelerator in the middle of a corner !**



# Smooth is Good!

## Brakes, Throttle, and Steering

- More related than you might think
- Avoid abrupt application of all of these to maintain the car's balance
- No “stabbing” of brakes or throttle – **Ease** on, **Ease** off

## Weight Transfer

- Influences “Oversteer,” “Understeer,” and “Neutral”
- Work towards establishing a “flow” from braking into steering and finally into acceleration.
- This is where smoothness and better laps come from.

***Are you starting to get the concept of  
“Car Balance?”***



# Where should I be looking?

## The concept of “Vision”

### Vision

- Look where you want the car to go - that is where it will go!

### Look “High and Long”

- Look “down track” as far down the track as you can.
- Is often referred to as looking “high” out the windshield.
- It is safer / easier to see things developing.
- Lets you see the “big picture” more easily and sooner
- Looking “down track” includes looking around & through the corners

**Promotes SMOOTHNESS**



# What if I get in trouble?

## Spin

- **“Both Feet In”**
  - Push clutch in and brake pedal to the floor until you stop
- **Cars with “PDK”** - Push brake pedal to the floor until you stop

## Running out of track

- Drive off as straight as possible.
- Happens while braking - especially when braking too late
- Can happen if you turn in too early (“early apex”)
- If you go off of the track, slow down carefully.
- Check your mirrors, or the nearest corner station before you ease back onto the track.

## If either of the above happened to you:

- Please exit the track and come into the **Black Flag Station** so that your car (and you!) can be inspected for safety.



# What if I have mechanical issues?

- If your car breaks and you can't get back to the track exit, pull off of the track surface as carefully as possible.
- Try to pick a safe place – not in a “target zone.”

## Stay in Your Car!

- Keep your seat belts and helmet on and cinched unless you believe your car is on fire

Or

- If you are instructed to exit by the safety team (e.g., responding tow truck, track manager, etc.)



# Track Terminology

## Track “Language”

- There is a language specific to high performance driving.
- Don't get frustrated if you don't understand it right away.
- You will more than likely learn it over time.
- There is a Glossary on the RMR website along with helpful articles on High Performance Driving.





# Emphasized Performance Driving Concepts

## **SAFETY FIRST!**

### **“The Line”**

An imaginary line that’s the most efficient and quickest way around the track

### **Track & Car Awareness**

Down-track, your mirrors for other cars, corner worker flags/lights, your gauges, car “feel”

### **Braking**

“*Squeeze*” the brakes, then a very *smooth gradual lift* to corner “turn-in”

### **Cornering**

Turn-in, **Apex** (early, center, and late), and **Track-out** (turn exit)

### **Reference Points**

- 1) Establish to start braking for each corner
- 2) Corner Cones: **Turn-in – Apex – Track-out** (turn exit)

**“High” and Around-the-Corner Vision = Smoothness = Car Balance = Best Laps**

# Goals for Your First Day

- Be **smooth** and consistent
  - Develop a rhythm
  - Learn the “line”
  - Develop your awareness of weight-transfer & how to manage it
- “Car Balance”**
- Be observant - avoid trouble spots & overly aggressive drivers

**Most importantly...**  
**HAVE FUN!!!**



# Questions?



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# Novice Driver

## End of Session Two



**Welcome  
to the  
Rocky Mountain Region - PCA  
Drivers Education (DE)**

# **Advanced Driver**

## **Classroom Session**



# Advanced Drivers

## Classroom Debrief

- **Introductions**
  - **Car Number - Car - Name**  
(Example: #3, Red '86 951, Dan Carlson)
- **Any issues on the track so far?**
- **What are you struggling with?**
- **What do you want to talk about?**



# Advanced Drivers

## Classroom Debrief

### POSSIBLE TOPICS

Page One

- A car is off the track ahead of you – what are you thinking?
- Negotiating the turns
  - Which ones do you want to discuss?
  - How to approach taking a turn better - discussion
- Car balance
- Hands – 9 & 3 “Soft”
- Braking technique – breaking down trail-braking
- Everything about tires





# Advanced Drivers

## Classroom Debrief

### POSSIBLE TOPICS

Page Two

- What are you doing to improve / learn?
  - Driving notes - tracking your turns, sessions, and day
    - Use of “Feedback” forms
- Who is mentoring you?
- Where are you getting your advice?
- Are you building your PCA network?
- Who are you mentoring?
- What are your goals - Become an instructor? PCA Club Racer?



# Advanced Drivers

## Classroom Debrief

### Negotiating the Turns

- Turns 1 2 & 3 4 & 5 6-7-8 9 A/B – 10 - 11 13 - 14 - 15
- Turn #4
  - What are you thinking?
  - Rain / snow the night before = skid pad !!!
  - What not to do
- Turn #7
  - What are you thinking? Entry, vision, apex, car balance, what if ??
- “Track-off” options - turns 1, 4, 8, 10
- Which are the most important turns on the track?
- When you get tired, focus exactly on each apex. (Randy Pobst)
- How to approach taking a turn better...do you have an hour ???



# Advanced Drivers

## Classroom Debrief

### Tires

- Metal valve stems
- Wheel weights
  - Tape - metal duct tape
  - Mount inside so they are less likely to get in calipers
- Nitrogen
- Torquing lug nuts
  - Is there an order?
  - Proper lbs./ft. setting
- Air pressure
  - Start with lower air pressures – measure before & after session
  - Car is oversteering / “loose”      - 2 lbs. front    + 2 lbs. rear
  - Car is understeering / “push”      + 2 lbs. front    - 2 lbs. rear

