

On Track Vision Basics and Tips

NNJR Track Side Classroom Series



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 Lightning, 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.



- Where to Look
- Adapting to Track Driving
- How to Look?
- When to Look?



WHERE TO LOOK?



- “Classic” Advice

- Look (far) ahead (20 sec)
- Look where we want to go

- Focus

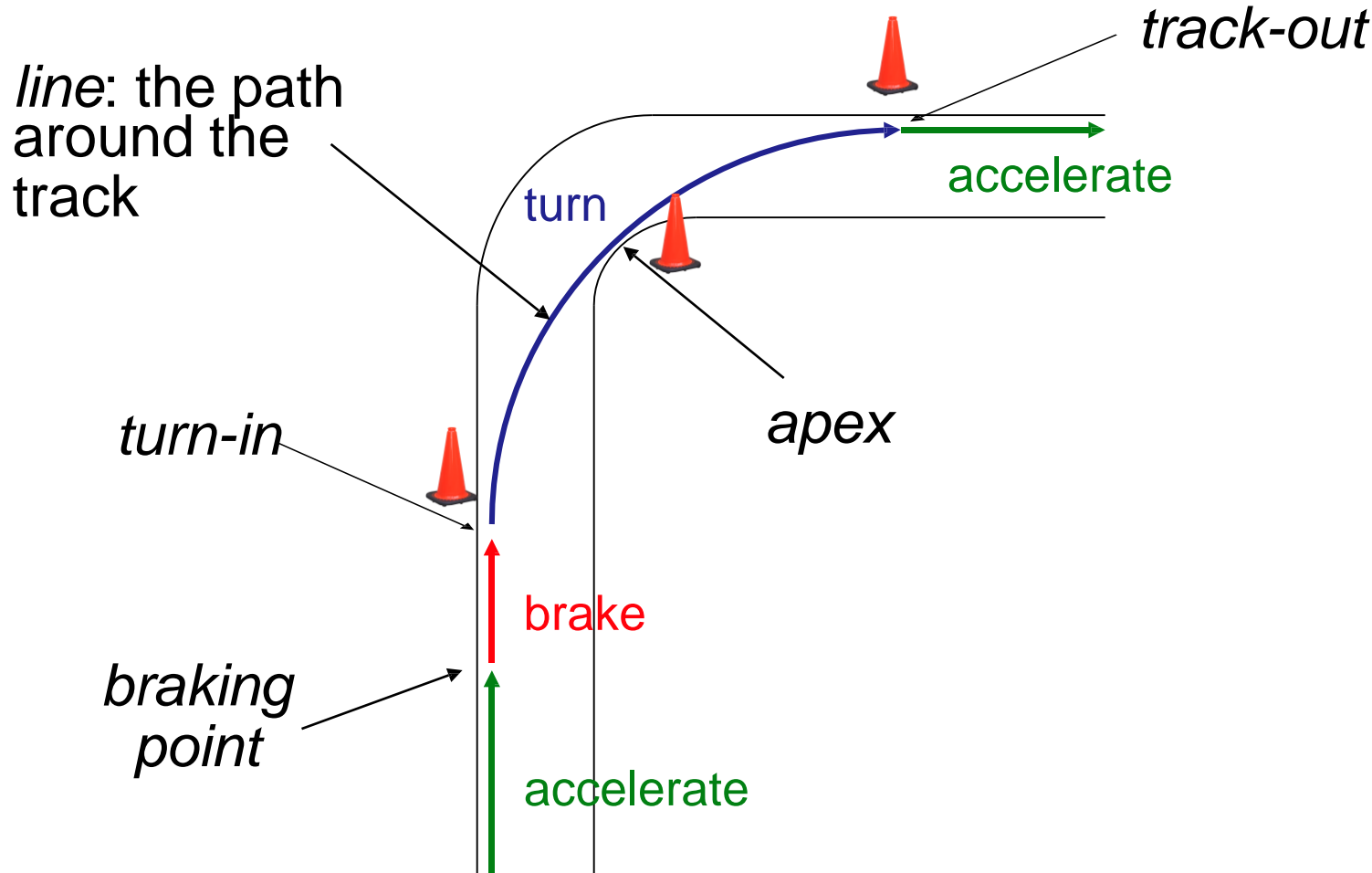
- Approaching brake zone, look at Turn In, Apex (or EOB)
 - Beginning of braking (BOB) is peripheral vision
- Approaching corner, look at apex (or EOB)
 - Turn your head now!
- Approaching apex, look at track out
- Etc.

- Use Reference Points (RPs)

- Cones
- Fixed items: fence, curb, tire marks, etc.



- Use reference points to drive a consistent line



Slide by Chuck Tucker from community.hagerty.com, used under



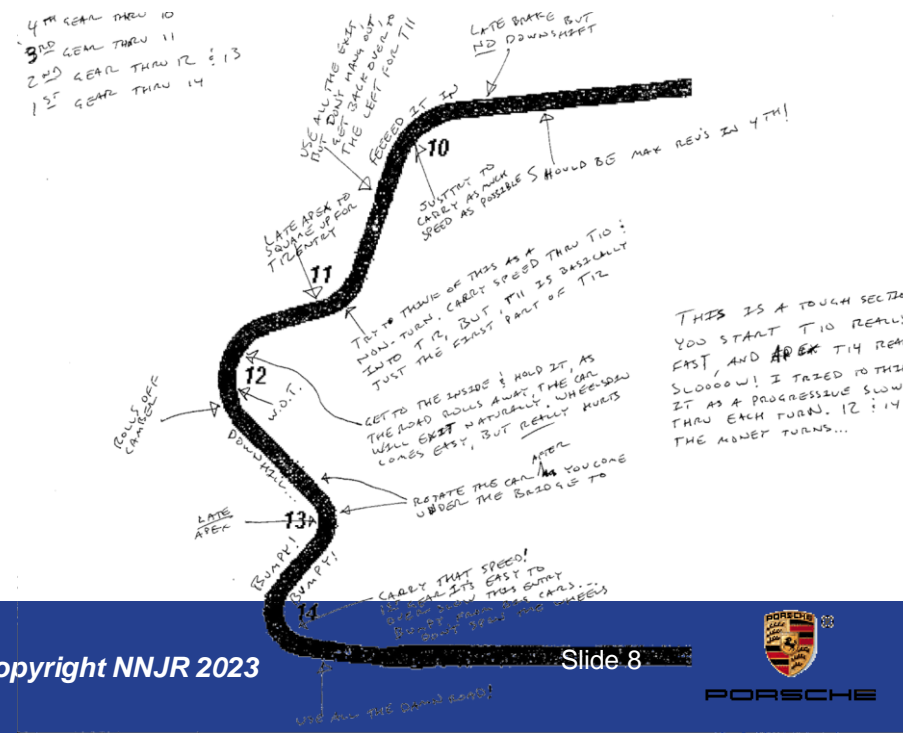
NNJR RP's: You Can't Have Too Many

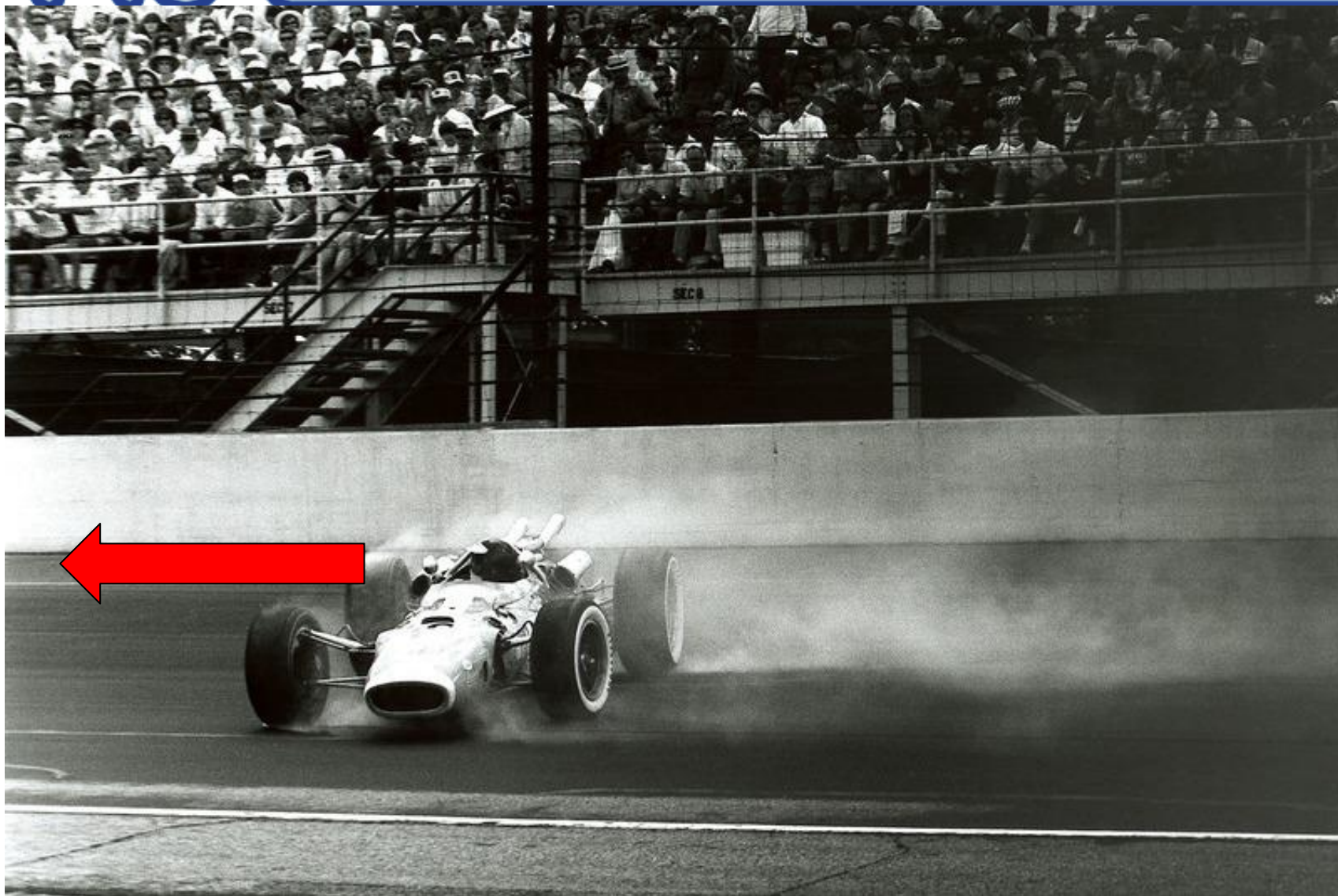


- RP = Reference Point
- Basics
 - BOB, TI, A, TO
- Essential Additions
 - Elevation, surface, color changes
 - All other unique features
- Want to Get Better?
 - More: complete “mental picture”



- Consistency; i.e. “Repeatability”
 - “Hit Your Marks”
 - If it doesn’t look the same, it isn’t the same
- Write them down (track map notes)
- Create a mental picture
 - Use for Visualization



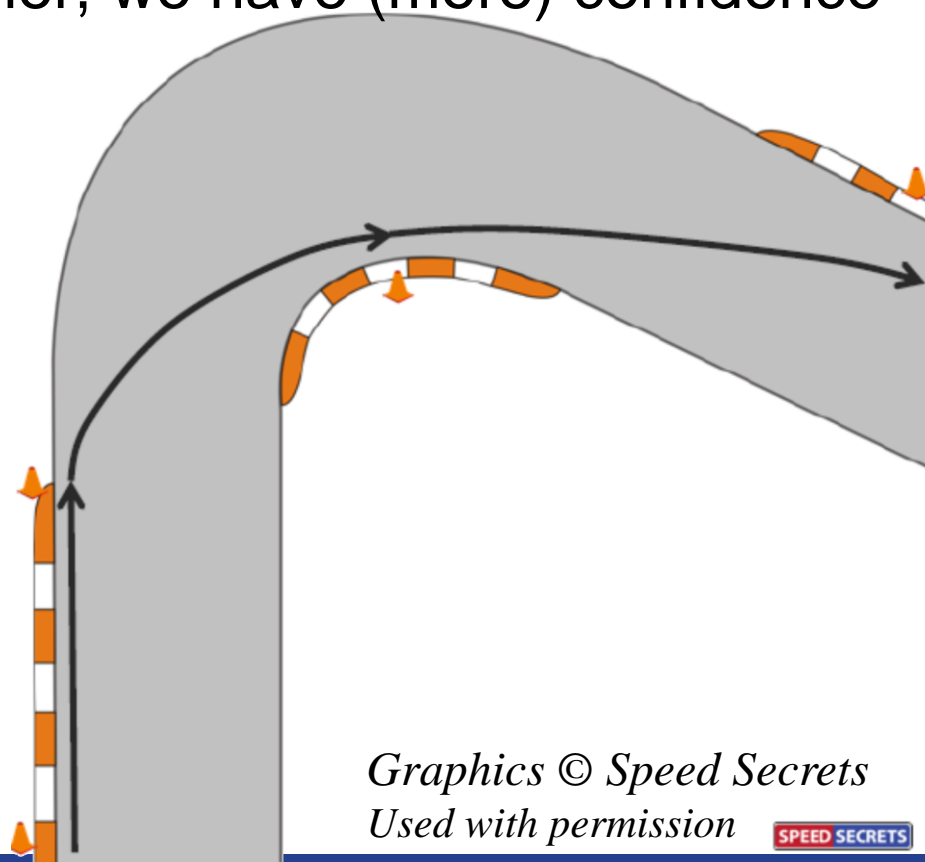
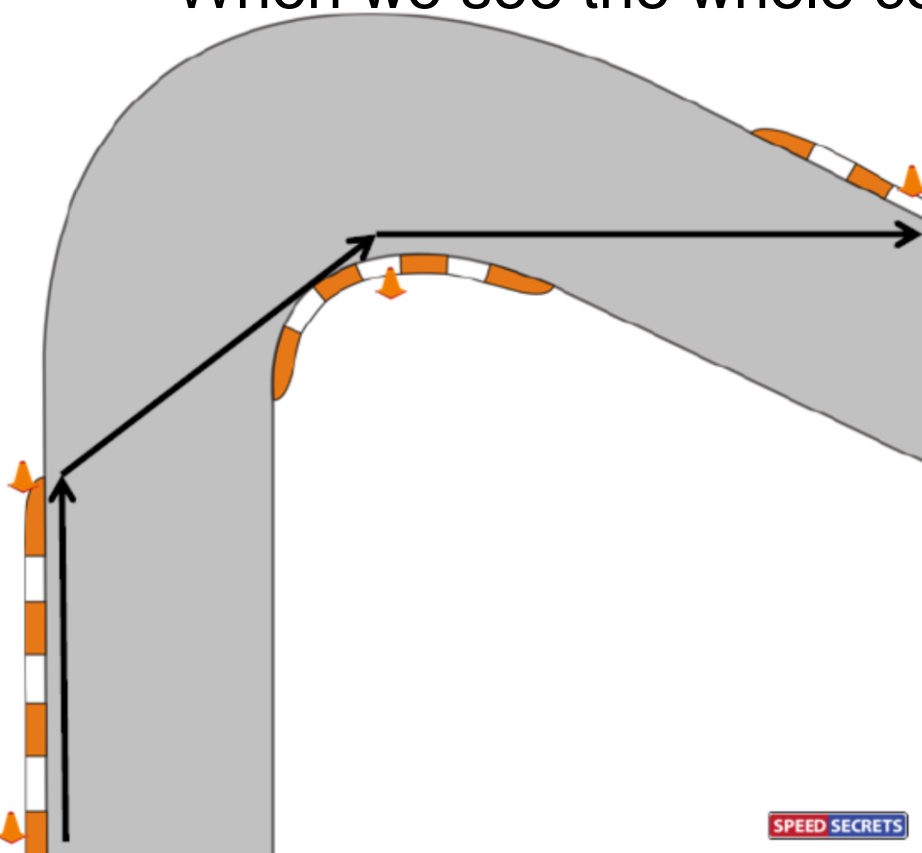


ADAPTING TO TRACK DRIVING

NNJR How We "See" a Corner



- A curve requires 3 points (basic geometry)
 - Our eyes have to "see" the whole corner
 - When we see the whole corner, we have (more) confidence



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SPEED SECRETS

SPEED SECRETS



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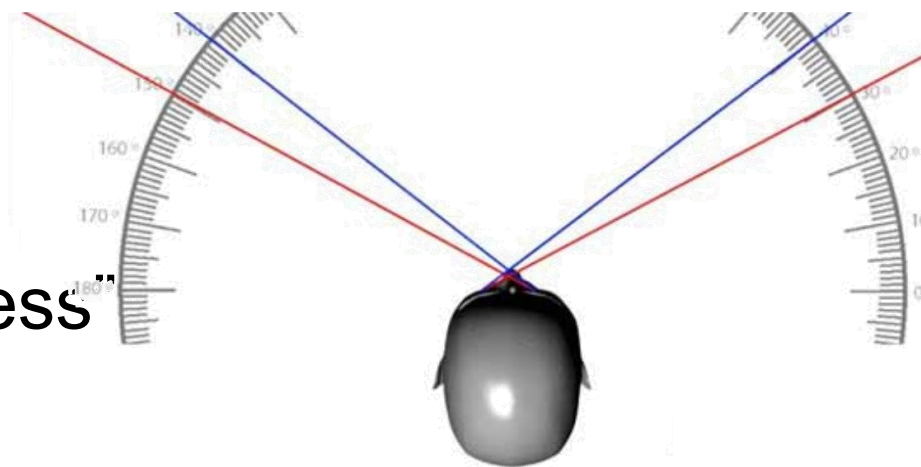
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- Focus ahead and use peripheral vision when close to RPs
- Part of depth perception
- Essential for “track awareness”
 - Mirrors
 - Cars, objects in motion



- Critical part of Situational Awareness
 - MUST be aware of cars behind
- Should never be surprised by a car in mirror
- Scan mirrors (esp. rear view)
 - On and end of straightaway
 - Are cars closer or further away?
 - Exiting a corner
 - Confirms how close the next car is

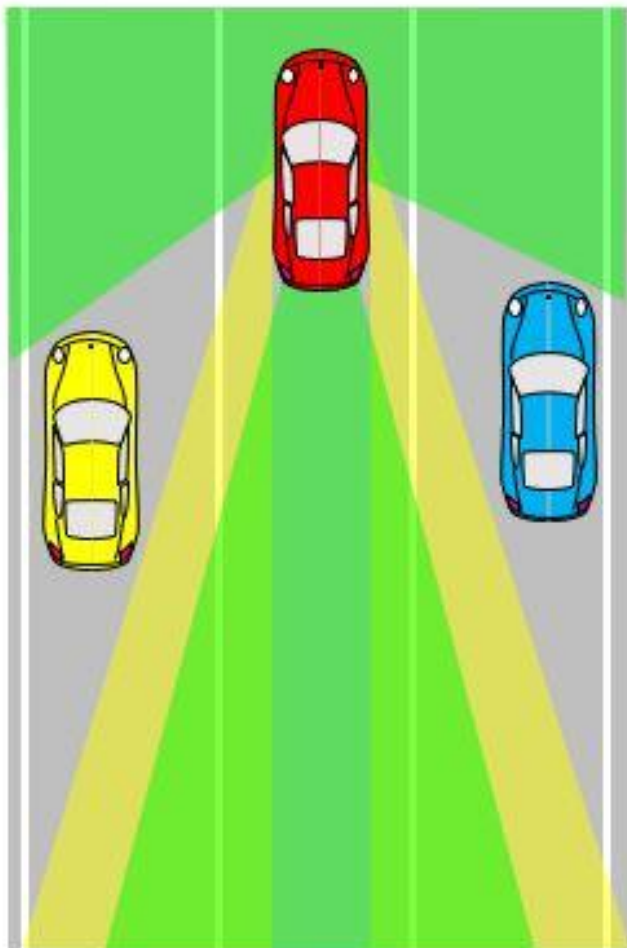
- **Start in correct seating position!**
 - Height tradeoff: up helps vision, down helps kinesthetics

MIRRORS

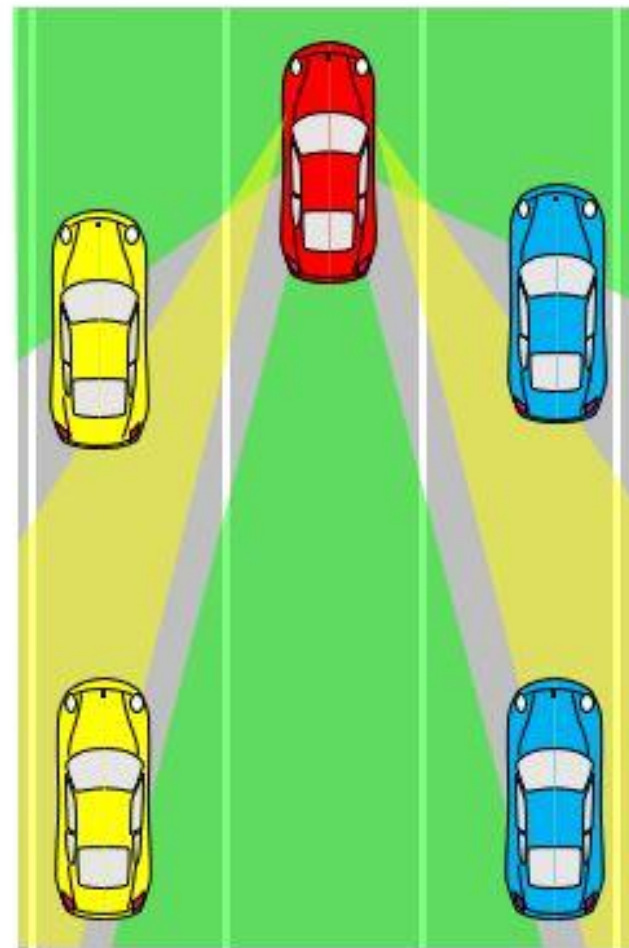
- **Rearview Mirror**
 - Adjust to see entire rear window
- **Left Mirror**
 - Rest head against driver's window
 - Adjust to barely see left rear fender
- **Right Mirror**
 - Lean right so head is under rearview mirror
 - Adjust to barely see right rear fender



Common



Better



G. Plazer, "The Geometry of Automotive Rearview Mirrors—Why Blind Zones Exist and Strategies to Overcome Them," SAE Tech. Paper 950601 (1995).

- **Focus**
 - Central vision, 1 second or more
- **Peripheral**
 - Side/surround vision
- **Glance**
 - Central vision, 1/2 second or less
- **Mental**
 - Your “mind’s eye”

Source: Central Indiana PCA

NNJR Putting it all Together...



Chuck Tucker, Cayman GT4, 09/10/2017
Putnam Park, Lap 7/15
Sector – Sector 1

Total Time: 0:08:19.8
Lap Time: 00:08.3

Glance
Mental
Focus
Peripheral



Source: Central Indiana PC



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PORSCHE

WHEN TO LOOK?



- At Flag stations?
- At Mirrors?

- Critical for your safety and others (*duh*)
- **No excuse** for missing any flag
 - Why do drivers miss flags?
- Inexperienced drivers
 - Not enough scanning (“glance”)
 - Incomplete “mental picture”
- Experienced drivers
 - Tunnel vision: e.g. chasing a car or a laptime
 - Incomplete “mental picture”
 - “In a rut” and forget the basics

NNJR Flag Station 1



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NNJR Flag Station 2



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NNJR Flag Station 1



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- When should I look in my mirrors?
 - Entering a corner
 - Middle of a corner
 - Exiting a corner
 - Middle of straightaway
 - Entering a braking zone

- When should I look in my mirrors?
 - ~~Entering a corner~~
 - ~~Middle of a corner~~
 - Exiting a corner
 - Middle of straightaway
 - **Entering a braking zone**

- In a rut / lose focus
- Pressure
- Tired
- Distracted



- Follow classic advice
 - Look far ahead
 - Look where you want to go
 - Adjust mirrors
 - Use Reference Points
- Adapt to Track Driving
 - Reprogram for faster speeds
 - Use Focus, Glance, Peripheral and Mental Vision
- See flags early
- Check mirrors at the right time
- Pressure, distractions, etc. reduce vision...a lot