

NNJR “Trackside Classroom”

How to Learn a New Track

PittRace Turn by Turn

May 10, 2021



Disclaimer

The techniques shown here have been compiled from experienced sources believed to be reliable and to represent the best current opinions on driving on track. But they are advisory only. Driving at speed at PittRace

, or any other track, requires skill, judgment and experience. These techniques assume the reader has high performance driving knowledge and applies them as applicable to their level of driving experience.

High-performance driving can be very dangerous, carries inherent risks and may result in injury or death. NNJR and PCA make no warranty, guarantee or representations as to the absolute correctness or sufficiency of any representation contained herein. Nor can it be assumed that all acceptable safety measures are contained herein or that other or additional measures may not be required under particular or exceptional conditions or circumstances.

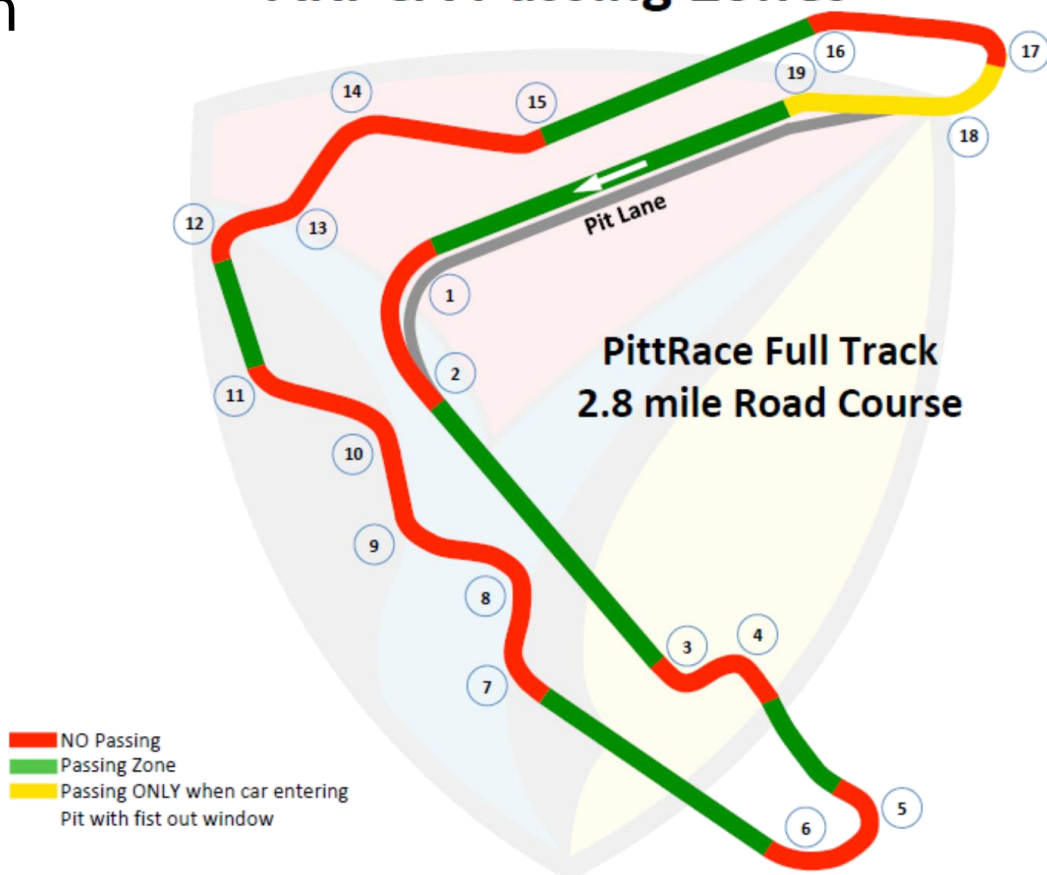
- How to Learn a New Track

- Pre-Event Preparation
- Prerequisites
- Priorities / Sequence
- Practical Steps
- Deliberate Practice

- PittRace

- Turn by Turn

ARPCA Passing Zones



PASSING PROTOCOL: Point-by given is always in direction of next corner. IN ALL CASES, CAR BEING OVERTAKEN GIVES POINT-BY AND STAYS ONLINE ~ OVERTAKING CAR MOVES OFFLINE & SAFELY MAKE PASS AFTER SIGNAL IS GIVEN.

1. Track Map

- Test: talk someone around track describing each corner

2. “Mental programming” (Visualization)

- Close eyes, imagine driving one or more laps
 - Then open eyes, draw the map

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3. Turn by Turn (if available)

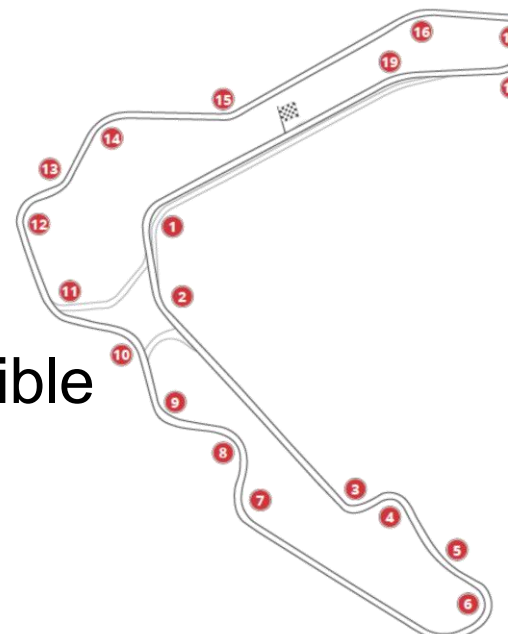
- Make notes on map of RP's, etc.

4. Video

- Collect & memorize as many RP's as possible

5. Simulator

- Goal: consistency

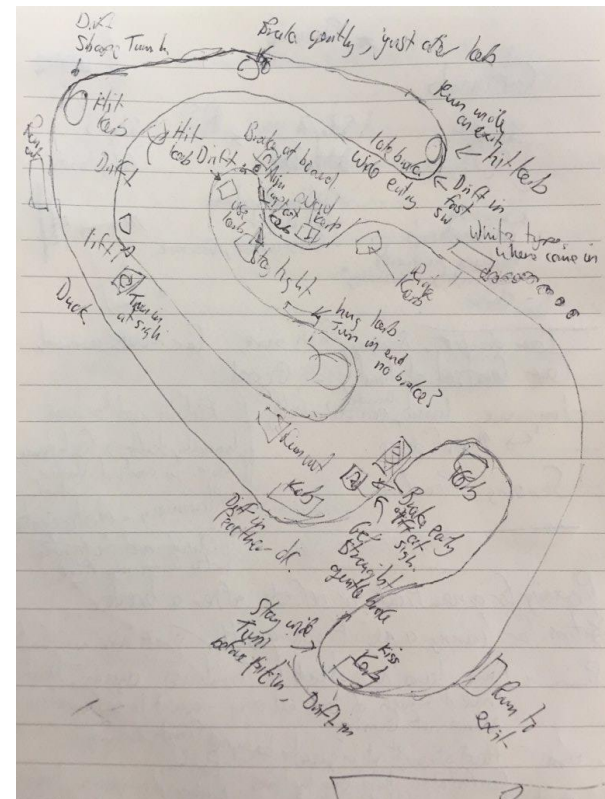


Adapted from: Ross Bentley *How to learn a new track*

NNJR Pre-Event: An Option



1. Find a good video
2. Create your own Guide
 - Watch video at .5x speed
 - Draw a sketch of track with RP's
3. Train your feet
 - Watch video at 1.0x speed
 - Try to brake and accelerate with the video
 - Repeat until you can match the video
 - Any chair will do



From: Samir Abid *YourDataDriven*



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Slide 5



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- Be Open Minded
- Trust Yourself—the most
 - Know your risk level
- Have patience and be methodical
 - This is an analytic sport
- Go slow, see a lot—the “visual photo”
 - First day: long, light braking
 - Helps get the right photo
- Avoid the herd mentality and misinformation
- Beware of gurus



--credit to Dennis Macchio, Chief Instructor Bertil Roos, MMC

- Learning Priority (always)
 1. Exit speed
 2. Entry speed
 3. Braking



1. Categorize corners

- Typical: “turn and go”
 - e.g. Turn 1 at Watkins Glen; PittRace Turn 11 ??
- Fast (i.e. light braking, minimum trail braking)
 - e.g. Turn 16
- Long (lots of trail braking)
 - e.g. Turns 5/6, 17/18
- Compromises (connected corners)
 - e.g. Turns 7 through 11, 12 through 14

2. Estimate reference points

- Start with a single arc, very late apex

3. Start adding items that affect grip

- Elevation, camber, curbs (?)

4. Re-adjust and repeat

--credit to Dennis Macchio, Chief Instructor Bertil Roos, MMC

1. (Re)Learn the Track

- Reference Points
- Track Surface
- Safety features

2. (Re)Learn the Traffic

- Mirrors
- What Would I Do If?

3. (Re)Learn the Car

- Brake Application
- Brake Release
- Throttle
- Steering

4. Sensory Input

- Vision
- Kinesthetics
- Hearing

* **How you practice is more important than *amount***

Do it in a focused way,
With clear goals,
Plan for reaching goals, and
A way to monitor your progress

Sources: Ross Bentley, Speed Secrets Weekly 322 and 370; Talent is Overrated by Geoff Colvin, and Peak. Secrets from the New Science of Expertise by Anders Ericsson and Robert Pool

NNJR Deliberate Practice Worksheets



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Topics for Sensory Input Worksheets
Use these topics with your printed track map

Reference Points

- Not cones!
- Cracks, posts, seams, curbs, etc.
- BOB, TI, EOB, A, TO, in between

Track Surface

- Sealer, color change, etc.
- Elevation
- One new feature per lap

Safety

- How soon/far ahead can I see flag stations?
- Bail out area(s) for each corner
- Which curbs could I drive on? Not?
- Etc.

Brake Application

- Quick and hard enough? Too much?
- Does the car get upset?
- Totally consistent lap to lap?
- Get money in the bank early in the brake zone (Cass Whitehead)
- "On like a lion, off like a lamb" (Pobst)
- Etc.

Brake Release

- Modulating pressure thru brake zone properly?
- Beginning release at the right point?
- Right rate? Slow, medium, fast
- Totally consistent lap to lap?
- Come off the brakes politely (Peter Argetsinger)
- Etc.

Throttle

- Squeezing too soon? Too quickly? Not enough?
 - Pause between brake and gas?
- On floor until brake application?
- How are you using it (vs when)
- Use only the top half? (David Murry)
- Etc.

Steering

- Especially how you unwind on corner exit
- Is turn-in from track edge?
- Is turn-in crisp/flowing or gentle/progressive
 - Both correct, depends on corner
- Etc.

Mirrors

- Adjusted properly?
- How many cars behind?
 - End of back straight?
- Closing speed: is car in mirror closer or further away?
 - What color(s) is/are cars behind?
- Etc.

What Would I Do If

- I smell anti-freeze?
- Car in front swerves under braking?
- Brake pedal soft in middle of traffic entering bus stop? off camber?
- Two fast cars, you give one signal, can't see second one?
- Etc.

Vision

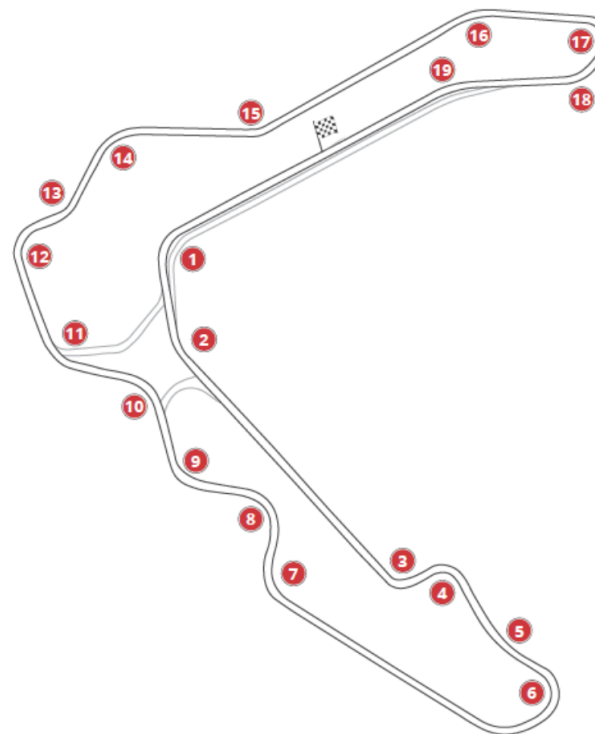
- Everything you can see on and off the track surface
 - Something new each lap
 - e.g. Horizon change during cornering
- How far ahead can you see?
- Etc.

Kinesthetics

- Steering wheel feedback
- How g-loads build; weight transfer
- Feel the track surface
- Etc.

Hearing

- Wind noise, tires, brakes
- Cornering vs. straight
- Different parts of track
- Etc.



Remember: Capture learning right away: in the first 10 minutes

- Write down what you saw, heard, felt
- Before lap times, data, video, socializing



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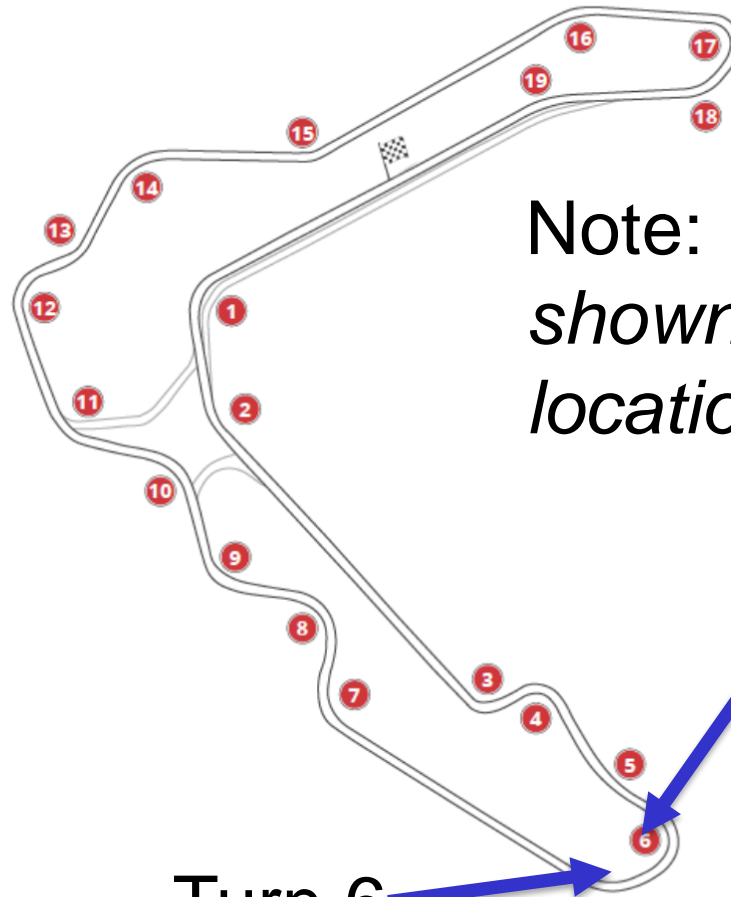
SPEED SECRETS
SpeedSecrets.com

- Approach as a learning challenge
 - Prepare ahead of time
 - Admit you don't know it all
 - Do not assume “this corner is just like a corner at ...”
 - Get the mental “photo”
- Prioritize
 1. The line: corner exit
 2. The line: corner entry
 3. Braking: smooth, not late!
- Make adjustments and observe their effect
- Keep it safe!
 - Emphasize learning, not speed



PITTRACE TURN BY TURN

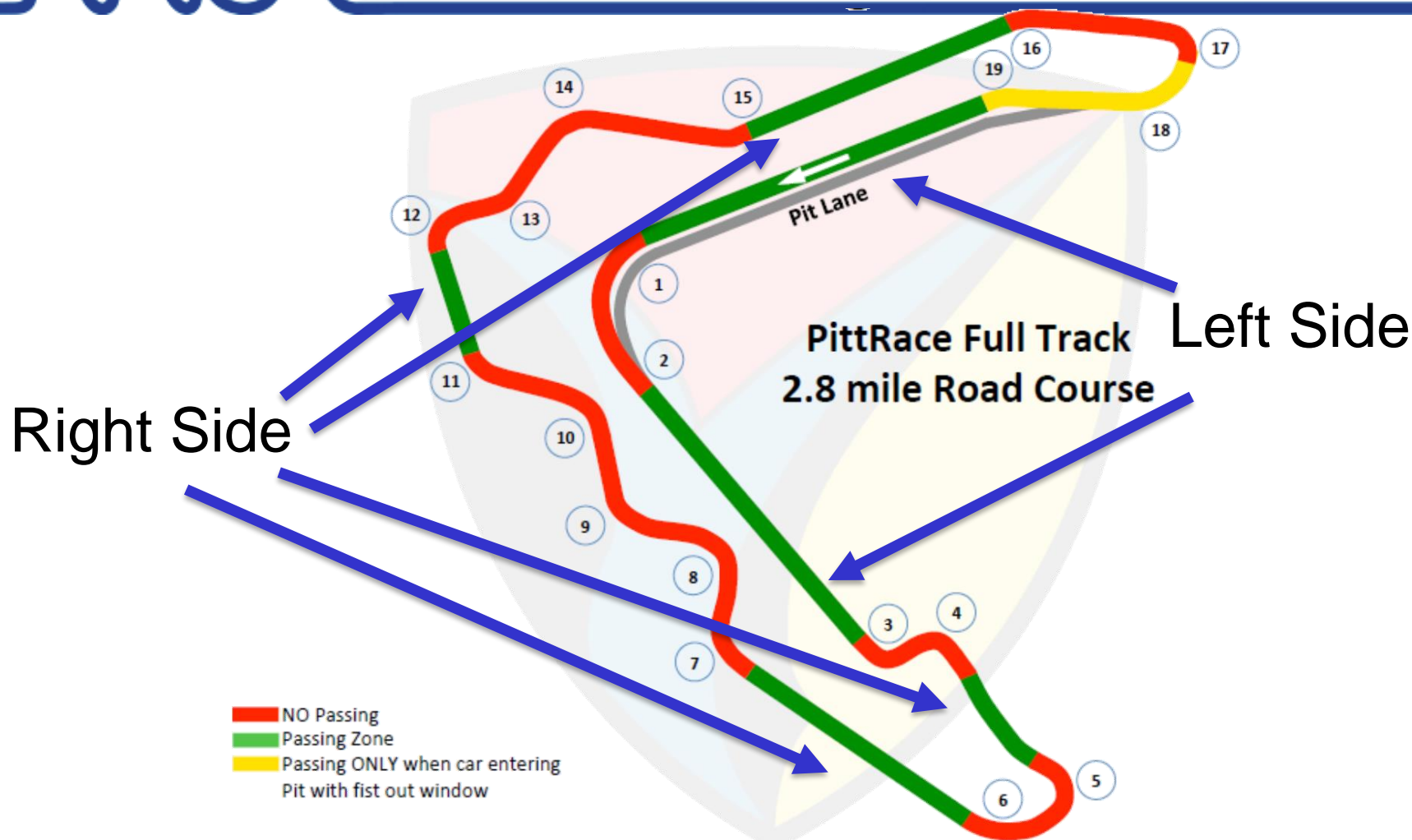
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Note: *Turns 5 and 6 are shown incorrectly. Correct locations shown.*

Turn 5

Turn 6



PASSING PROTOCOL: Point-by given is always in direction of next corner. IN ALL CASES, CAR BEING OVERTAKEN GIVES POINT-BY AND STAYS ONLINE ~ OVERTAKING CAR MOVES OFFLINE & SAFELY MAKE PASS AFTER SIGNAL IS GIVEN.

NNJR Reference Videos



- <https://www.youtube.com/watch?v=M3o-J6gcdnM>
- <https://youtu.be/P8y1yv40w9A>



NNJR Important PittRace Notes

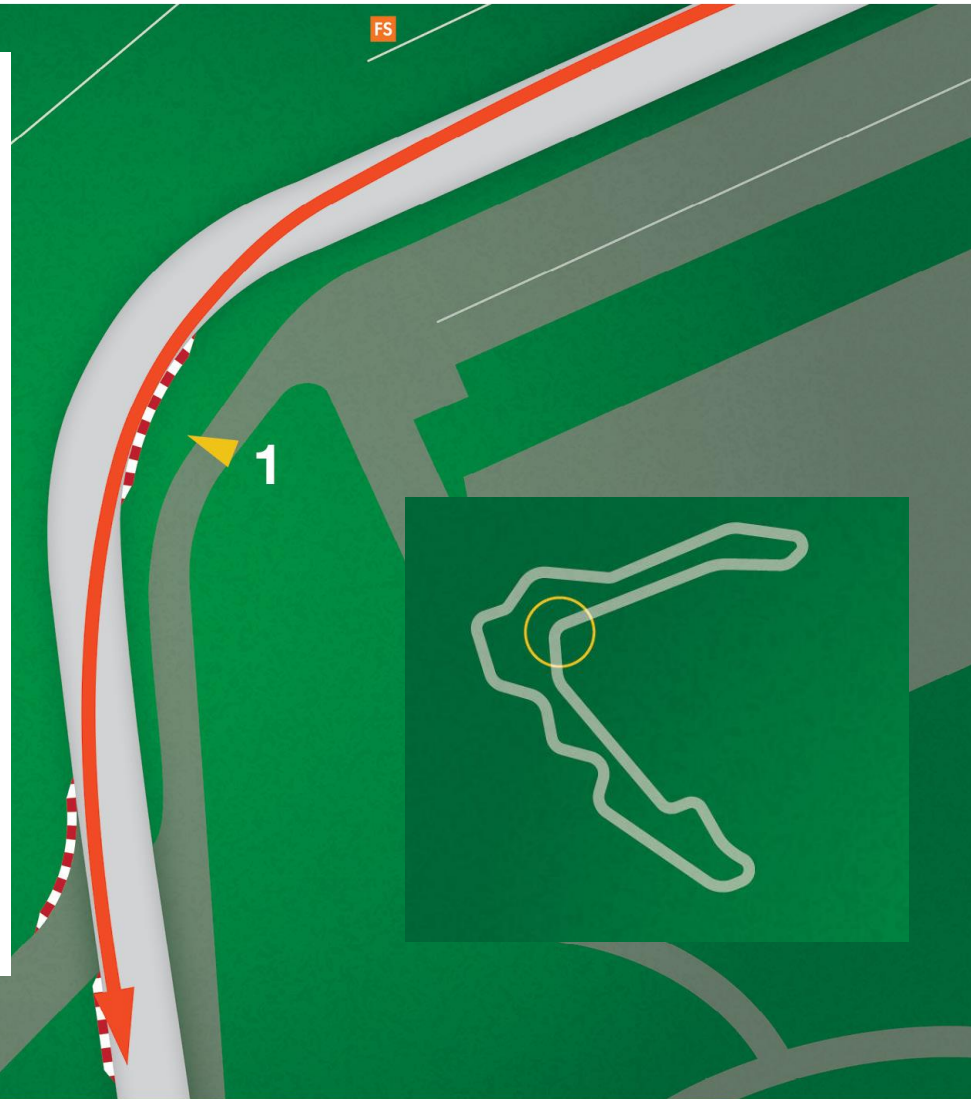


- PittRace rewards smoothness and finesse
- Most apexes (and turn-ins) are late: be patient!
 - Apexes may vary somewhat depending on your car. Some variances shown in detailed notes.
 - Several corners have long apexes; apex zone.
 - Use the apex curbs, NOT track out curbs.
- Turn In and Apex should be marked with cones
- Lots of elevation change, blind corners and corners that, at first, look similar. Plan to be challenged!
 - Turns 8 and 10 may seem similar at first
 - Turns 7,9, and 11 may seem similar at first
 - Turn 16 is fast and deserves great respect



Turn 1

- Blind until late in brake zone; brake early!
- Turn in and HOLD the Steering Arc through Turn 2
- Apex is beginning of curb



Lap at Pitt Race



NNJR Still Can't See the Apex!



Lap at Pitt Race



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NNJR Where is the Apex?



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NNJR Turn 1 Apex



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NNJR Turn 1 Apex



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Play (k)



0:12 / 1:48



<https://www.youtube.com/watch?v=Los388nW48A>



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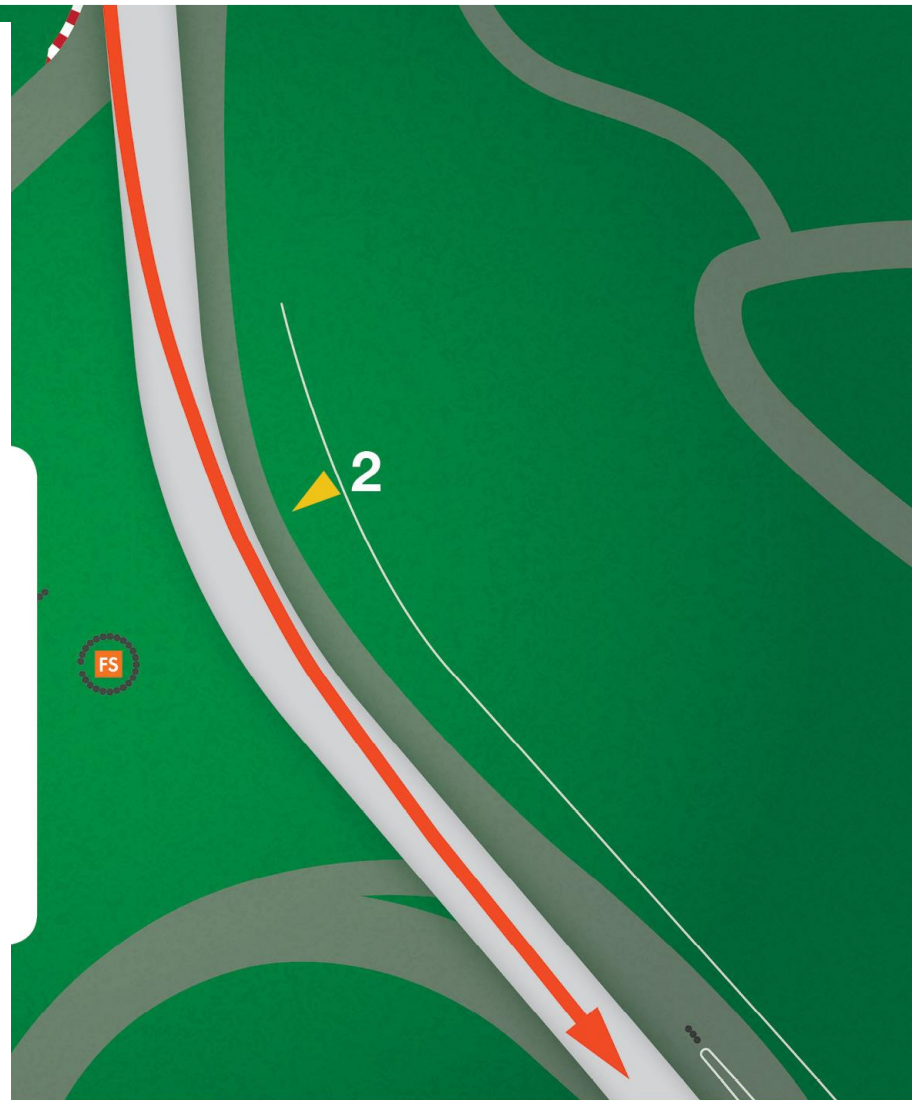
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Turn 2

- Continuing arc from T1
- Be very aware of cars entering track!
- Apex is middle of blend line (NOT over it)
- Note: Track Out is blind before apex!
- Straight over hill after apex
- Passing zone T2 to T3 on left (car goes light)



NNJR Turn 2 Apex = Blend Line



Lap at Pitt Race



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NNJR Turn 2 Apex



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▶ ⏮ 🔊 0:16 / 1:48



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NNJR T2 Apex...with car pitting out!



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Turns 3 & 4



- Brake uphill into 3 but corner is blind
- Very late Turn In, after cone?
- Late Apex T3 (next to last Red curb)
- Hold (“1001”) before Turn In for T4
 - Slow hands; asphalt patch Ref Pt
- Apex T4 mid to late curb
- Hold steering arc past Track out
- Passing zone on Right: T4-T5

NNJR Turn 3: Another Blind Corner



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PORSCHE

NNJR Another Blind Apex



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PORSCHE

NNJR Turn 3 Apex



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NNJR You Can Use the Curbs!



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NNJR Stay Track Left



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PORSCHE

NNJR Turn 4 Apex



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NNJR Turn 4 Apex



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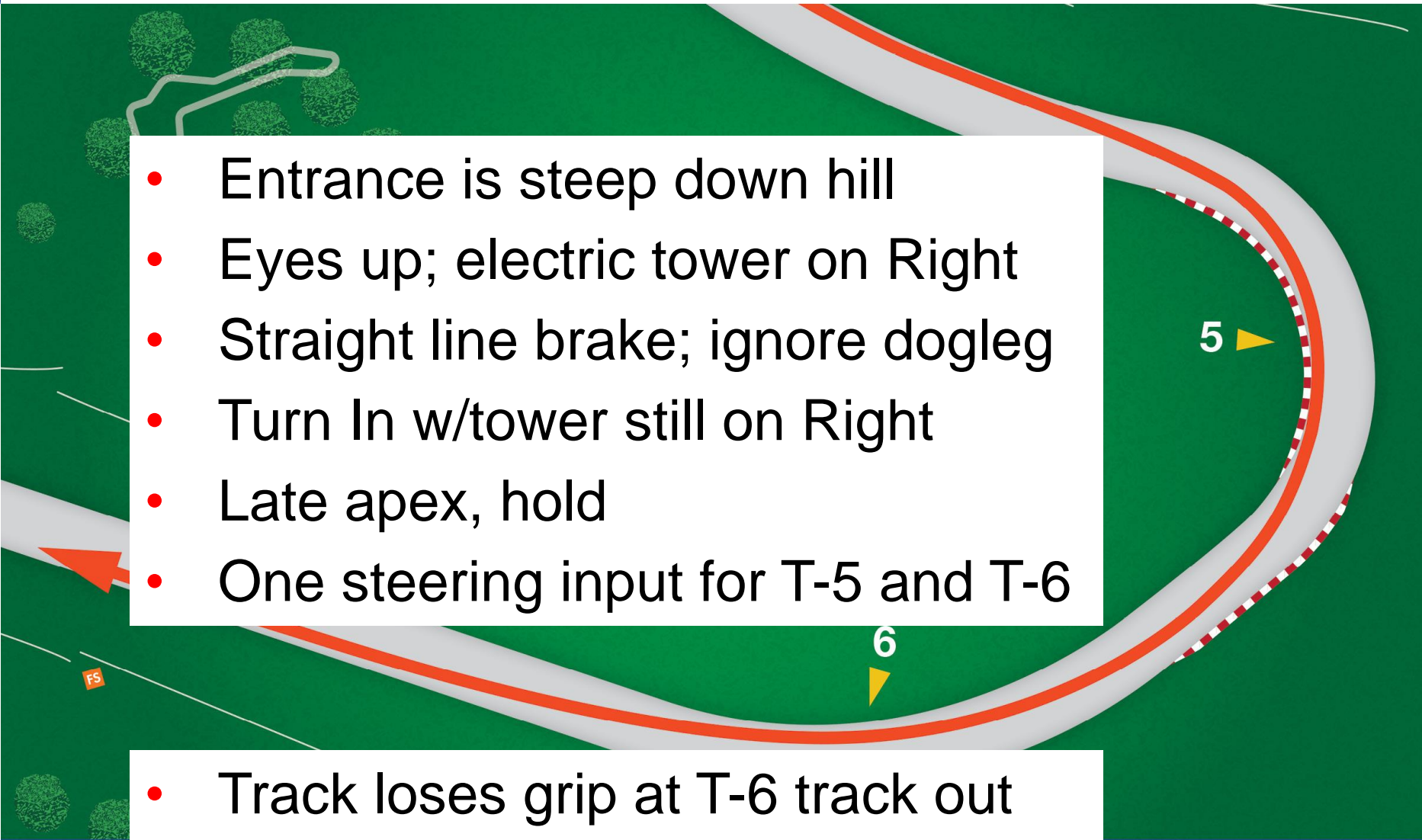
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Turns 5 & 6

- 
- Entrance is steep down hill
 - Eyes up; electric tower on Right
 - Straight line brake; ignore dogleg
 - Turn In w/tower still on Right
 - Late apex, hold
 - One steering input for T-5 and T-6

- Track loses grip at T-6 track out
- Passing on Right: T6 to T7

NNJR Approaching Turn 5



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NNJR T5: Late Apex & Hold: One Arc



Lap at Pitt Race



The dashboard includes the following elements:

- Speedometer:** A gauge showing speed in mph, with a needle pointing to approximately 58 mph.
- RPM Gauge:** A gauge showing engine speed in RPM x1000, with a needle pointing to approximately 3774 RPM.
- LAP Counter:** Displays 'LAP 3' and a time of '0:03'.
- Timing:** Shows a current lap time of '0:34.37' and a total race time of '0:42 / 2:37'.
- Controls:** Includes a red 'BRAKE' button, a green 'THROTTLE' button, and a steering wheel icon.
- Track Map:** A small map of the track layout in the bottom right corner, with a blue dot indicating the current position of the car.



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NNJR Turn 5 Apex



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NNJR Exiting T6 is Uphill!



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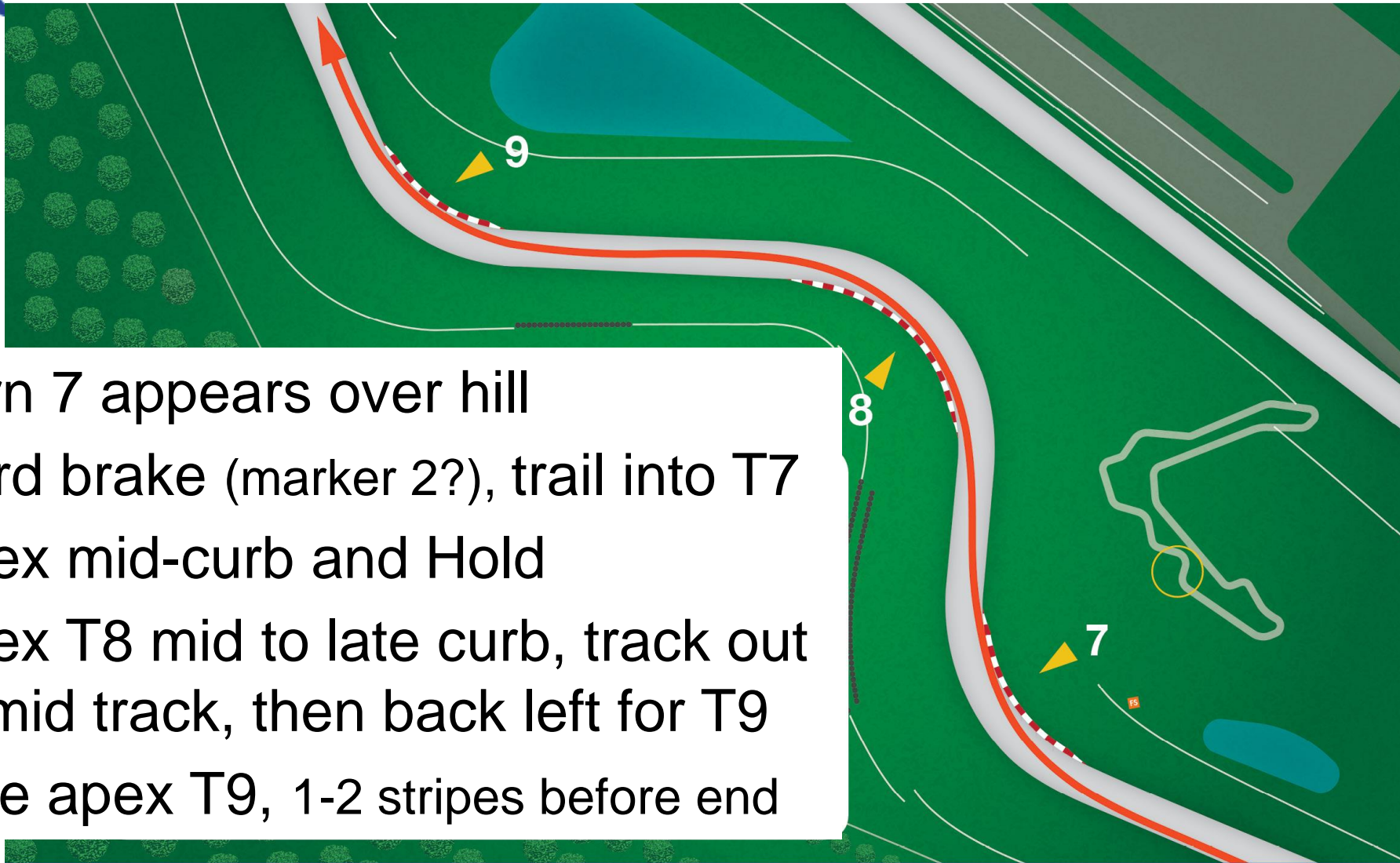
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Turns 7,8 & 9



- Turn 7 appears over hill
- Hard brake (marker 2?), trail into T7
- Apex mid-curb and Hold
- Apex T8 mid to late curb, track out to mid track, then back left for T9
- Late apex T9, 1-2 stripes before end

NNJR Approaching Turn 7



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NNJR Turn 7 Apex: mid/late and hold



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PORSCHE

NNJR Turn 7 Apex



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0:51 / 1:48



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PORSCHE

NNJR Turn 8 Apex: mid to late



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Lap at Pitt Race



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PORSCHE

NNJR Approaching Turn 9



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PORSCHE

NNJR Turn 9 Apex: Late!



Lap at Pitt Race



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NNJR Turn 9 Apex



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Play (k)



0:58 / 1:48



<https://www.youtube.com/watch?v=Los388nW48A>



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Turn 10

- Approach is totally blind
- “Feel your way to very late apex”
- Touch apex curb at very end
- Get back track left quickly after track out to set up T11
- Track goes off camber at track out; stay tight



Lap at Pitt Race

Press Esc to exit full screen



NNJR Still Can't See the Apex!



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PORSCHE

Lap at Pitt Race





Track Out Mid-Track to Set Up T11



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Turn 11

- Approach from track left
- Two sets of curbs: apex mid-first, all of second
- Track out curb is rough
- Quick corner

11

Passing on Right: T11 to T12

NNJR Turn 11: note 2 sets of curbs



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Turn 11: Long, Long Apex



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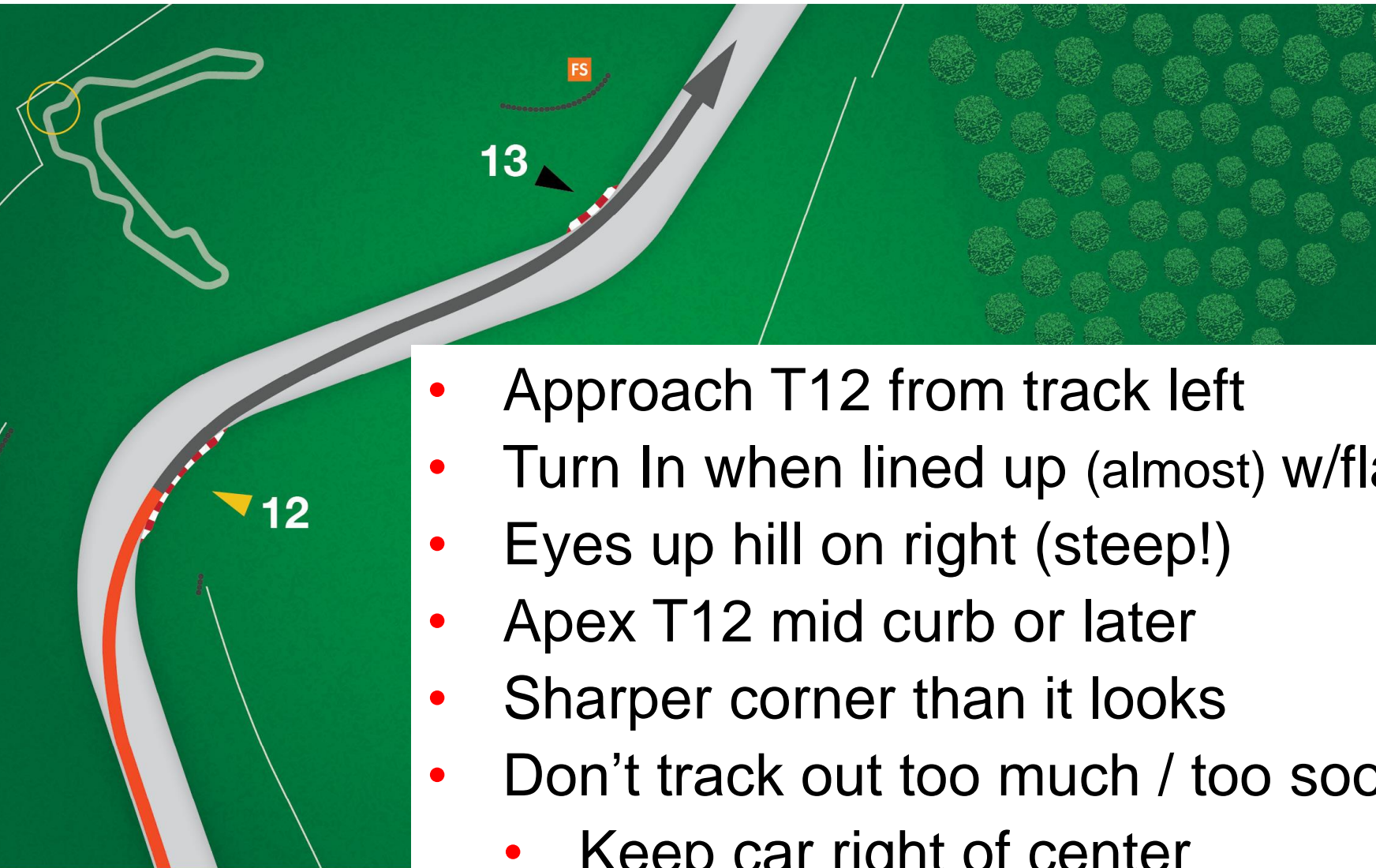
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Turns 12 & 13



- Approach T12 from track left
- Turn In when lined up (almost) w/flagger
- Eyes up hill on right (steep!)
- Apex T12 mid curb or later
- Sharper corner than it looks
- Don't track out too much / too soon
 - Keep car right of center
- Track out of T-12 is T-13 apex



Approaching Turn 12



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Use flagger as a Reference Point? Eyes Up the Hill!



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T12: Late Apex, Note how Sharp! Only Track Out Mid-Track



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PORSCHE

NNJR Turn 12 Apex



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PORSCHE

NNJR Turn 13



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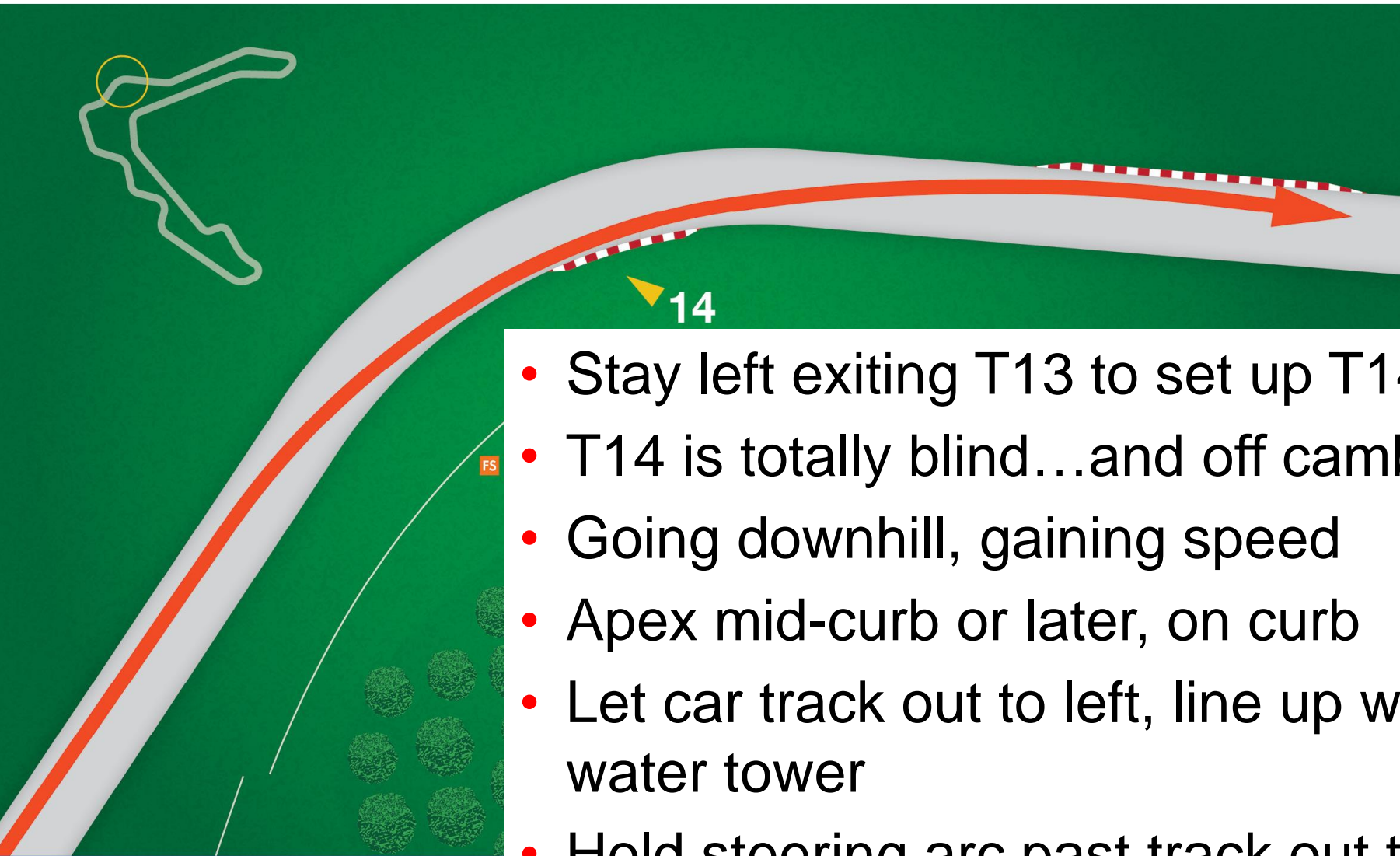
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Turn 14



- Stay left exiting T13 to set up T14
- T14 is totally blind...and off camber
- Going downhill, gaining speed
- Apex mid-curb or later, on curb
- Let car track out to left, line up with water tower
- Hold steering arc past track out to move track right to set up T15

Lap at Pitt Race



NNJR Still Blind After Turn In



Lap at Pitt Race



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PORSCHE

NNJR Turn 14 Apex



Lap at Pitt Race



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PORSCHE

NNJR Turn 14 Apex



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Play (k)



1:15 / 1:48



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PORSCHE

Let Car Come Back Right to Set Up Turn 15



Lap at Pitt Race



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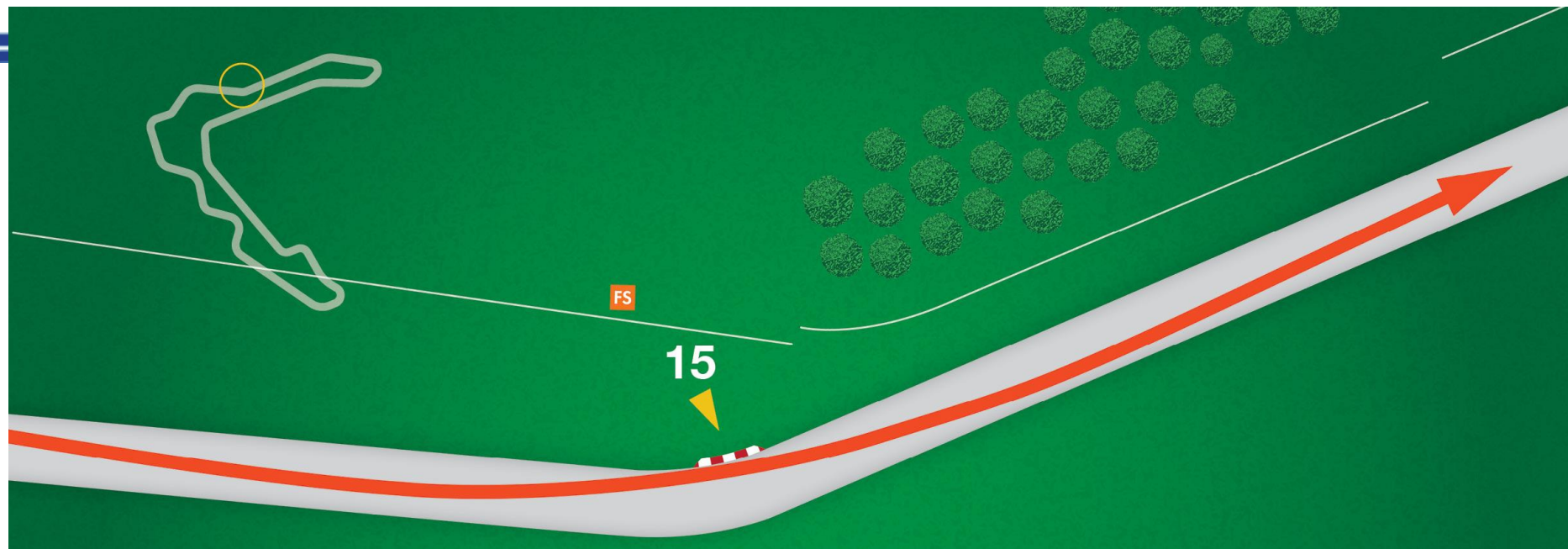
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Turn 15



- Approach from (close to) track right
- Feeding gas on, flat out once figured out
- Long apex: leading edge of curb, on curb
- Let car track out then ease to track left
- Right Side Passing zone T15 to T16



Approaching T15: Full Gas



Lap at Pitt Race



<https://www.youtube.com/watch?v=sSjko-IQNT4>



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PORSCHE

NNJR Turn 15 Apex



Lap at Pitt Race



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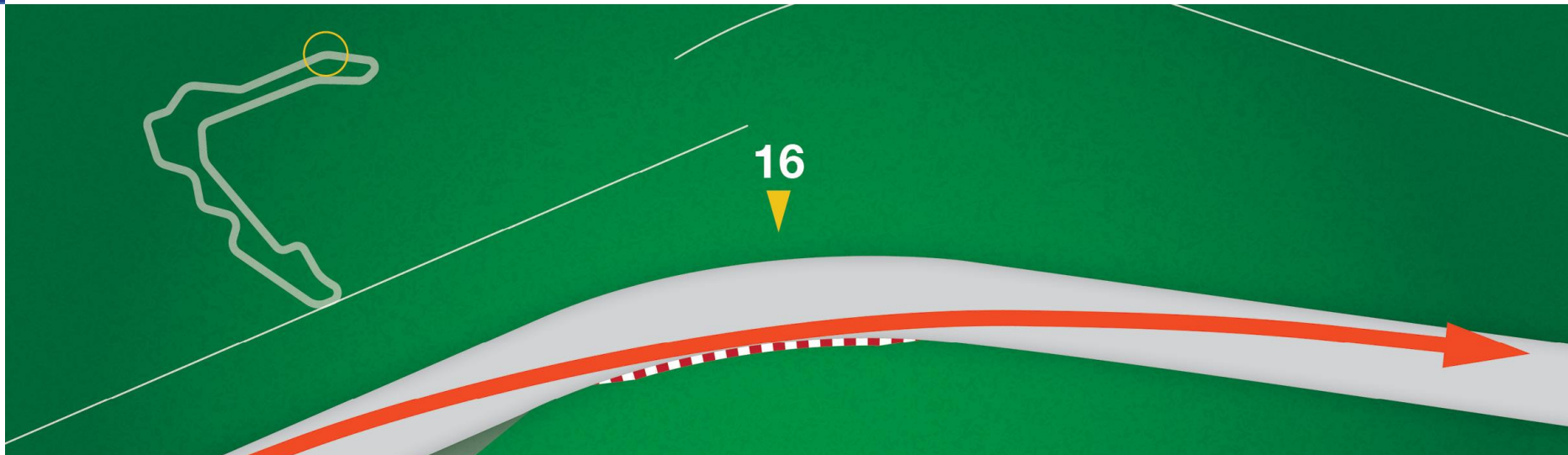
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Turn 16



- VERY FAST-MOST DANGEROUS TURN
- Brush or more brake before T16
- Little/No trail brake!
- Late apex ON curb (second half)
- Let car track out, brief gas, then prepare to brake for T17

NNJR First View of Turn 16



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PORSCHE

NNJR Turn 16 Apex



Lap at Pitt Race



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NNJR On the Curb! Note distance to Turn 17!



Lap at Pitt Race



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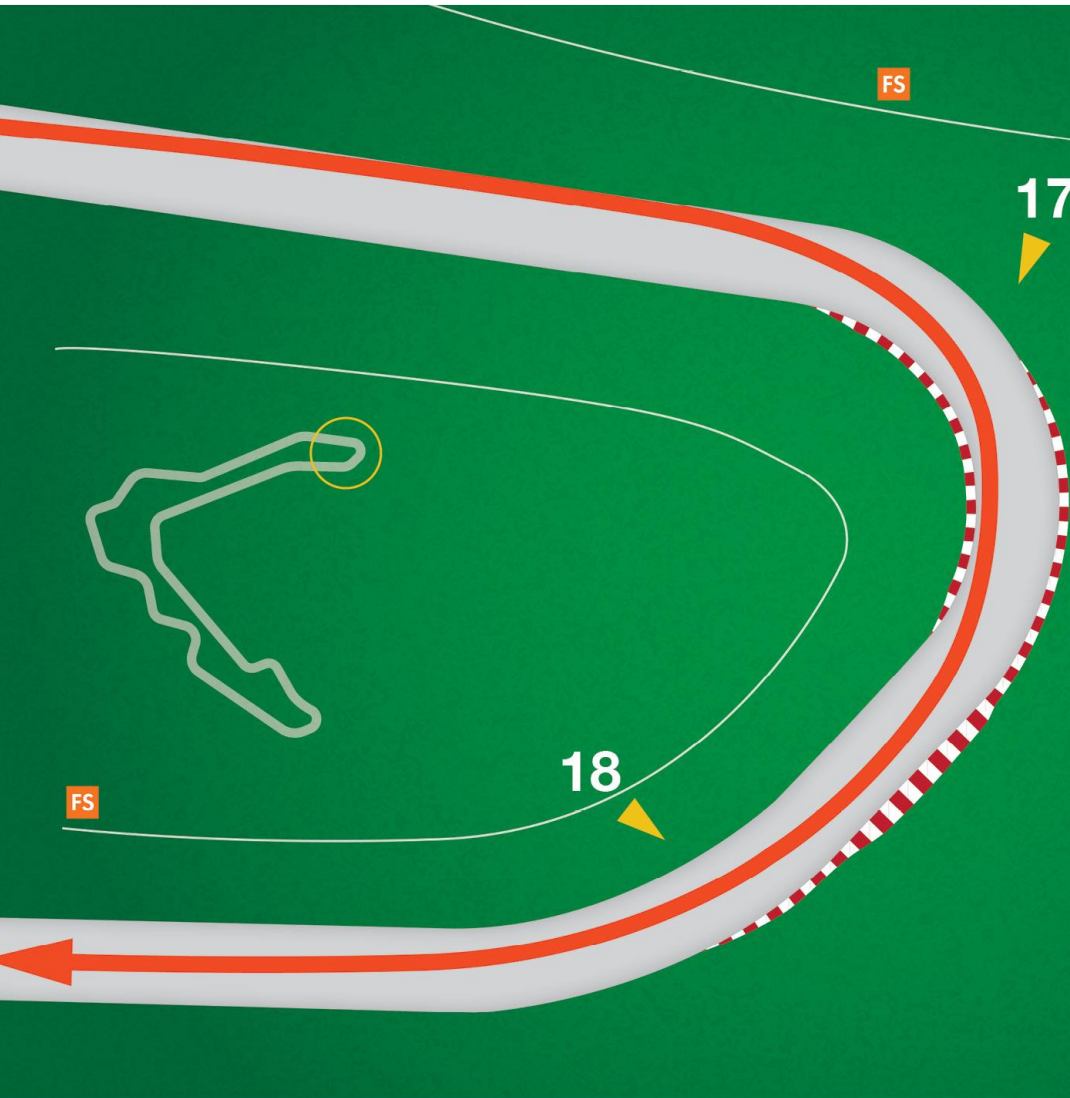
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Turns 17 & 18



- Slow in, fast out!
- Brake at 2 or sooner
 - *2nd most dangerous*
- Hold long apex mid to late curb
- One steering input
- Gas as car heads uphill, soon!
- One arc ends up mid track before T19

Lap at Pitt Race



NNJR Turn In for Turn 17



Lap at Pitt Race



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PORSCHE

NNJR Long Apex



Lap at Pitt Race



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PORSCHE

NNJR Long Apex! On the Gas



Lap at Pitt Race



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NNJR Track Out Curb is ROUGH



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Turn 19

- Not a “turn”
- WOT
- Close to apex curb
- Move track right at exit
- Left Side Passing T19 to T1

FS

19



Approaching T19 and Pit in



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PORSCHE

NNJR Turn 19 Apex: Flat Out



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PORSCHE

NNJR Pit Straight



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- Focus on Learning
 - Late turn in and apex, then adjust
 - Long brake zones
- Reminders
 - Very easy to be early (and off track!)
 - Many corners look similar, at first
 - Be patient
 - Use your track map and take notes: LOTS of notes
 - Some drivers have been here before: X on back

