



Motorsports Glossary of Terms

AERO

Commonly used abbreviation when referring to the science of aerodynamics.

AERODYNAMICS

The science of understanding different forces acting on a moving element. The application to racing is credited with much of the sport's recent progress as teams learn more about drag, air turbulence, and downforce.

AIR WRENCH (AIR GUN OR IMPACT GUN)

A tool that uses compressed air to turn (off or on) wheel nuts. A crew member proficient with the air wrench can save a team valuable seconds on a pit stop.

ADDING SPOILER

A term used to describe changing the angle of a spoiler or wing on a race car, which affects downforce and gives more grip on the race track.

ANGLE OF ATTACK

The angle of an aerodynamic wing. The angle varies at different tracks to produce optimal downforce and minimize drag.

ANTIROLL BAR

A bar linking suspension parts which can be adjusted to alter the handling characteristics and can affect tire wear and varying fuel loads.

APEX

The point in a corner where a car is closest to the inside edge of the track. Drivers try to "hit" the apex to take the straightest line and maintain maximum speed. See also early apex and late apex.

APRON

The paved (and usually flat) portion of a racetrack that separates the racing surface from the infield. Generally a concrete wall or steel guardrail separates the apron from the infield.

ARMCO

Steel material forming barriers designed to prevent vehicles from leaving race tracks similar to highway applications.

BACKMARKER

A car at or near the back of the field.

BANKING

The sloping of the track surface, measured in degrees from horizontal.

BALACLAVA

Fire retardant headgear worn under helmets.

BITE

The amount of traction that a race car has at the rear wheels. Adjustments can be made to the car that puts more "bite" into the rear tires by adding weight or wedge to the car.

BLACK BOX

An electrical system which controls most engine functions. More technically referred to as the Engine Electronic Controls (ECC), the Engine Control Unit (ECU) or the Engine Management System (EMS).

BLISTER

Excessive heat can make a tire literally blister and shed rubber. Can be detected by tire vibrations.

BLOCKING

Movement on the track to prevent drivers from passing. Blocking is accepted if a car is defending position in the running order, and generally limited to "one move," but considered unsportsmanlike if holding up more competitive cars.

BLOW UP

Engine failure that is irreparable.

BOOST

The amount of pressure generated by a turbocharger or supercharger as it forces the air/fuel mixture into a forced induction engine.

BRICKYARD

Name given to the legendary Indianapolis Motor Speedway (IMS), which was originally paved in bricks. The track hosts the Indianapolis 500, NASCAR's Brickyard 400, MotoGP, and other special events.

CAMBER

The angle that tires are tilted inward or outward from a vertical straight line. If the top of the tire is tilted inward, it is called negative camber. If tilted outward, it is called positive camber.

CAMSHAFT

A rotating shaft in the engine that opens and closes the engine's intake and exhaust valves.

CARBURETION DAY

The final practice before the Indianapolis 500, traditionally held on the Thursday before the race; changed to Friday before the race in 2007.

CAUTION

A period in a race when the field is required to slow behind the pace car, and passing is not allowed. Cautions can result from an accident, weather, debris, oil, or other trouble on the track.

CENTER OF PRESSURE

The place on the underside of a race car where the greatest amount of airflow pressure is located. This measurement is critical to setting front to rear balance, especially on superspeedways.

CHASSIS

The basic structure of a race car to which all other components are attached. Indy cars have carbon-fiber monocoque "tubs" while a stock car has a steel tube frame chassis.

CHECKERED FLAG

The black and white checkerboard style flag signifies the end of a race.

CHICANE

An "S" like track configuration generally designed to slow cars. Also referred to as "esses" or a "switchback."

CHUNKING

When a tire sheds pieces of rubber.

CIRCUIT

Any race track. Also refers to the entire slate of races on a season schedule.

CIRCULATING

Driving around a track with a damaged and/or slow car to either get back to the pits or to accumulate laps, consequently points and prize money.

CLEAN AIR

Air without turbulence created in the wake of other race cars. Clean air is found at the very front of the field.

CLIPPING

Minor contact between race cars. Also often refers to hitting precisely, or "clipping," the apex of a turn.

CLOSED-WHEEL CARS

Where suspension, wheels and tires are mostly covered by the body. Production-based race vehicles such as NASCAR stock cars are examples of closed-wheel cars as opposed to open-wheel "formula" cars.

COCKPIT

The area where the driver sits in a race car.

COLD PITS

There is no racing activity on the track and the pits are open to people other than team members and racing officials.

COMBINATIONS

Combinations of engine, gearing, suspension, aerodynamic parts, and wheel and tire settings which teams forecast will work under varying conditions and at various tracks. These combinations (also known as set-ups) are recorded and often used as baseline when teams arrive at a track.

COMPOUND

The rubber composition for tires. In some series, teams can choose their tire compound based on the track and weather conditions. A softer compound tire provides better traction but wears out much faster than a harder compound tire, which lasts longer but doesn't provide as much grip.

CONTACT PATCH

The portion of the tire that makes contact with the racing surface. Various chassis and tire adjustments can be made to maximize the contact patch.

CORNER WORKER

Volunteers who staff corners to warn drivers of any dangerous situations and to assist in that specific area.

CRANKSHAFT

The rotating shaft within the engine that is turned by the up-and-down motion of the pistons. The crankshaft transfer power to the flywheel, and in turn to the transmission. The crankshaft is housed within the crankcase, which is part of the engine.

CROSS-THREAD

Stripping of the wheel stud threads when crew members erroneously put on lug nuts. This can be more devastating in open wheel racing as each wheel has only one center nut/thread combination which, if damaged, necessitates a longer pit stop or more severe consequences will occur.

DNF

Did not finish.

DNS

Did not start.

DNQ

Did not qualify.

DIALING IN

This refers to the driver and crew making setup adjustments to achieve the car's optimum handling characteristics.

DIAPER

A blanket made from ballistic and absorbent material that surrounds part of the engine and serves as a containment device during accidents and engine malfunctions.

DIRT TRACKING

Driving hard into a corner on a paved track causing the rear end to swing out wide as if on a dirt surface.

DIRTY AIR

The turbulence created in the wake of other race cars.

DISPLACEMENT

In an engine, the total volume of air-fuel mixture an engine theoretically is capable of drawing into all cylinders during one operating cycle.

DOWNFORCE

The aerodynamic pressure holding the car on the track. High-speed movement of air underneath the car creates a vacuum, while the wings on the car force it to stay on the ground, acting in a manner opposite to the wings on a jet airplane.

DRAFTING

A driver follows closely the car ahead to break wind resistance to gain momentum and save fuel. Also "tow."

DRAG

Turbulent air that causes the race car to slow down.

DRIVERS' CHAMPIONSHIP

Points are awarded at each race based on finishing position. The driver accumulating the most points by the end of the season wins the drivers' championship. A similar award system is used by most major series for a manufacturers' championship.

DRY WEIGHT

A car's weight without any liquids such as fuel and oil.

DROP THE HAMMER

Means a driver is full throttle.

DRY LINE

A part of the race track which develops because of more frequent use after being wet from the rain.

DYNAMOMETER (DYNO)

A machine on which a vehicle or engine may be run, simulating actual driving conditions for horsepower, torque, and diagnostic purposes.

EEC

The Electronic Engine Control unit referred to as the Black Box.

ECU

Engine Control Unit or Black Box.

EARLY APEX

A driver turns into a corner early.

ECONOMY RUN

Driving slower to conserve fuel. Some cars can actually manipulate air/fuel levels (less fuel, more air) to run "lean" and conserve fuel.

END PLATE

The vertical end piece of a wing.

ENGINE

A device that burns fuel to produce mechanical power; to convert heat energy into mechanical energy.

ENGINE BLOCK

The basic framework of an engine to which all other parts and assemblies are installed or attached.

ENGINE MANAGEMENT SYSTEM

Another term for the Black Box.

F1

Abbreviation for Formula One.

FIA

Federation Internationale de l'Automobile, which is the governing body for most auto racing around the world.

FILL THE MIRRORS

One driver is pressuring another driver so that the rear-view mirror is filled with their pursuer.

FIRE SUIT

Fire-retardant apparel required for drivers as well as crew members and everyone else in the pits during a race.

FLAGMAN

The person standing at or above the Start/Finish Line who signals all the drivers with a series of flags.

FLAT SPOT

When drivers lock up brakes, one area of their tires get overheated causing flat spots to develop. Flat spots can lead to vibrations and may require a pit stop.

FLAT-OUT

Refers to using 100% of the race car and not holding back (i.e. as in running flat-out).

FRESH RUBBER

A new set of tires that have never been run on.

FRONT WHEEL DRIVE (FWD)

A vehicle having its drive wheels located on the front axle.

FUEL

1. Any combustible liquid, such as gasoline, that can be used to fuel an engine. 2. As slang, any fuel other than gasoline that is used to fuel an engine.

FUEL CELL

A special container that holds the fuel in race cars and provides extra protection upon impact.

FUEL FILTER

A device located in the fuel line to remove impurities from the fuel before it enters the carburetor or injector system.

FUEL INJECTION

A system that sprays fuel under pressure into the intake manifold or directly into the cylinder intake ports, allowing more precise control of the air/fuel mixture for improved performance, fuel economy, and reduced exhaust emissions.

FUEL INJECTOR

A mechanical or electro-mechanical device that delivers fuel into an engine.

FUEL PUMP

A mechanical or electrical device used to move fuel from the fuel cell to the carburetor or injectors.

FUEL STARVATION

Fuel starvation can occur in sweeping turns and has a similar effect to lifting in the middle of the turn, sometimes with over 1/2 tank of fuel! Additionally, starvation causes a lean condition in the engine leading to possible detonation and expensive engine damage.

FUEL SYSTEM

The system that delivers fuel to the cylinders, consisting of a fuel cell and lines, gauge, fuel pump, carburetor or injectors, and intake manifold.

GASOLINE ALLEY

The garage area at Indianapolis Motor Speedway.

GAS CAN

Large steel can used to fill stock cars during a pit stop.

GAS CATCHER

The person on the pit crew that holds a small can to catch the overflow of fuel as the fuel cell is filled on a pit stop.

GAS MAN

The person on a pit crew with the job of filling the car with fuel from either a can (NASCAR venue) or from a filler hose (IndyCar or F1).

GAUGE

1. An instrument used for measuring, such as for compression. 2. A dashboard-mounted component used for visual indication of engine and system conditions, such as oil pressure.

GEAR SYNCROS

A device that matches the speed of the gear to that of the drive shaft.

GOVERNOR (REV LIMITER)

1. A device that controls another device, usually on the basis of speed or rpm.

GRAND PRIX

A French term originally meaning grand prize, is now widely used to refer to a race.

GREEN TRACK

A track that has little or no rubber on it. A condition that provides little or no traction for a race car.

GRIP

How well the tires maintain traction through contact with the racing surface.

GROUND EFFECTS

Aerodynamically designed parts are fitted to create additional downforce.

GROOVE/LINE

Term for the fastest or most efficient way around the racetrack. Often most drivers will use the same groove around the track, and that portion of the track will sometimes appear darker in color than the rest of the track due to the building of tire rubber.

GURNEY FLAP

A vertical extension to the back edge of a wing invented by racing legend Dan Gurney to generate more downforce, especially at higher angles of attack. This device is usually made of metal, aluminum or carbon fiber and is also known as a wickerbill.

GRIP

Tire traction (mechanical) on the track.

GROOVE

The ideal path around the racing surface.

HAIRPIN

A 180 degree turn which exits in the opposite direction than a driver enters.

HAMMER DOWN

The driver has the pedal to the metal or has "dropped the hammer" - full throttle.

HANDLING

A race car's on-track performance, determined by factors such as tire and suspension setup, and other aerodynamic issues.

HANS Device

The **Head And Neck Safety** device, developed by race car driver Jim Downing and Dr. Robert Hubbard, a biomechanical engineering professor at Michigan State University. The brace fits around the shoulders and attaches to a driver's helmet, limiting neck movement during a crash to help minimize severe head injuries.

HAPPY HOUR

The final hour of practice during which faster laps often occur if done late in the day when the track is cooler.

HEADSOCK

A fire resistant head mask or balaclava.

HOLE SHOT

A drag racing term for beating an opponent off the starting line and winning a race despite having a slower elapsed time.

HOLDING UP TRAFFIC

When a slower race car causes cars running faster on the track to slow and does not heed the "move over flag" of the race officials.

HOOKED UP

A car that is performing well because everything is working well together is "hooked up".

HORSEPOWER

The estimated power needed to lift 33,000 lbs. one foot per minute roughly equated with a horse's strength.

HOT LAP

A car(s) that is running at or near racing speed on the track.

HOT PITS

Designated time when only crew members and racing officials are allowed into the pits for safety reasons.

IDLE

The engine speed with no load and the accelerator pedal fully released.

IGNITION

The firing of a spark plug to ignite the air/fuel mixture in the combustion.

IMS

The Indianapolis Motor Speedway. Also referred to as the Brickyard.

IMSA

The International Motor Sports Association. The North American road racing sanctioning body featuring prototype and GT sports car series.

IMPACT GUN

The machine used to take wheel lugnuts off and on. Also an air wrench or air gun.

INFIELD

The enclosed portion of a track which includes team garages on most oval tracks. During race weekends, this area is usually filled with large transporters, merchandise trailers, and driver and fan motorhomes.

INSIDE GROOVE OR LINE

On an oval track, this is the racing line which is usually separated from the infield by a distinctly flat surface called an apron. On road courses, the inside groove refers to the line closest to the curbs or walls forming the inner portion of turns.

INTERMEDIATE TRACK

A track measuring 1 mile or more, but less than 2 miles around.

IN THE FENCE

A phrase used to describe the wreck of a race car involving one or more cars.

LAG

Turbo lag. The time it takes a turbocharger to "boost" an engine's power from the moment the driver pushes the throttle.

LAP

One time around a track. Also used as a verb when a driver passes a car and is a full lap ahead of (or has lapped) that opponent. A driver "laps the field" by lapping every other car in the race.

LAPPED CAR

Any race car that is running one or more laps down to the leader of the race.

LAP(S) DOWN

The number of laps a car is running behind the leader of the race. It can range from only one lap to several hundred.

LATE APEX

Turning into a corner late and hitting the apex at the latest point.

LEAD LAP

The race leader's lap count. If the leader laps you for the first time, you are no longer on the lead lap.

LEAN

A decreased air/fuel mixture, which reduces the amount of fuel used and also restricts available horsepower. High tech race cars (e.g. Indy cars and Formula One cars) have engine management systems which can electronically adjust air/fuel mixtures.

LET GO

A term used for parts of a car that fail.

LIFT

1. To raise or lift your foot of the gas pedal. 2. An aerodynamic term used when a part of the car gets light.

LOCKED UP

When too much pressure is put on the brake pedal and it prevents the wheels from turning.

LONG PEDAL

When the throttle pedal has too much travel and also used to describe a brake pedal when the brakes wear out because the driver has to push the pedal harder and further to slow down.

LOOKS TO PASS

A driver ponders a pass. The driver will actually make a move, look at the possible passing area, and make a decision to go or not.

LOOSE

When the front has more grip than the rear and then the rear loses traction. Also known as oversteer.

LOW DRAG SETUP

Adjusting a car's aerodynamic devices to minimize drag, which also reduces downforce. This setup achieves better performance on straightaways but reduces cornering capability.

LOW LINE

See "low groove or line."

MANIFOLD

1. A conduit-like device used to channel the air/fuel mixture into an engine (Intake Manifold). 2. A conduit-like device used to duct the exhaust gas out of an engine (Exhaust Manifold).

MARBLES

Small pieces of tire rubber off the racing tires that build up on the race track.

METHANOL

Technically pure methyl alcohol produced by synthesis that is used as fuel.

NEUTRAL

Term used to describe the handling of the car when it is neither loose nor pushing.

NOMEX

Trade name of DuPont that is a fire-resistant fabric used in the manufacturing of protective clothing.

OCTANE (Gas Grade)

Octane ratings measure a gasoline's ability to resist engine knock, a rattling or pinging sound that results from premature ignition of the compressed fuel-air mixture in one or more cylinders.

OFF LINE

Driving off the ideal racing line. Drivers will go off line to attempt a pass or to move out of the way of faster cars.

ON THE BUBBLE

After the field is full but the time allocated for qualifying hasn't ended, the slowest qualifier, the one who could be bumped from the field, is then "on the bubble."

OPEN WHEEL

Race cars that have their wheels exposed. Includes IndyCars, Formula One, Sprint cars, Midgets, and some go karts.

OUT BRAKE

A driver applying the brakes later and deeper into a corner to execute a pass.

OUTSIDE GROOVE

The high racing line. Sometimes a car will handle and perform better on the outside/inside line and a driver opts not to use the optimum groove.

OVAL TRACK

An oval-shaped track such as Indianapolis Motor Speedway, Daytona International Speedway and many others around the country.

OVERSTEER

A condition when the front of a car has more grip than the rear. This is the same as a car being "loose."

PACE CAR

The car which leads the field to set the pace before starts, at restarts, and after cautions.

PADDOCK AREA

The enclosed portion (or infield) of a race track.

PARADE LAP(S)

The warm-up lap(s) before a race. Drivers use these laps to warm up their engines and often zig-zag to warm up tires.

PHYSICAL CIRCUIT

Usually refers to race tracks which require a lot of turning and hence, greater physical strength.

PICK UP

Debris builds up on the tires from rubber bits and small stones on the track.

PISTON

1. An engine part that reciprocates in the cylinder and transfers the force of the expanding gases via the piston pin and connecting rod to the crankshaft. 2. A round, caliper component in a disc brake that is moved outward by fluid pressure to press the pads against each rotor face. 3. An aluminum or sintered-iron component of a drum brake inside a wheel cylinder that supports the cylinder cup.

PIT ROW

The area designated for teams to work on the cars and make adjustments during race events. Each team is allotted one pit area (or space) per car. Drivers enter the pits so crews can refuel, change tires and make any other repairs or adjustments. Simply called the pits most often.

PIT BOARD

A board used by crews to communicate with drivers; such as lap times, lap until pit and other various information. The board is used along with team radios to keep in constant communication.

PIT LIZARD

Nickname for a racing groupie.

PIT STOP

When drivers stop in their pit so their crews can change tires, refuel, and make repairs or other adjustments.

PITS

Short for pit row or a dejected driver. Also see hot pits for cold pits.

POINTS RACE

The races where points are awarded to win a Drivers' or Manufacturers' Championship at the end of the season.

POLE POSITION

The driver qualifying fastest is awarded the first starting position. This means the driver will start from either the inside (relative to the first turn) of the first row, or sometimes the driver earning the pole position has choice.

POP-OFF VALVE

If the engine is turbocharged, this valve is connected to the plenum exiting the turbocharger.

PORTING

To enlarge the intake and exhaust passages.

POWER PLANT

Commonly used term for engines.

POWERTRAIN

All of the vehicles components that contribute to the generation, transmission, and distribution of drive torque to the wheels.

PROVISIONAL STARTING SPOT

Special performance-based exemptions for drivers who do not initially qualify for a race. A driver awarded a provisional spot must start at the back of the starting grid.

PUSH

The front end of a car has less grip than the rear. This condition makes a car harder to turn into a corner. Commonly known as understeer.

PUSH TO PASS

A button on the steering wheel that electronically controls the fuel/air mixture to provide extra horsepower for a predetermined amount of time.

PSI

An acronym for pounds per square inch. An English measure for pressure or stress.

QUALIFIERS

Softer compound tires designed for qualifying because they provide excellent traction, but usually only for a short amount of time.

QUALIFY

Designated sessions where drivers compete with their lap times to qualify for (or enter) a race based on a predetermined number of spots available.

RACE RUBBER

Tires used for the race as opposed to practice or qualifying tires.

RACER'S TAPE

Heavy duty duct tape used to temporarily repair body parts which might hinder aerodynamic features and decrease performance.

RADIATOR

A heat exchanger used to remove heat from the coolant in the cooling system containing a vertical- or horizontal-finned tubing section connected between two tanks.

RAIN TIRES

Specially designed tires with tread for wet-weather conditions.

REAR WHEEL DRIVE (RWD)

A drivetrain layout that provides power to the rear wheels only.

REDLINE

The highest rpm that it is safe to run the engine to achieve optimum power.

RESTRICTOR PLATE

A stainless steel plate used between the carburetor and the intake manifold to limit the amount of fuel and air reaching the engine thus reducing the speeds.

They are used on certain high speed NASCAR tracks like Daytona International Speedway and Talladega Speedway.

REV LIMITER

Electronic/computer device in the engine controls that causes a controlled engine misfire if engine revolutions per minute (rpm) exceed the limit set. The rev limited is used primarily to control speeds, thereby increasing safety and controlling costs.

RICH CONDITION

An air/fuel mixture having insufficient air or excessive fuel.

RIDE HEIGHT

The distance from the bottom of the chassis to the ground.

ROAD COURSE

A race track with left and right hand turns. Generally refers to permanent, purpose-built racing facilities. Can also refer to temporary street courses built on all or partial city streets.

ROLL BAR

Large, sturdy bars designed to protect a driver's head if the car rolls over. Most production and race cars use anti-roll (or sway) bars as part of the suspension to prevent the excessive rolling in corners.

ROLLING START

The race starts after the pace car leaves the track and the starter waves the green flag vs. a standing start where the cars start from a standstill.

RPM – Revolutions Per Minute

1. The number of times a member, such as a shaft, makes a complete revolution in one minute. 2. The rate of speed of a rotating part, such as a crankshaft.

ROOSTER TAIL

The spray trailing cars in wet conditions similar to the effect boats create across water.

RUBBING

Racing announcers use this to describe cars that make contact but don't crash. Also called "pushing and shoving."

SAFER BARRIER

The **Steel and Foam Energy Reduction (SAFER) Barrier**, an energy-absorbing barrier system attached to the outside retaining walls in each of the four turns of the Indianapolis Motor Speedway and other racetracks, mostly ovals. It is constructed in 20-foot modules, each one consisting of four rectangular steel tubes, welded together, to form a unified element. The modules are connected with four internal steel splices. Bundles of 2-inch thick sheets of extruded, closed-cell polystyrene are placed between the concrete wall and the steel tubing modules every 10 feet. Six or seven sheets of polystyrene are used in each bundle, depending on the location on the module.

SCUFFS (SCRUBBED TIRES)

Tires that have been run a few laps in practice to put a heat cycle in them, which generally helps them last longer in the race.

SENSOR

A device that converts physical quantities such as pressure, airflow, temperature and velocity into electrical signals

SETUP

The combination of settings for a car's engine, aerodynamic features and tires/wheels. Teams make continual adjustments to a car's setup during pit stops based on historical and electronic data and driver input.

SETUP SHEETS

Documents that record setups from different tracks under varying weather conditions. Teams use this information to adjust setups every time they are at a track.

SHAKEDOWN

First test with a brand-new car or engine.

SHIFT POINTS

The best engine r.p.m. at which to shift gears.

SHOOT OUT

Two or more drivers race to the end for victory.

SHORT TRACK

Racetracks that are 1 mile or less in length.

SHUT DOWN

Turning a car off to avoid mechanical damage. Drivers shut down to prevent a mechanical problem becoming more severe with expensive consequences. Drag racers often shut their cars down when they get out of control.

SIDE POD

Bodywork on the side of the race car covering the radiators and engine exhaust. Aids in engine cooling, care aerodynamics and driver protection in the event of a side impact.

SPRING RUBBER

A circular rubber device added to the front springs of a stock car to increase the stiffness of the spring ratio and make the car handle better. Often these are added or removed during pit stops.

SLICKS

Tires with no tread designed for optimum grip in dry weather conditions.

SLICK TRACK

A track with an unusual amount of oil or other conditions making it difficult to drive.

SLIP STREAM

The cavity of low-pressure created by a moving object. In racing, drivers use this slip stream to draft another vehicle.

SPARK PLUG

An ignition component threaded into the cylinder head that contains two electrodes extending into the cylinder that form a gap across which high-voltage electricity arcs to ignite the compressed air-fuel mixture.

STAGGER

The process of measuring the circumference of the tires and selecting the larger tire on the outside to improve the car's ability to turn in the corners.

STICKERS

Brand-new tires with the manufacturer's label (or sticker) still on the surface. Teams generally use sticker tires during qualifying, then use scrubbed tires in a race. See scuffs or scrubbed tires.

STOP-AND-GO PENALTY

A penalty which requires a driver to stop at their team's pit for a timed penalty before reentering the race. This penalty can be assessed for anything from speeding in the pits to contact with an opponent.

SUPERSPEEDWAY

An oval track over two miles in length.

SUSPENSION

The system that supports the weight of the vehicle and provides optimum performance.

SUSPENSION & WHEEL ENERGY MANAGEMENT SYSTEM (SWEMS)

Wheel-restraint system using multiple restraints attached at multiple points to a car's chassis and suspension designed to minimize the possibilities of wheel assemblies becoming detached during high-speed accidents. The restraints are made of FIA-approved Zylon. This materials, with its high-tensile properties and its wound construction (opposed to woven), has a breaking strength of 5 tons.

SWEEPER

A large sweeping corner on a road or street course.

STREET COURSE

A race track laid out at least partly on city streets, such as for the Grand Prix of St. Petersburg, FL and downtown Long Beach, CA.

TAPED OFF

Usually refers to applying tape to the radiator and/or brake duct opening in full bodied cars.

TEAR OFFS

Transparent plastic strips applied to helmet visors of drivers of open wheel cars or the windshield of a stock car. As these strips accumulate debris, a driver or pit crew member can tear a dirty strip off for a clear view.

TECH

Short for tech (or technical) inspection. Each car is submitted to tech inspection so sanctioning body officials can confirm all chassis and engine parts meet series' regulations. A "teched" car will get a sticker mounted onto the chassis identifying that it's approved to compete.

TELEMETRY

Highly sophisticated electronics which transmit performance data (engine, tire, steering and throttle) back to a team's electronic equipment. Enhances driver safety by allowing the team to notice any developing mechanical problem the driver cannot foresee.

THROTTLE

The gas/accelerator pedal.

TIRE COMPOUND

A formula based on rubber polymers, oils, carbon blacks and curatives used to create a tire.

TOP END POWER

The amount of power available at the highest revs, at high speeds, in its highest gear.

TORQUE

The measure of a force-producing tension and rotation around an axis.

TRANSMISSION (Gearbox)

A gearing device of a vehicle that provides variable ratios between the engine output and the differential input.

TUB

The chassis or monocoque of a race car.

TURBO OR TURBOCHARGER

A device which pressurizes exhaust air, pumps it into the engine and "boosts" a car's performance. Essentially the condensed air increases the air/fuel mixture to create more power. A key advantage of turbochargers is that they offer a considerable increase in engine power with only a slight increase in weight.

TURBO LAG

The short delay in engine response when a driver punches the throttle in a turbocharged vehicle.

TURBULENCE

Rough air encountered by race cars moving on a race track.

UNDERSTEER

When a car has more traction (or grip) in the rear than in the front and is difficult to steer into the corner.

VALVE COVER

The valve cover serves as the covering of the valve trains. This can be removed to adjust the valves.

VALVETRAIN

The collection of parts that make the valves operate. The valve train includes the camshaft(s), related drive components, the various parts that convert camshaft's rotary motion into reciprocating motion, and the valves and their associated parts.

VORTEX

Vapor trails produced by moisture off the leading rear edge of the car.

WARM-UP LAP

The lap before a race starts. Drivers use this parade lap to warm up their engines and tires.

WEAVING

Zig zagging across the track to warm up and clean off tires, or to confuse an opponent while attempting a pass.

WEIGHT JACKER

A hydraulic cylinder the driver uses to adjust car handling from the cockpit while racing. The cylinder compresses or extends springs, which transfer the car's weight distribution from one side of the car to the other, thereby adjusting the car's handling to the driver's liking.

WETS

Tires with a tread design that performs better in the rain.

WEDGE

The process of adding weight to one side of the rear of a race car. It is done by shifting the amount of weight applied to one of the rear wheels by tightening the pressure on the rear spring.

WHEEL HOP

An undesirable suspension characteristic in which one or more wheels or move up and down so violently that it actually leaves the ground. Wheel hop can be caused by many problems, including excessive unsprung weight, insufficient shock damping, or poor torsional axle control.

WICKER BILL

A long, narrow, removable spoiler made of steel, aluminum or carbon fiber on the trailing edge of the front and rear wings which varies in height, creating downforce. Teams will use different size wicker bills to create more or less downforce. The larger (higher) the wicker bill, the greater the downforce, and vice versa for smaller wicker bills.

WINDSCREEN

1. A transparent fiberglass surface on the front of a car designed to aid air flow and deflect turbulent air from the driver. 2. The windshield of a stock car.

WINGS

Aerodynamic surfaces mounted to a race car to create downforce.

ZIG ZAG

To sharply move back-and-forth on the track. Drivers often zig zag on warm-up laps to heat up their tires.