



# Lime Rock Park



## NNJR "Trackside Classroom"

### ***How to Go Faster, Safely***

*September 17, 2020*



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## ***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 Watkins Glen, 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 Go Faster, Safely



- Avoid “Sloppy” driving
- Early Identification
- Braking for safety and speed
- Situational Awareness
- Summary



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# NNJR “Sloppy” Driving



- Holding the car in on corner exit
- “Jumping” on/off the gas pedal in a turn
- Giving a passing signal then moving “out of the way” of rapidly approaching car
- Missed apexes
- Trying to drive fast (“too fast”) the first few laps
- Early apex / late recognition



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# "I never drove a perfect lap"

## Stirling Moss



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# Kill Sloppy Driving Fast!



- Look for (be aware of) “sloppy driving”
  - Yours and others
- More than one instance in a session?
  - Pull in and do a mental “reset”
    - Which Reference Points did I miss?
    - What mistake did I make?
    - What is my frame of mind? i.e. focus level
    - Set one focus target for the rest of the session

***“There’s a huge difference between knowing what you need to do and being able to execute it.”***

*--David Murry*





## “Sloppy Driving”

- Holding the car in on corner exit
- “Jumping” on/off the gas pedal in a turn
- Missing apexes by a foot (or two)
- Giving a passing signal then moving “out of the way” of rapidly approaching car
- Missed apexes
- Trying to drive fast (“too fast”) the first few laps
- Early apex / late recognition



## Reminder: Survival Skills



- Most drivers don't realize they are only a "heartbeat away from disaster"
- They say you learn from your mistakes. And many of mine have been of the noisy and expensive type.
- I'm amazed at how slowly most drivers react . . .when something happens, it's time to slow down; not now, but *right* now.
- . . . He crashed not because he backed off in a corner, but because
  1. He was going too fast for the line he was taking
  2. He backed off poorly

*Rick Bye*



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- When?
- In a turn

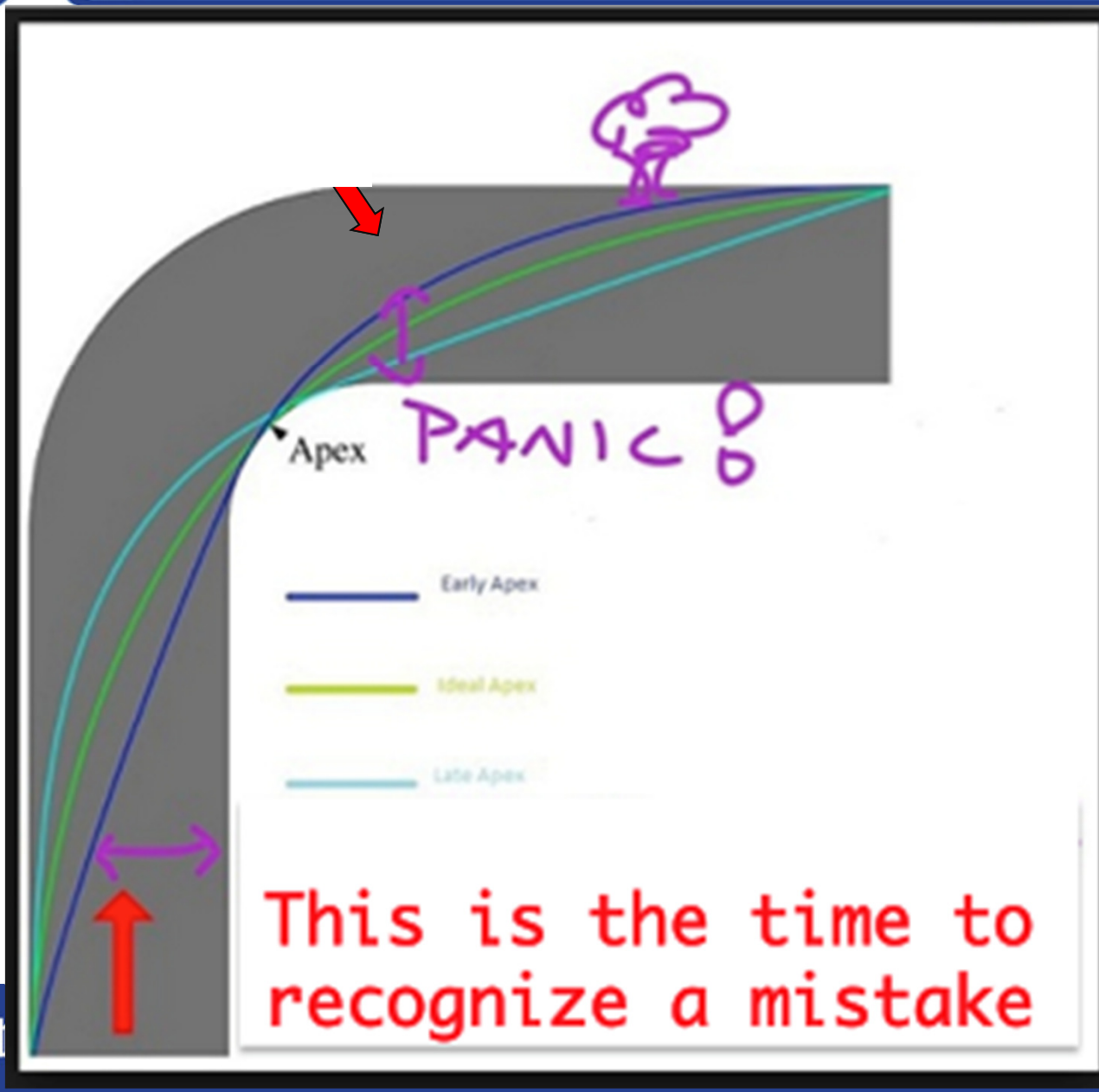
*“If you are any good, the instant you turn your hands into the corner, you know if you’ve made a mistake.”*

*“If you have to be going backward to know you’ve made a mistake, you’re not very smart.”*



*Skip Barber*

## Early Apex

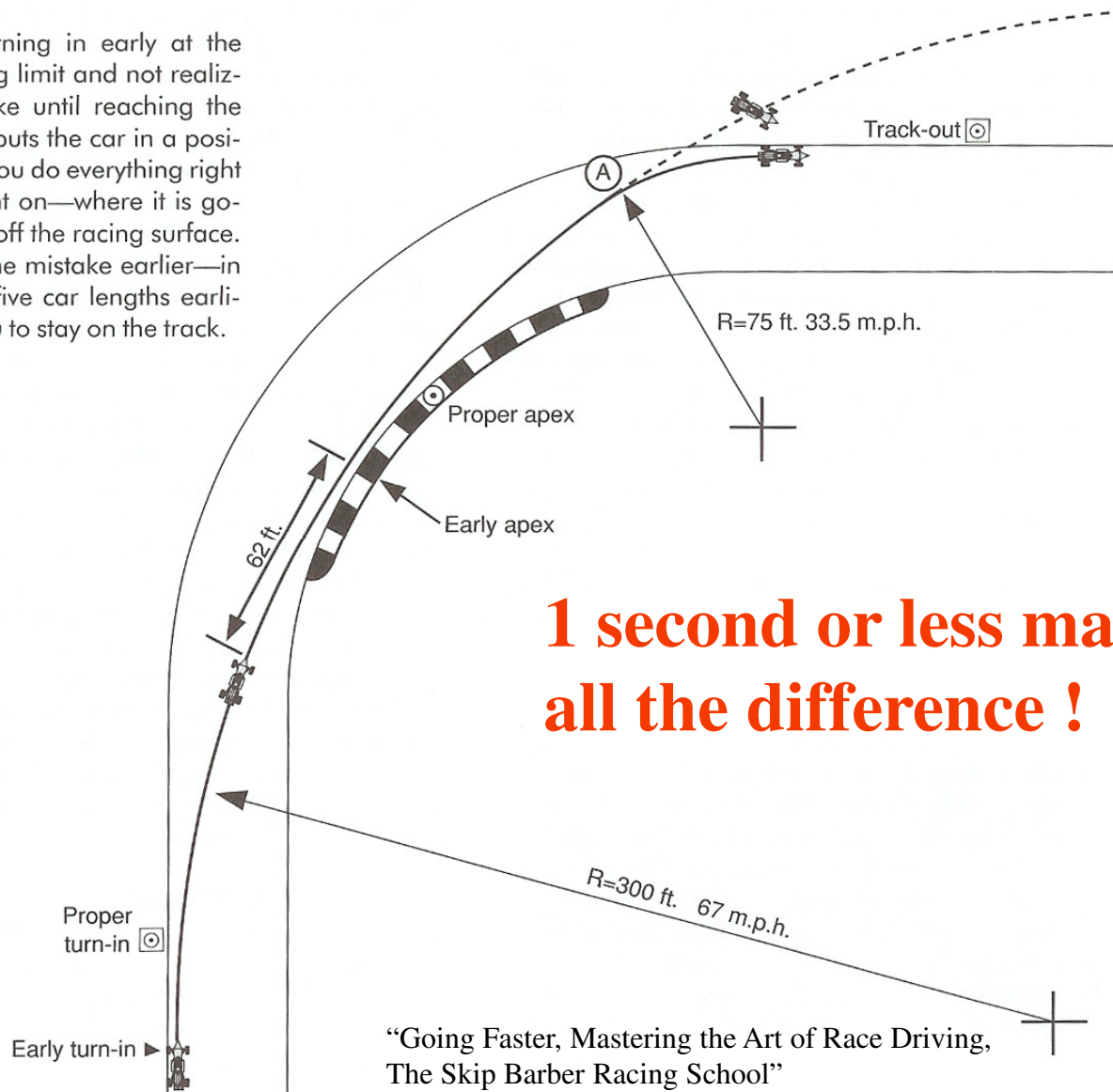




# Immediate Action (Correction) Prevents Trouble



**Fig. 3-1.** Turning in early at the car's cornering limit and not realizing the mistake until reaching the apex curbing puts the car in a position—even if you do everything right from that point on—where it is going to end up off the racing surface. Recognizing the mistake earlier—in this case just five car lengths earlier—allows you to stay on the track.



**1 second or less makes  
all the difference !**

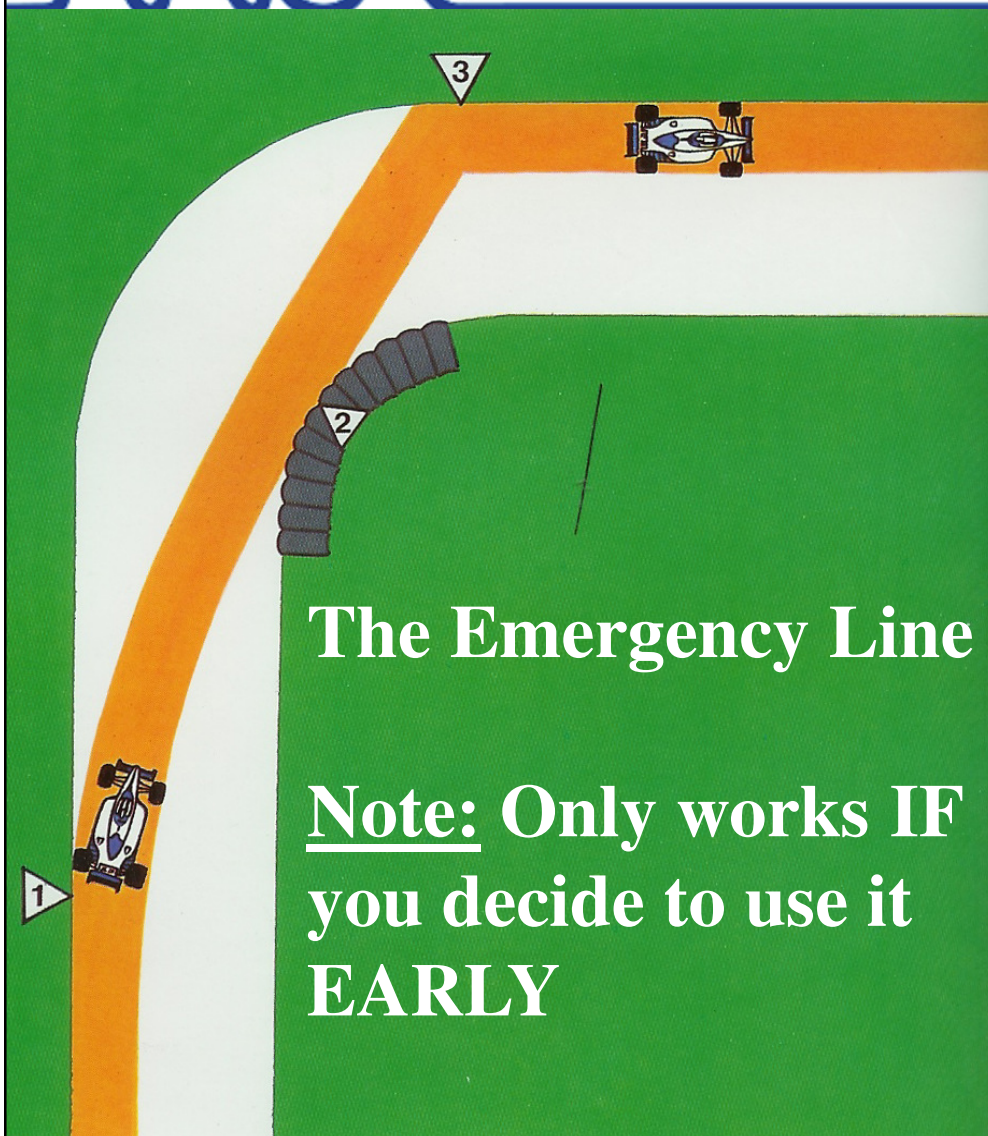
“Going Faster, Mastering the Art of Race Driving,  
The Skip Barber Racing School”



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“If the signs point to an early apex,  
you have to *instantly* switch your  
concerns from driving through the  
corner faster

to driving away from the corner with  
the car in one piece.”

-- Carl Lopez

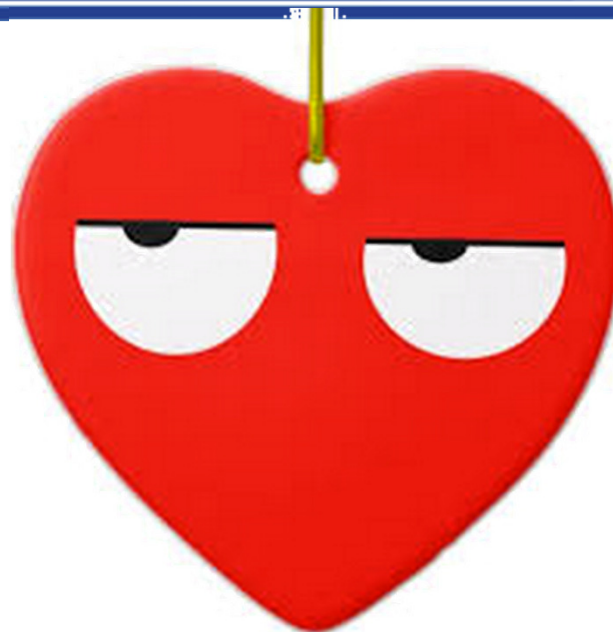
# NNJR Early Identification



- When? Early. Really Early!!
- In a turn
- In a braking zone
- In a skid
- Mechanical failure
- Fatigue



- **Correct** (steering input)
  - Do it NOW
    - Higher speed = smaller input
    - Pedal adjustments = light
- **Pause**
  - Allow the car to settle
    - Do not overcorrect
- **Recover**
  - Bring the car under control
  - Use all the track you need
  - Sacrifice your line if you need more pavement to slow down





- Brakes
- Tires
- Suspension
- Drive Train
- Fire





- Two mistakes in a row
- Three mistakes in one lap
- Failure to see upcoming traffic
- Inconsistent lap to lap
- Feeling overheated
- Cramping in your hands
- Neck and shoulders fatigue
- Loss of attention to “detail” - trance like state.



# How to Go Faster, Safely



- Avoid “Sloppy” driving
- Early Identification
- Braking for safety and speed
- Situational Awareness



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# Braking for Safety and Speed



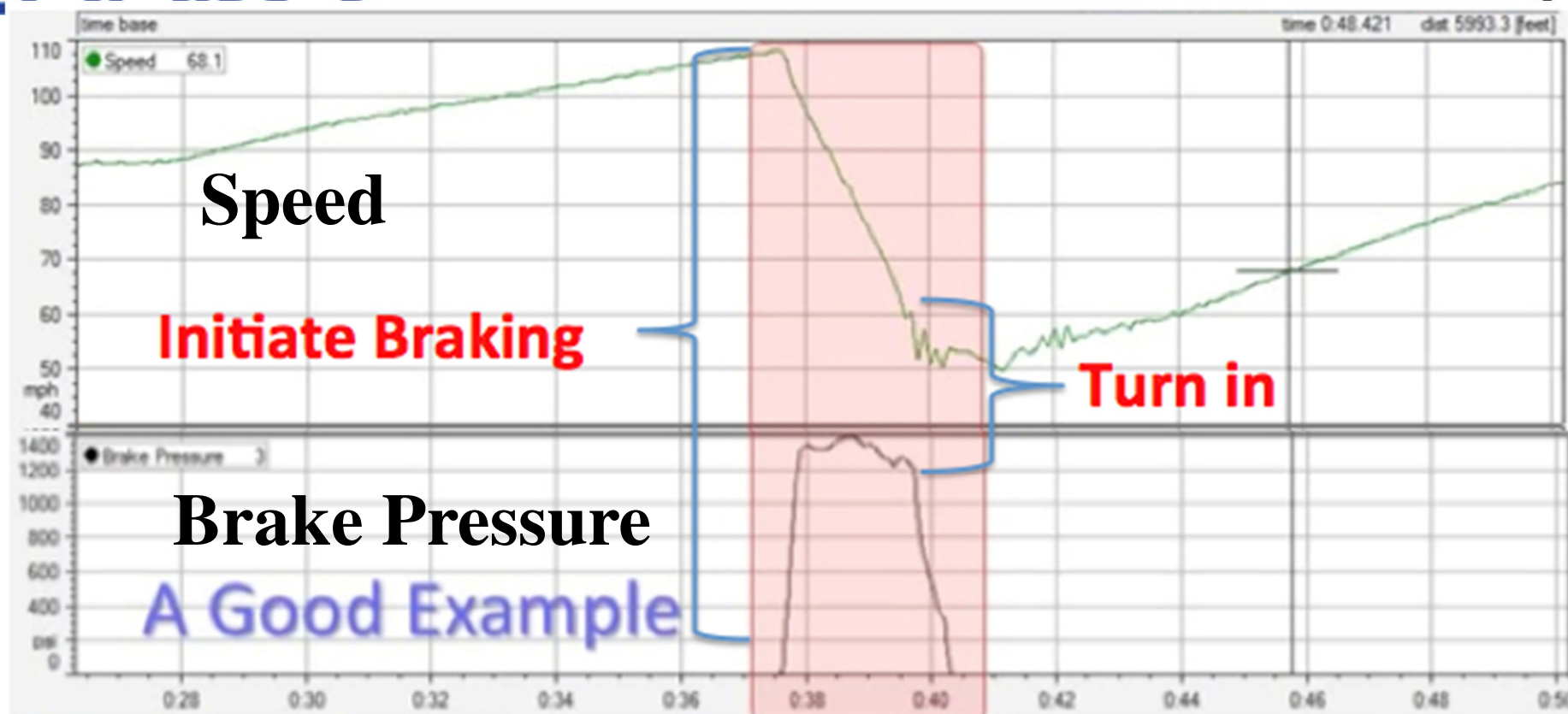
- Common Braking Mistakes
  - Slow to apply brakes hard (or too fast)
    - Coast before braking
  - Braking too late; too much trail brake
  - Jump from heavy brake to heavy gas
- Key Reference Points
  - Throttle Application Point
  - End of Braking
- Challenge
  - Imperceptible move from brake to gas



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## Braking: How to Go Faster, Safely



- Nail your Reference Points
  - End of Braking
  - Beginning of Braking
  - Brake pressure at Turn In
- Problems?
  - Miss BOB? Too fast at Turn In?
    - No brakes? Brake fade?
    - Straighten wheel and brake hard; use run off
  - Too fast at EOB: bail out line; delay gas
  - Too much brake at EOB: slow release, delay gas

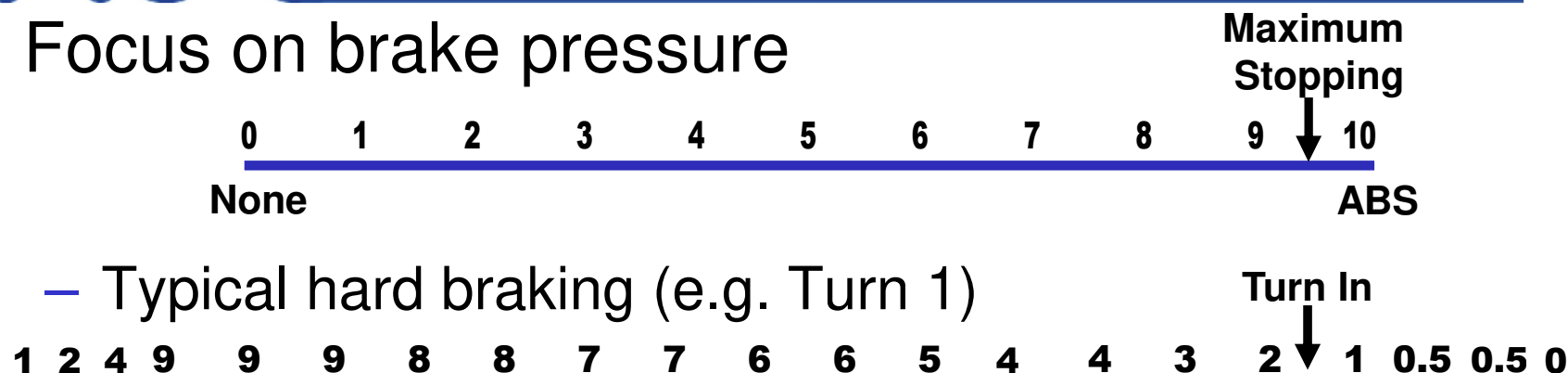




# NNJR Tips to Improve Braking



- Focus on brake pressure



- Focus on End of Braking (EOB) and Brake Release
  - Much more important than beginning of braking (BOB)
  - Critical RP: same point, speed (+/- 1-2 mph) each lap
  - Be aware of brake pressure at Turn In
    - Should be the same each lap
- How smooth is your brake release?



# NNJR Important Context



- “The basics matter. And it's the basics, done well, that truly matter.”
- “The very, very best drivers in the world, they just do the basics better than anybody else does.”
- “High performance driving is all about the correct timing, application of pressure, and release of the brakes.”



-- Ross Bentley



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- “Sloppy” driving
- Early Identification
- Braking for safety and speed
- Situational Awareness



# NJR Situational Awareness



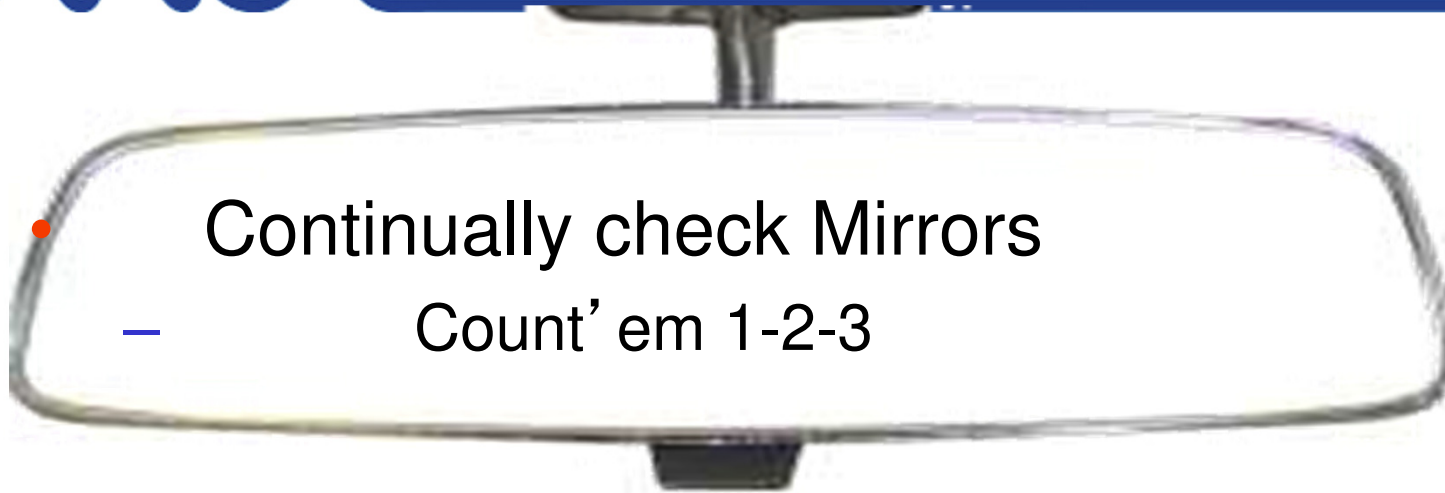
- How will you spend your \$10 of attention/focus\*
  - \$6 on Reference Points, \$2 on braking, \$1 on gauges
    - How much is left for traffic, flags, run off room, track surface, etc.?
- Do you have an out?
  - Two cars behind but you only see one?
  - Fast car approaching while you chase your friend?
  - Yellow flag pops out when you just pulled out to pass?
- Common Mistakes
  - Failure to identify or anticipate track situations
  - Lack of traffic awareness
  - Poorly timed passes or passing signals

Keith Code: “A Twist of the Wrist.”



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- Pick the correct time and place to pass
- Pick the right time and place to be passed
- Do NOT move offline when being passed
- Don't harass drivers in NO PASSING zones
- Priority: Rear view and Track Side
- Adjusted correctly? (no blind spots)

# NNJR Situational Awareness



- How far ahead do you look? See?
  - How soon can you see each flag station?
  - “Eyes Up” = Glance as far ahead as possible
  - What’s different on track surface? (Alarm bells!)
- How wide is your vision?
  - Pull off, run off spots
  - Where is there “room”
- How sensitive are your senses?
  - Oil, antifreeze
- How well do you know yourself?
  - Consistent or inconsistent?
  - Focused or distracted?
  - Bothered by traffic?
  - Drive “within yourself” vs. “red mist”

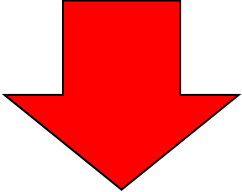






# Situational Awareness



- To go fast(er), you need a big portion your \$10 to spend on it! e.g.
    - Driving the line: \$.50
    - Hitting reference points: \$1.00
    - Traffic: \$1.50
    - Flag stations: \$1.00
    - Car feedback (seat of the pants): \$1.50
- 
- \$4.50 of “change” to spend on one or two changes





## Summary: How to Go Faster, Safely



- No “sloppy driving”
- Identify problems EARLY
  - Any deviation from baseline = Red Flag => ACTION
  - Practice CPR at AX, CCC, skid pad
- Braking: focus on EOB and Brake Release
- Be (very) aware
  - Traffic
  - Track
  - Yourself
- How much of your \$10 is available to “spend”?

**Must Have a Baseline**



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## Agenda: How to Go Faster, Safely



- “Sloppy” driving
- Early Identification
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# WATKINS GLEN TURN BY TURN





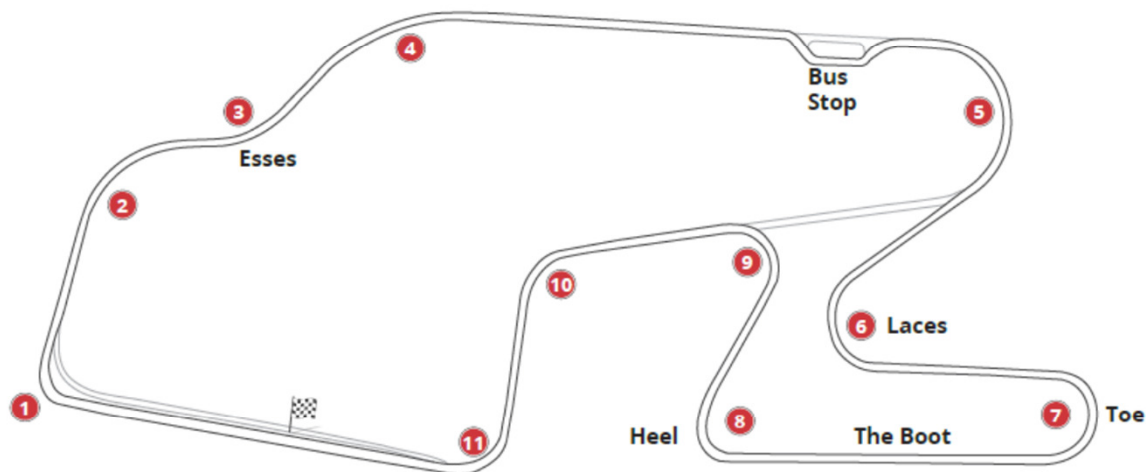
# Deliberate Practice Worksheets



Sensory Input Session(s)

## Reference Points

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



*Write RP's on map immediately after session*

**SPEED SECRETS**  
SpeedSecrets.com



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