



Introduction to Autocross

**2026 VTR South Central Regional
Convention
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- TX Spokes
- Low Water Crossing Rd.
- Hillclimb "Bucky's TR6"

Introduction to Autocross

- Autocross Is:
- Low-consequence
- Precision-based motorsport
- For drivers of all skill levels
- Emphasizes car control and technical accuracy
- On a course defined by cones.
- Perfect for beginners to safely explore the limits of their vehicle.
- Success comes down to a few core principles:
- Car and driver prep
- Learning the course
- Memorizing your plan of attack



Event Preparation & Basics

- To maximize your enjoyment, arrive at the venue with plenty of time to spare. Autocross is about driving "quickly" rather than just "fast," and that mindset starts with a stress-free morning. Rushing through registration or skipping the technical inspection creates unnecessary risk. Once you arrive, check in to confirm your **Race Group**, clear out your vehicle, and prepare for the mandatory **course walk**—your only chance to learn the layout before the clock starts.

Vehicle Preparation & Safety

- **Pre-Race Checklist:**

- **Check-In:** Confirm Race Group (1 or 2) and get your car number.
- **Unload:** Remove all loose items, floor mats, and non-secured gear.
- **Top Down:** Lower the convertible top (weather permitting).
- **Battery:** Ensure the battery tie-down is rock solid.
- **Fluids/Tires:** Check oil level and set tire pressures.
- **Tech Inspection:** Get your "second set of eyes" safety approval.
- **Course Walk:** Walk the track to identify "key" cones and braking zones.
- **Numbering:** Apply large, visible numbers to the door with painter's tape.

Tire Pressure Strategy Checklist

- If you are running on original-spec bias-ply tires, start even higher (35+ PSI) to compensate for the significant lack of sidewall rigidity compared to modern radials.



Baseline Autocross PSI Recommendations

Triumph Model	Recommended Starting PSI (Front/Rear)	Notes
Spitfire / Herald	26 PSI / 31 PSI	Front engine weight is low; higher rear pressure may be beneficial on stock vehicles.
TR-250 / TR6	30 PSI / 30 PSI	Neutral front to rear; many TR6 drivers find 32–34 PSI helps mitigate heavy steering during transitions.
TR4 / TR4A	25 PSI / 27 PSI	Standard baseline; increase both by 3–5 PSI if using modern high-profile radials.
GT6 / Vitesse	30 PSI / 28 PSI	Heavy front engine bias; higher front pressure helps support the weight and may improve turn-in.
TR7 / TR8	32 PSI / 30 PSI	Wedge-shaped weight distribution favors a slightly higher front pressure.

Optimizing Tire Pressure for Autocross

- **Tire Design Variance:** Performance varies by design; show-quality tires, daily-driver steel belts, and purpose-built racing tires each require unique strategies.
- **Autocross-Prepped Tires:** Lower pressures (often below 30 PSI) are ideal for stiff-sidewall, low-profile performance tires to maximize the contact patch and improve adhesion for rapid direction changes, and precise braking.
- **Soft/High-Profile Tires:** For classic Redlines or standard street tires, you must increase pressure to prevent soft sidewalls from flexing or "rolling over" during hard cornering.
- **Vintage Car Stability:** High tire pressure (often 5+ PSI or more over factory settings) acts as a secondary stabilizer for vintage cars with significant body roll.
- **The "Sweet Spot" Strategy:** Beginners should **err on the high side** for the first run; it is significantly easier to bleed excess air out in the pits than it is to find a pump between runs.

Tire Pressure Strategy

- **Assess Suspension:** If your car has significant body roll, prepare to run higher pressures to compensate.
- **Initial Set-Up:** For soft sidewalls, start with higher-than-normal pressure to prevent the tire from "rolling over" the rim.
- **Check Contact Patch:** Look for "scuffing" on the sidewall after your first run; if the scuffing reaches the edge of the tread, add more air. (See Chalking advice)
- **Adjust Gradually:** Use a reliable tire pressure gauge to bleed off small amounts of air as you get a feel for the car's grip.
- **Safety First:** Ensure your lug nuts and valve caps are tight and tires are free of dry rot before increasing pressure for competition.
- **Hubcaps and trim rings:** Best removed as wheel flexing can result in runaways

The "Sidewall Rollover" Test

- In hard cornering, lateral forces cause the tire to lean. If the pressure is too low, the tire "rolls" off the tread and onto the sidewall, which significantly reduces grip and can cause permanent damage.



Chalking your tires

- Chalking your tires is a classic autocross "hack" used to determine if your tire pressures are effectively utilizing the full tread without "rolling over" onto the vulnerable sidewall.
- Mark the Tire: Use a thick piece of white sidewalk chalk or a tire crayon to draw 3–4 vertical stripes on the edge of each tire. Start about an inch into the tread and extend the mark 2–3 inches down the sidewall.
- Complete a Run: Drive your first autocross run at a competitive pace to generate cornering force.
- Inspect the Wear:
 - Ideal Wear: The chalk should be scrubbed off the tread and just reach the "shoulder" (the corner where tread meets sidewall). Many modern tires have a small triangle or logo (like the Michelin Man) on the shoulder; you typically want the wear to stop right at the tip of that mark.
 - Under-Inflated (Too Much Rollover): If the chalk is scrubbed off deep into the sidewall, you need to increase your pressure to stiffen the tire.
 - Over-Inflated (Not Enough Rollover): If the chalk is still visible on the edge of the tread, you are not using the full contact patch. Decrease your pressure to allow the tire to flex and grip more.

Driver Readiness and Personal Safety

- **Hydration & Nutrition:** Pack a cooler with water, sports drinks, and light snacks.
- **Sun Protection:** Bring sunscreen, a wide-brimmed hat, and polarized sunglasses.
- **Proper Footwear:** Wear closed-toe, laced athletic shoes (No sandals).
- **Driving Attire:** Choose fitted clothing to avoid snagging on the steering wheel or shifters.
- **Helmet:** Bring a Snell-rated helmet if you own one; otherwise, be prepared to use a shared loaner.
- **Weather Gear:** Pack a raincoat or windbreaker—events typically run rain or shine.



The Course Walk: Master the Layout Before You Drive

- The most critical factor in having a successful (and fun) autocross is **mental preparation**. From a distance, a sea of cones in a parking lot looks like chaos; the course walk is your opportunity to translate that mess into a clear path. Your primary goal is to ensure you never feel "lost" when you are behind the wheel and under the pressure of the clock.

The Two-pass approach

- For beginners, the most effective strategy is a **two-pass approach**:
- **The Recognition Pass:** Walk the course once just to learn the directions. Focus on identifying "key" cones—the specific markers that dictate where you must turn or apex.
- **The Strategy Pass:** Once you know the path, walk it again to decide your line. Determine where you will need to brake, where you can accelerate, and how to connect the turns smoothly.
- While experienced drivers may combine these steps or walk sections backward to see a different perspective, taking the extra steps to walk the course twice is the best way to build the confidence needed for a fast first run.

Course Walk Strategy Checklist

- **Identify the "Line":** Don't just walk the middle of the pavement; walk the actual path you intend to drive.
- **Spot the "Key" Cones:** Look for the single cone in a sea of markers that defines the apex of a turn.
- **Look Ahead:** While walking, keep your head up. If you are standing at Turn 1, you should already be looking at the entry to Turn 2.
- **Reference Points:** Find stationary objects outside the course (like a light pole or a tree) to help orient yourself during high-speed maneuvers.
- **Braking Zones:** Mentally mark where you need to finish your braking before turning the steering wheel.
- **The "Backward" Look:** Occasionally turn around and look at a complex section from the exit to better understand the geometry of the entry.

Mental & Visual Discipline

- The most important part of having fun is staying on course. A parking lot full of cones is chaos from afar; the **Course Walk** is where you translate that into a path.
- **Look Ahead (Don't Watch Your Hood):** Do not get distracted by corner workers, light poles, or a flopping rear-view mirror. Once you have committed to a set of cones, your eyes must already be hunting for the next set.
- **The Recognition Pass:** Walk the course once just to ensure you won't get lost "under the gun."
- **The Strategy Pass:** Walk it again to identify the "**Key Cones**" that dictate your line.

The "Target Fixation" Trap

- **The Two-Element Rule:** You should always be looking one or two turns or slaloms ahead of where your car currently is. If you are in Turn 1, your eyes should be scanning for the apex of Turn 2.
- **Windshield vs. Side Windows:** In a tight corner, don't look through the middle of the windshield. Look out the side window toward the next apex. Your hands naturally follow your eyes; if you look at the exit, the car will go to the exit.
- **High Eyes:** Keep your chin up. Looking "through" the turns stretches out the course, making the car feel like it's moving slower and giving you more time to process inputs.
- **Connect the Dots:** During your course walk, identify the "invisible line" that connects the key cones. While driving, look for those "dots" far down the pavement.

Visual Mastery Checklist

- **Scan the Horizon:** Train your eyes to stay at least 50–100 feet ahead of the front bumper.
- **Look Through the Turn:** As you enter a corner, immediately find the exit with your eyes.
- **Peripheral Awareness:** Use your "low" vision to clip the apex cones while your "high" vision hunts for the next gate.
- **The Slalom Sightline:** In a slalom, don't look at the cone you are passing; look at the end of the row to keep your rhythm steady.
- **Head Rotation:** Physically turn your head toward the next maneuver before the car gets there.

The Physics of Smoothness

- "Smooth is Fast" is a rule, not a suggestion, especially for cars with soft sidewalls and spongy suspensions.
- **Avoid the "Big Correction":** Time is lost making "big" steering jerks to get back online. Pro drivers in tight cars with 35-series radials use "tiny," precise corrections; in a vintage car you must ease into turns to keep the chassis settled.
- **Chassis Balance:** Jerky movements upset the body roll. Treat your steering and pedals like dimmer switches, not on/off buttons.
- **Quiet Hands:** Work on finding the perfect arc in your first run so you don't have to make mid-turn steering adjustments.
- **Brace Yourself:** Use your left leg to lock your body into the seat so you don't use the steering wheel to hang on during high-G turns.

Braking & Weight Transfer

- **Brake in a Straight Line:** In almost all cases, you should finish your braking before the turn, not during it. Turning induces body roll; braking induces "dive." Doing both at once overloads the tires.
- **The Dip:** When you brake, the front of the car will dip severely as the front tires take over the work. Use this grip to set your entry speed, then transition smoothly off the pedal as you turn.
- **"Slow In, Fast Out":** It is much easier to add speed in a turn than to remove it. Entering too fast causes "plowing" (understeer) and ruins your exit speed.
- **The String Theory:** As you get back on the gas, weight transfers from the front to the outward rear tire. Balance this carefully; the more you turn, the more you must lift off the gas to keep the nose planted.

Braking Technique Checklist

- **Set the Front End:** Tap the brakes firmly *before* the turn to shift weight to the front wheels ("nosing down").
- **Finish Early:** Aim to be off the heavy brakes before you reach the apex cone.
- **Trail Braking (Advanced):** Slowly "taper off" the brake pressure as you begin to turn in; this keeps the nose planted for better turn-in response.
- **Heel-and-Toe:** If your car is manual, practice downshifting while braking to keep the engine in the "power band" for the exit.
- **Smooth Release:** Never "pop" off the brake pedal; a sudden release will cause the front end to bounce up, losing steering grip exactly when you need it most.

The "Panic" Brake

- If you realize you are going too fast into a corner, straighten the wheels and brake hard. It is better to go "off-course" in a straight line than to spin sideways into a timing light or a curb, and risk loss of control.*



"Starting Line" Checklist

- **Eyes:** Are you looking through the side window toward the next apex?
- **Feet:** Did you finish your braking while the wheels were still straight?
- **Hands:** Are your movements "squeezed" rather than "jerked"?
- **Ears:** Are the tires "hissing" (good) or "shrieking" (too aggressive)?
- **Mind:** Do you know which cone is the "Key Cone" for the next section?

The Language of Cones

- **Standing Cones (Markers)**
- These define the boundaries of the course. If they are in a line, they act as a wall. If it is a single cone, it is usually an apex (the point where you should be closest to the inside of a turn).

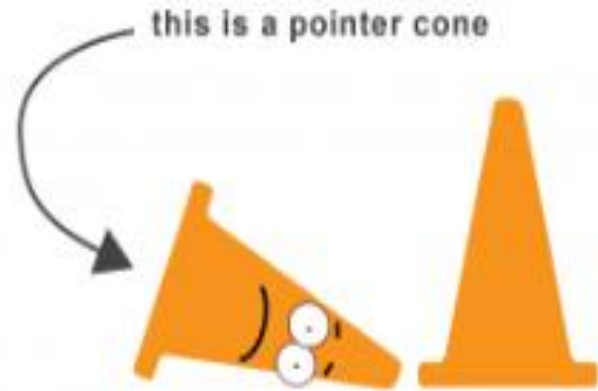


The Language of Cones – Lying Cones (Pointers):

- **Lying Cones (Pointers):** A cone lying on its side is a "pointer." It acts like a directional arrow.
- If a cone is pointing **left**, you must pass to the **left** of the upright cone next to it.
- If it points **right**, you pass to the **right**.



what are pointer cones?



it is the forgotten sideways twin of the standing cone


under-appreciated, but vital to the course

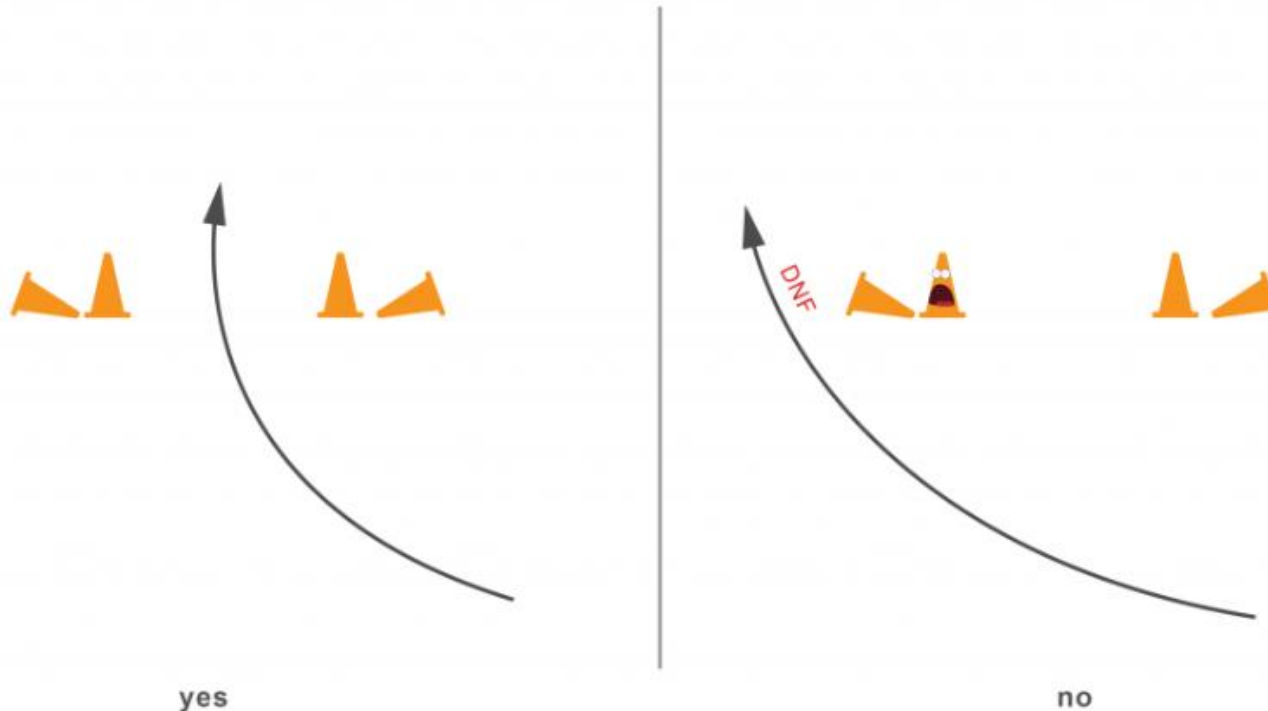


their job is to indicate the direction of travel
(highly expendable, replace them if they are hit)

The Language of Cones – The "Gate"

- The "Gate":
- Two upright cones across from each other create a gate. You must drive between them.

 how to survive a gate

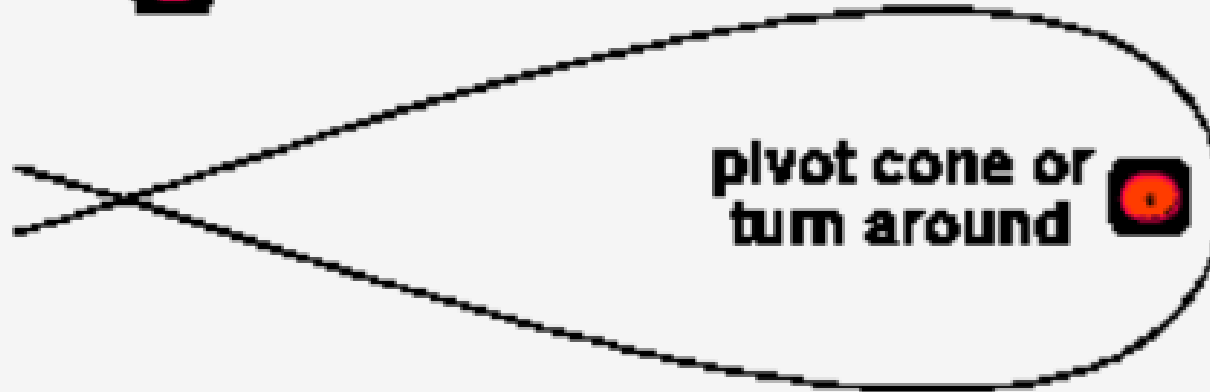


The Language of Cones – Double Standing Cones

Pivots



direction optional
in this scenario



double-cone gate
indicating you will
go back through it

The Language of Cones - The "Box" or "Garage"

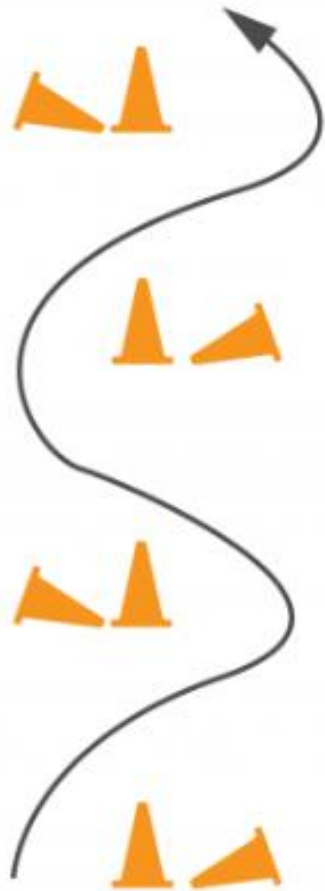
- **The "Box" or "Garage":**
- Some courses use a Stop line box of cones at end.
- We will use a deceleration zone after the finish line.
- Drivers must come to a complete stop at the end
- This will be the shared helmet turn in location

The Language of Cones - Slaloms & Transitions:

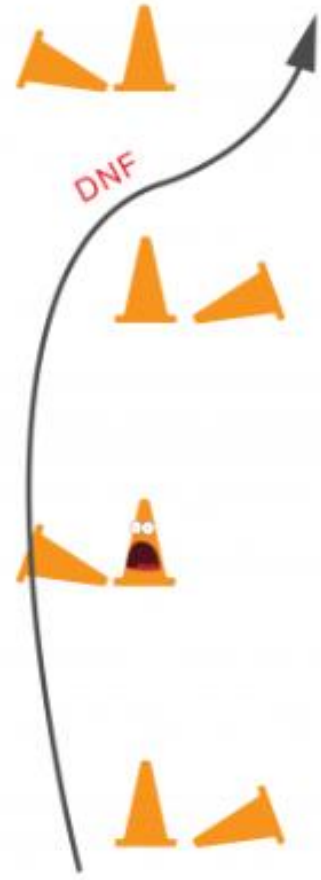
- **One Continuous Movement:** Do not treat a slalom as a series of individual turns. Treat it as a single, flowing maneuver.
- **Entry vs. Exit:** Treat the **entry** of the slalom like the end of a straightaway (brake early, set the nose) and the **exit** like a corner exit (unwind the wheel and roll onto the throttle).
- **Stay Close:** The further you drive away from a slalom cone, the more distance you add to your lap time. Stay tight, stay smooth.



how to survive a slalom



yes



no

The Language of Cones - Cone Recognition Checklist

- **Identify the Apex:** During your walk, find the "key" upright cone in every corner. This is where your tire should almost brush the base.
- **Follow the Pointers:** Always look at the ground. Pointers are your best friend when the course gets "busy" or confusing.
- **Scan the Slalom:** In a line of cones (slalom), look for the first pointer to know which side to start on.
- **Respect the Boxes:** Note where the "Timing Lights" are at the start and finish; knocking these over is expensive and ends your run!
- **Verify the Stop Box:** Make sure you know exactly where the finish "garage" is so you don't blow past it at full speed.

The Language of Cones - The "2-Second" Rule

- **Remember:** Knocking a cone over or bumping it completely out of its chalked box results in a 2-second penalty. If you just nudge it and it stays in the box, you're safe!

Event Structure

- We have maximized the use of the parking lot by utilizing on street parking on **Manzano Way** *for all Vehicles*. The **Parking lot entry lanes** will be used for two staging lanes as well as a one lane course exit. We will not allow cars to enter the lot except via the staging lanes. When you come off the course you have a choice of lining up for your next run in the “inactive” staging lane or parking on the street.
- We ask that spectators use the opposite side of the street to park and reserve the side closest to the parking lot entry for competitors, so that they can unload their excess gear and prep for their runs. Please recognize that a stack of gear along side an open space means that that space is occupied and find your own further on down the road.

Event Structure

- **Drivers Meeting and Work/Run Groups:**
 - We will have a Safety Meeting to remind everyone of their responsibilities to your fellow competitors, yourself, your car, and the facility.
 - Drivers will be broken up into two run groups.
- **Everyone works during one session and drive in another.**
- ***Multiple Driver Cars***
 - We will accommodate cars with multiple drivers by moving them up in the run group as soon as the additional drivers are ready. The goal is to spread out the runs so that we are not doing successive runs in the same car at the end of the session.

Event Structure

- **Working Requirements:**

- If you are in the opposite group, you will be assigned to work at safety stations (e.g., chasing cones), start or finish lines, staging lanes, helmet facilitation or may be assigned as a substitute to take over where needed.

- **Safety:**

- Always come to a complete stop in the designated stop box at the finish. Obey all traffic rules in and out of the parking lot and on Manzano Way. If asked about street parking know that we have cleared it in advance with the Marble Falls Police Dept, and the High School Resource Officer. They know we are coming what we are doing and will likely be watching!

Ride Along Rules for Passengers

- **Ride Timing:** Ride-Alongs must come *after* you have completed your own competition runs. Riding before can be viewed as gaining a performance advantage by familiarizing yourself with the course.
- **Safety Gear:** Passengers must wear an approved, properly fitted helmet
- **Eligibility:** Passengers must be at least 12 years old
- **Waivers:** Passengers must sign all required [participant waivers](#).
- **Ride-Along Restrictions:** Only one passenger is allowed at a time regardless of number of seats. Hands must remain inside the car.
- **Driver Requirements:** All drivers must have a valid driver's license, and all cars must have completed a tech inspection.
- **Restrictions:** Minor s with a restricted license must have a parent with them on course.

Ride Along Rules for those planning to compete and help others

- **Driving Instructors:**

- Ride-Alongs are encouraged. If the instructor is a competitor, **they must complete their runs prior to the Ride-Along.** Notify Event Master and Instructor will be moved up in the run groups to facilitate Instruction runs.

Site Rules:

- It is VTR policy that if a convention guest is found to be in an intoxicated state from alcohol or drugs at any event that involves the operation of a motorized vehicle (rally, autocross, funkhana, etc.), then that person will be ineligible for any form of award from the convention, including car shows.
- The Autocross will be held on the property of the Marble Falls High School. Marble Falls ISD (MFISD) enforces strict, zero-tolerance policies regarding alcohol and guns, prohibiting them on all school grounds, at school-sponsored events, and in vehicles. Possession can result in mandatory, long-term expulsion, severe disciplinary action, and potential felony charges.

Event Management Checklist - VTR Rules Summary

- **Driver Entry Limits:** Enter only once per car.
- **Multi-Driver Cars:** Ensure car numbers/IDs clearly distinguish which driver is currently competing.
- **Passenger Restrictions:**
 - Allowed during trophy runs.
 - Competitors cannot be passengers until all their own runs are finished.
- **Multi-Vehicle Entries:**
 - Trophy eligibility applies only to the **first** car driven.
 - Complete all trophy runs before switching vehicles.
 - Non-trophy runs may be required to occur after all other competitors.
- **Ladies Classes:**
 - Optional entry into either Ladies or Open classes.
 - Notify Timing and Scoring of the choice before the first run.
 - Ensure car identification reflects the selected class.

Event Management Checklist -- VTR Rules Summary

- **Conflict of Interest:** Ensure no competitor has pre-driven the course on wheels; officials must recuse themselves from biased decisions.
- **Course Design:** Design for safety and fairness, specifically accommodating **older, fragile British cars**.
- **Course Map:** Post a map in a clearly accessible location.
- **Run Order:** Complete all first runs before moving to second runs (minimum **2 runs** total); heats are permitted for scheduling.
- **Reruns:** Grant only for timing failure, course debris, or downed pylons (discretion of Timing Chief); **no reruns** for mechanical failure or existing DNFs.
- **Pylon Penalties:** Apply a **2-second penalty** if a pylon is knocked over or moved entirely out of its marked box.
- **DNF (Did Not Finish):** Score for uncorrected course deviations; striking course limit markers does not count as a deviation.

VTR Autocross Grouping & Classing Rules

- Group Assignment:
- Cars are primarily grouped by engine type and then categorized by modification level:
 - S (Slightly)
 - M (Moderately)
 - X (Extremely)

VTR Autocross Grouping & Classing Rules

- **Standard Vehicle Groups:**
- **Group T:** TR2, TR3, TR4, and TR4a.
- **Group S:** TR-250, TR6, GT6, Vitesse, and T2000/2500.
- **Group M:** TR7 and Dolomite.
- **Group V:** TR8 and Stag.
- **Group F:** Spitfire and Herald.
- **Group H:** Pre-TR models, TR10, Mayflower, Historic vehicles.

- **Ladies Classes:** These use the same groups and modification levels as the open classes, designated by adding an "L" prefix to the group code (e.g., **LTS, LSS, LMS**).

VTR Autocross Grouping & Classing Rules

- **Unlisted & Non-Triumph Vehicles:**
- Any car not specifically listed must be grouped according to its **engine design**.
- Non-Triumph powered or bodied cars may run only at the **discretion of the Event Chairman** or VTR coordinator and are eligible for awards only by their approval.

VTR Autocross Grouping & Classing Rules- TIRES

- **Tires:**
 - **Street:** 3+ continuous grooves, within 10mm of factory width, and UTQG >**300**.
 - **Wider:** Over 10mm wider than factory or UTQG >**150**.
 - **Race:** All others (slicks/competition tires).
- **Factory Baseline Tire/Wheel Sizes:**
 - **TR2 / TR3 / TR4:** 4.5x15 wheel | 165 tire
 - **TR250 / TR6:** 5.5x15 wheel | 185 tire
 - **TR7 / TR8:** 5.5x13 wheel | 185 tire
 - **Spitfire / Herald:** 5x13 wheel | 155 tire
 - **Vitesse / GT6:** 4.5x13 wheel | 155 tire
 - **Stag:** 5x15 (or 5.5x14) wheel | 185 tire