

BMW CCA, Los Angeles Car Control Clinic

Handout

WSIR, December 11, 2011

**BMW Car Club
of America
Los Angeles Chapter**



Safety & Rules

- Your P&C insurance does NOT cover you and your car at this event.
- ALL must sign the track and club wavers. Minors must have a parent or guardian sign a “minor’s” waver
- Must compete tech inspection
- No rides. Instructors only in passenger seat. Instructors may give teaching rides.
- 5 MPH in parking lots and roadways
- Use common sense
- No alcohol etc.
- Helmets required for ‘lead follow exercise’ on the big track.
[All drivers for this exercise must be 18 years of age or older.]
- Red Flag means stop
- No food in the Balcony building
- Pick up after yourself

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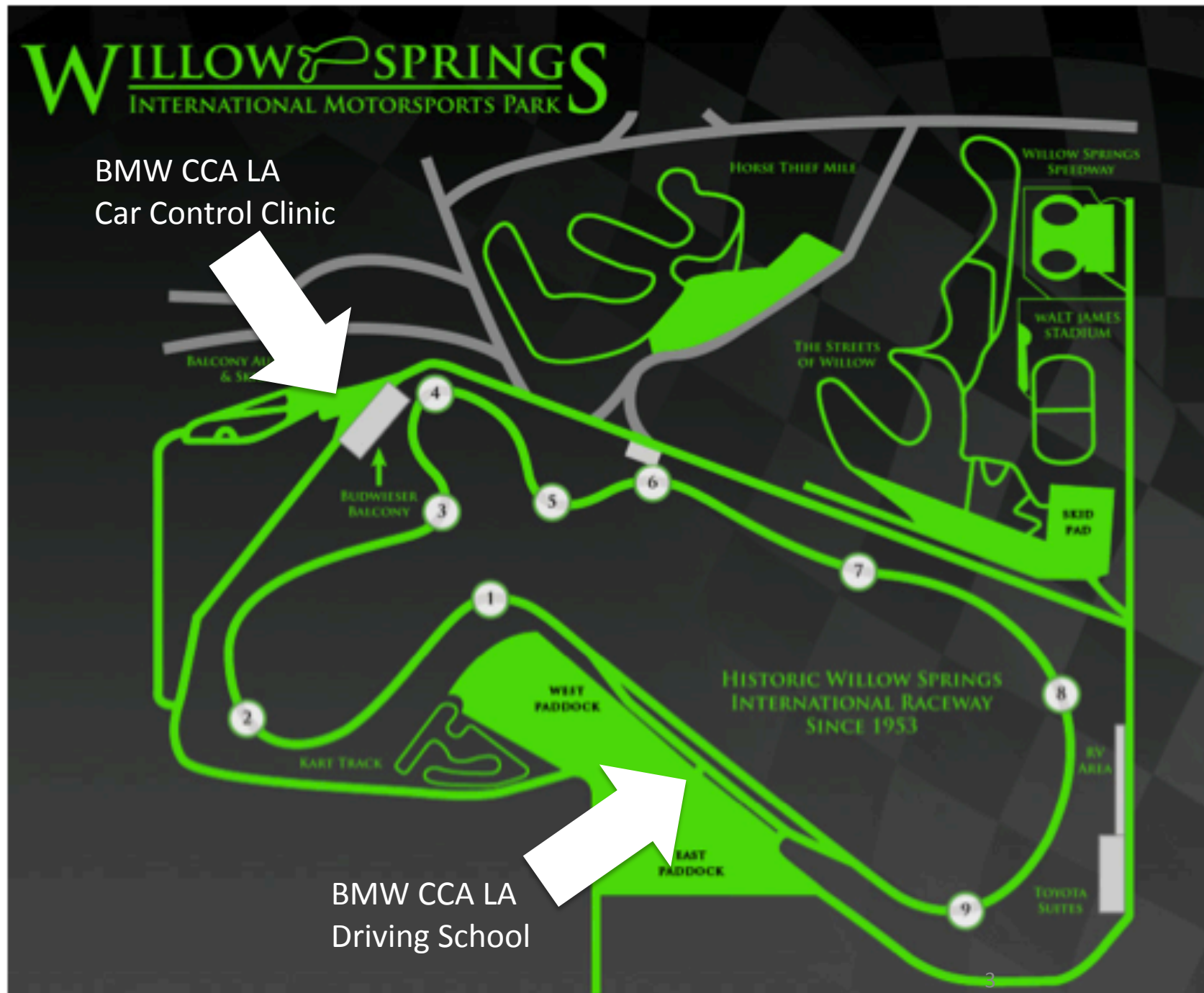
WILLOW SPRINGS

INTERNATIONAL MOTORSPORTS PARK

BMW CCA LA
Car Control Clinic



BMW CCA LA
Driving School



Today's Schedule [TBD]

- TBD Drivers meeting (Main building)
- TBD CCC Ground School
- TBD Clinic exercises
- 3:15 Pick up cones, close up tent
- 3:25 debrief
- 3:30 to 4 PM Big track 'lead follow' exercise
 - ✓ Lead, Mid pack and follow cars
 - ✓ Driving School Instructors [Full HPDE Instructors] in passenger seat
 - ✓ Attending the Drivers meeting mandatory
 - ✓ No convertibles
 - ✓ Helmets [pick up at 3, line up in cold pit at 3:25]
- Done...

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Overview

- **Objective: Prepare drivers to learn some fundamental performance driving skills necessary for car control**
- **Build skills that will make every day driving safer**
- School structured for those with no or minimal performance driving experience.
- Emphasis on fundamentals and basics. Develop a foundation to build skills on.
- Make you a safer driver on the road.
- Exposure to vehicle dynamics & driver inputs to vehicle - via the 3 exercises.
 - **Braking**
 - **Skid Pad**
 - **Slalom**

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Concepts to Discuss

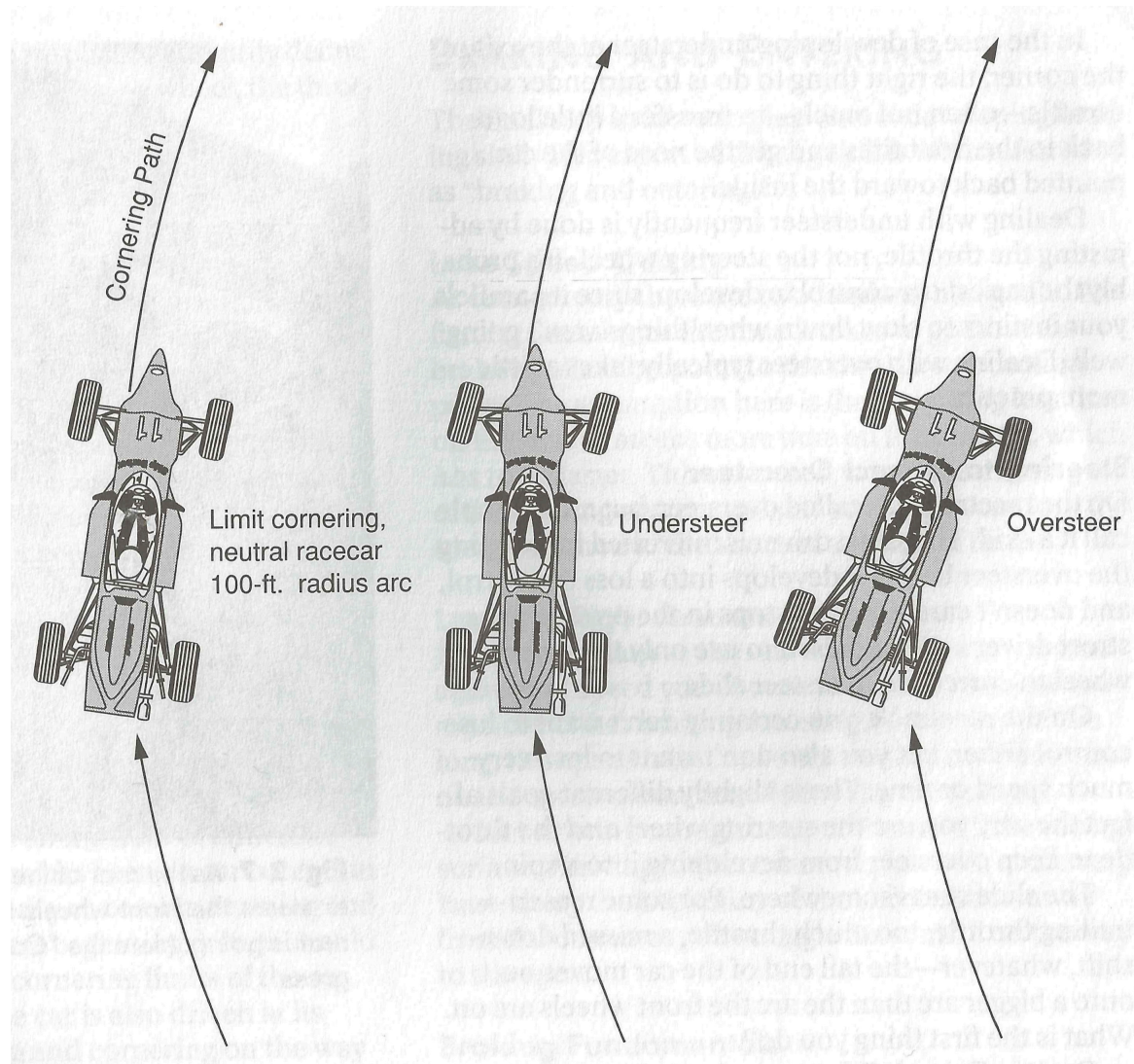
- Seat, mirrors, hands
- Threshold braking
- Oversteer
- Understeer

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Cornering Path

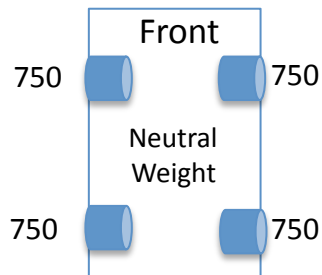
Which is fastest / safest and why?



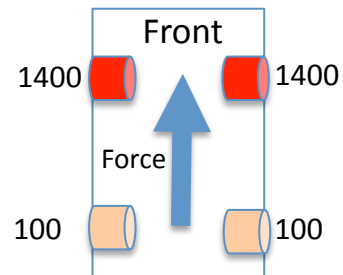
Credit: Dan Sullivan, Going Faster

Weight Transfer

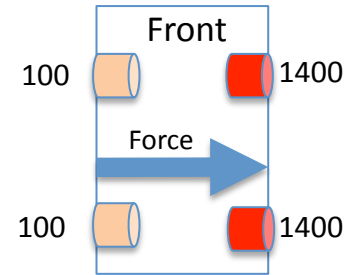
Rest or Constant
Speed



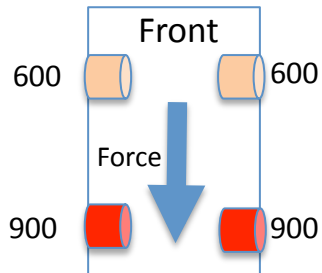
Braking



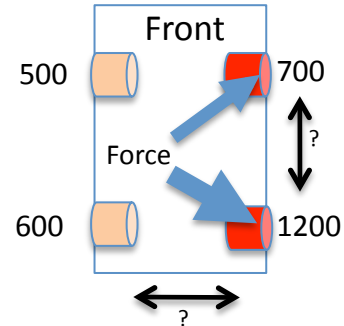
Turning
Constant Speed



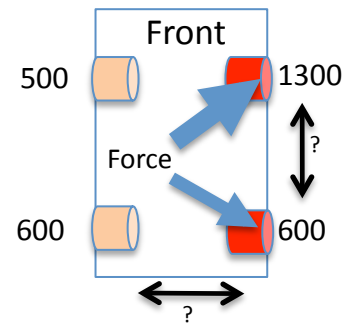
Accelerating



Accelerating and
Turning



Braking and
Turning



3000 pound car with perfect balance

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Weight Transfer

What are the elements that effect weight transfer and your ability to manage it?

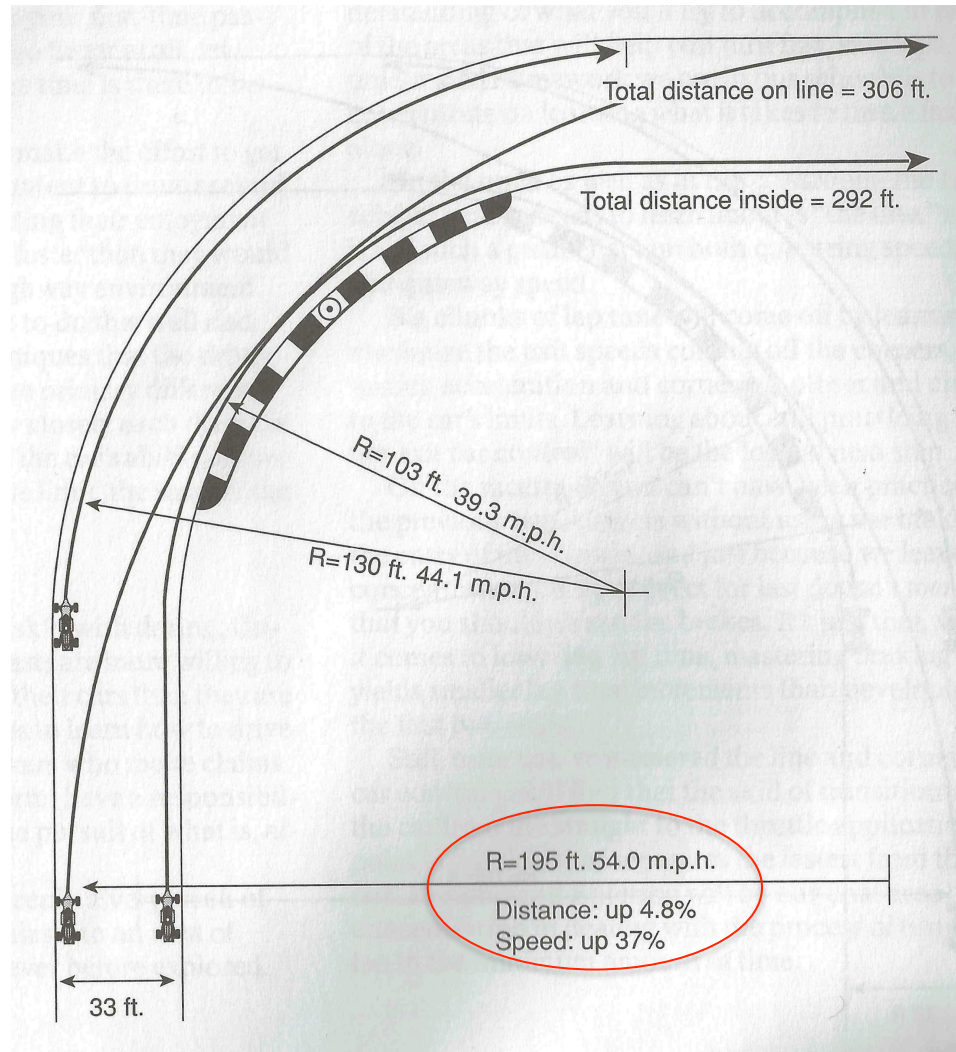
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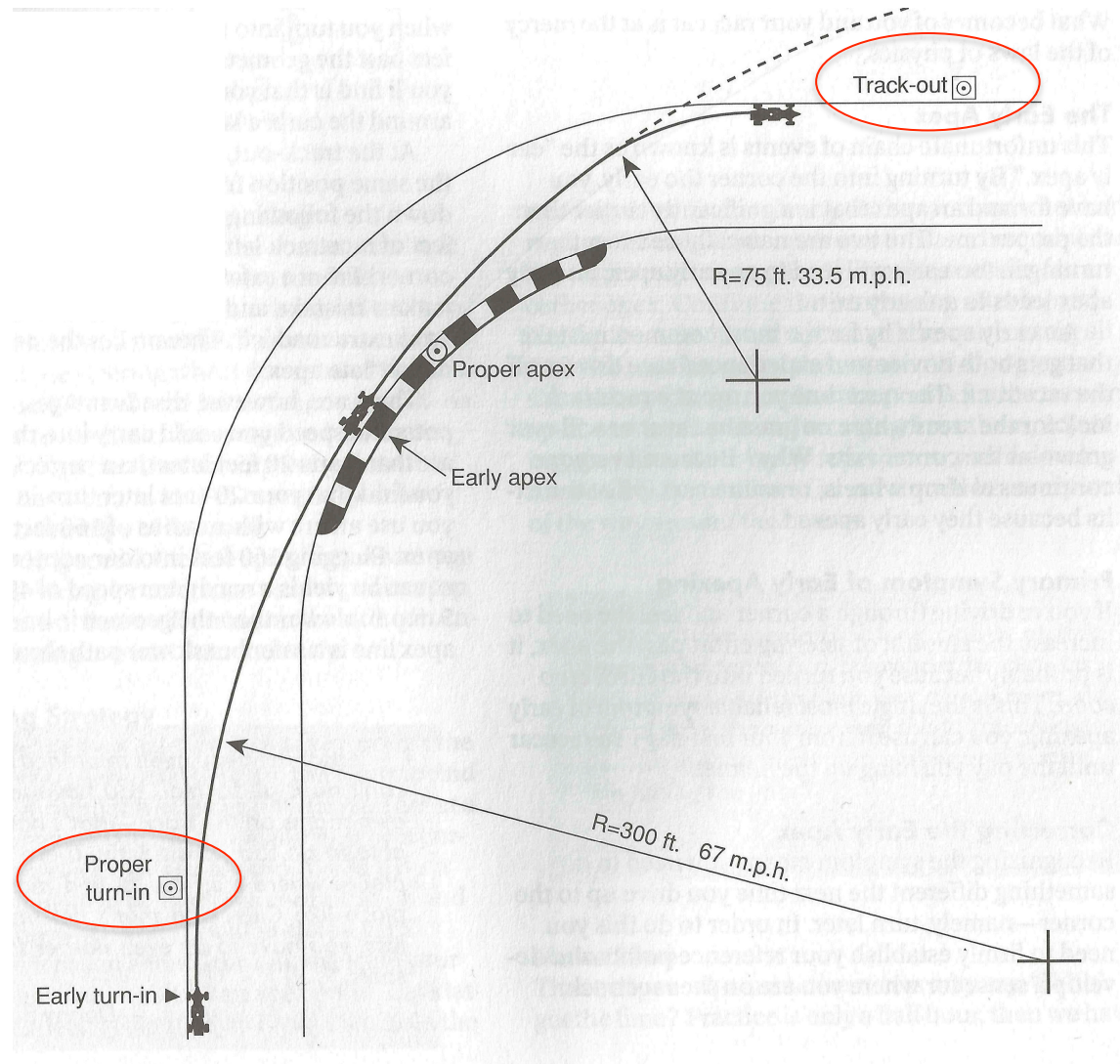


Driving Line (Advanced Topic)



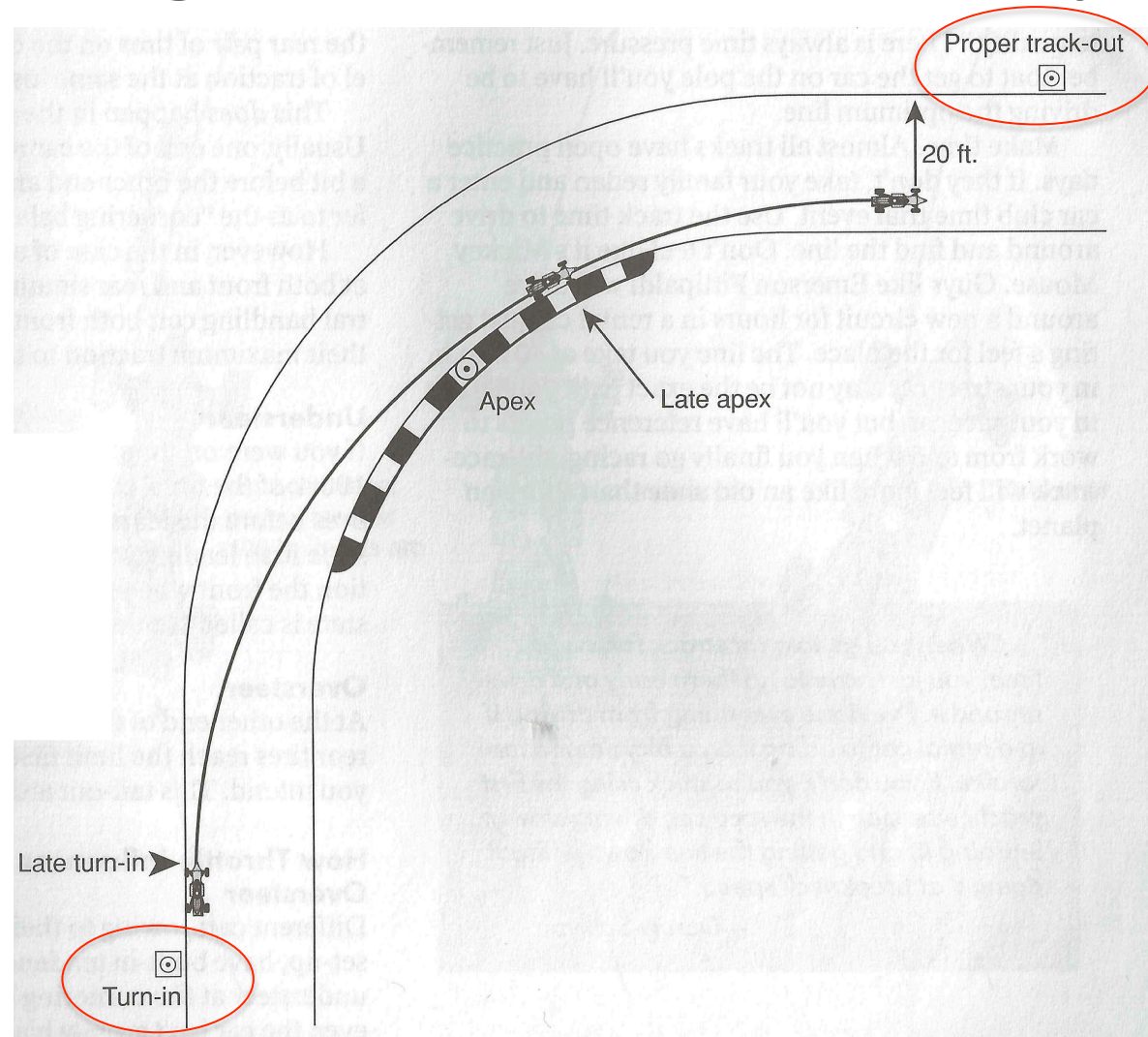
Credit: Dan Sullivan, Going Faster

Driving Line (Advanced Topic)



Credit: Dan Sullivan, Going Faster

Driving Line (Advanced Topic)



Tips that go a long way

- Eyes up, look through the turn
- Anticipate

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Braking Clinic – Sudden Stop



Topic: Straight line threshold Braking at different speeds

Objective: Learn the threshold... ABS, lock up... and how speed effects braking distance

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Braking Clinic – Avoidance



Topic: Zigzag threshold Braking at different speeds

Objective: Learn how weight transfer, side to side and front to back

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Braking Clinic – Emergency Maneuver



Topic: Zigzag, Zigzag threshold Braking

Objective: Learn how weight transfer, side to side and front to back

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Skid Pad Clinic



Topics / Objectives: Weight transfer, adhesion limits, throttle control, understeer, oversteer. Drive without moving the steering wheel. Experience both directions.

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Slalom Clinic - A

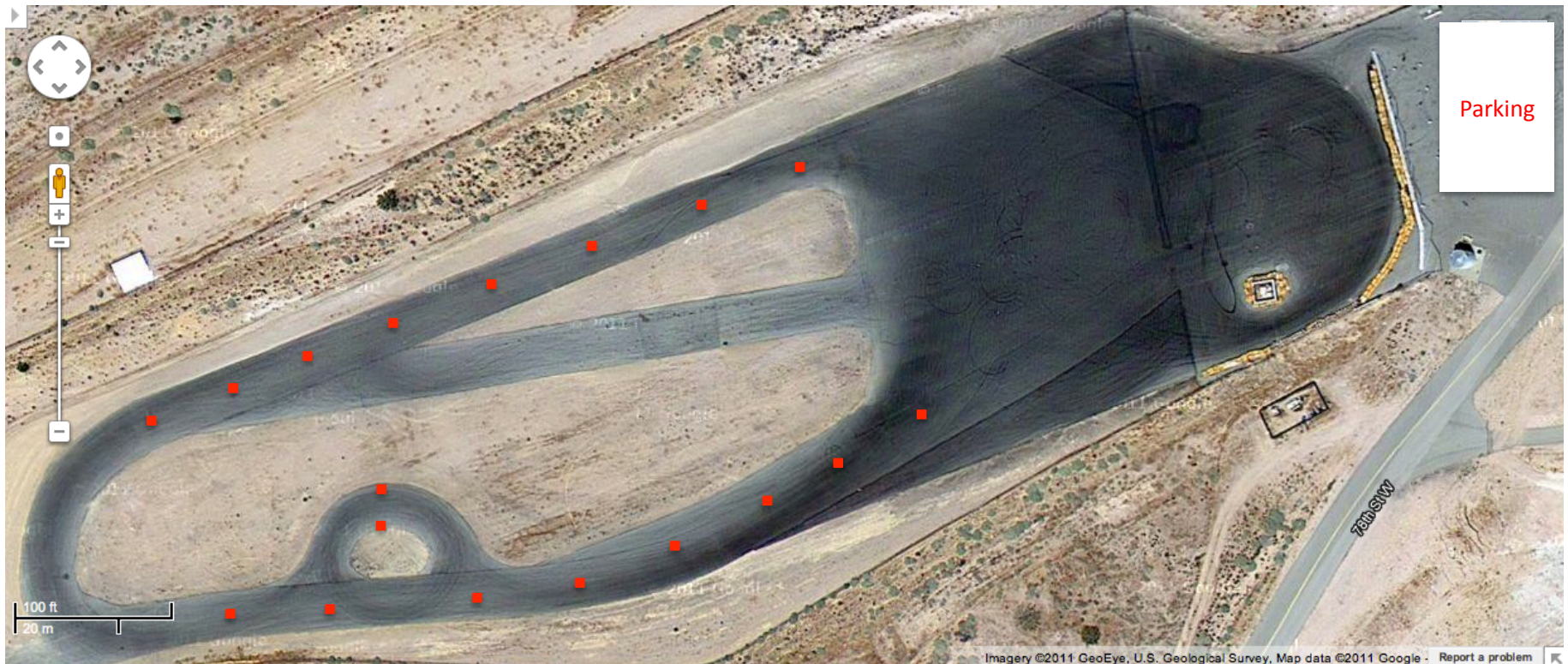


Topics / Objectives: Smooth = fast, vehicle placement, looking ahead, turn in technique. Lateral weight transfer

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Slalom Clinic - B



Topics Objectives: Smooth = fast, vehicle placement, looking ahead, turn in technique. Lateral and fore aft weight transfer.

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Other Club Events

- January 14, Holiday Party, Spectrum Collision
- Los Angeles Driving School
 - TBD
- March 17 - Sunday, March 18: Driving School, Chuckwalla
 - (San Diego Chapter)
- Autocross – Auto Club Speedway
 - March 11
 - May 20
 - June 10
 - September 30
 - November 11
- Check Club Website: **bmwclubla.org**

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Volunteer

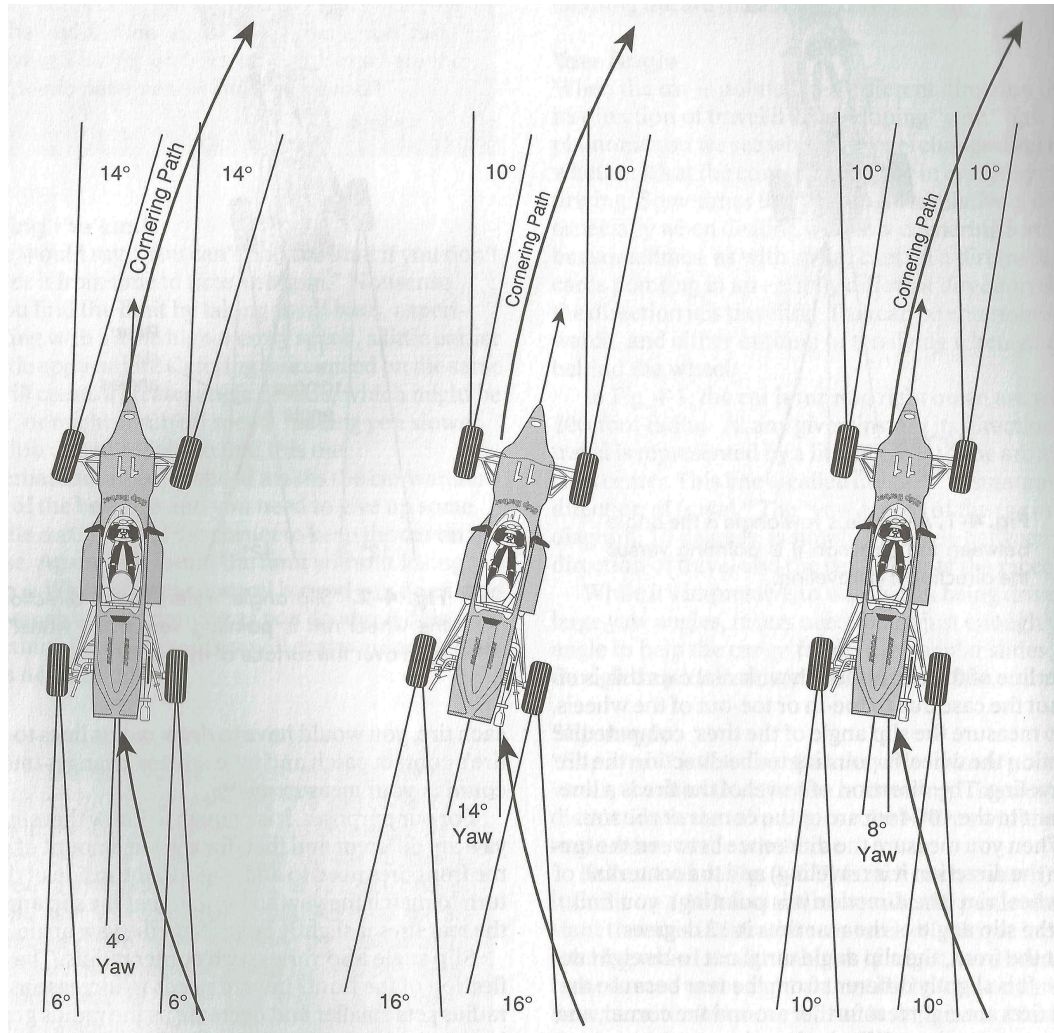
- The BMW CCA LA is a all volunteer, non profit organization
- We need your help with:
 - Autocross, Driving School, Social Events
 - Membership drive, sign up a friend
- Thank our sponsor, Beverly Hills BMW with your patronage

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Yaw and Slip Angle – Extra Credit

“Advanced definition” of over, under and perfect steering



Credit: Dan Sullivan, Going Faster