

# DRAGSTER GLOSSARY

## **AERODYNAMICS**

The properties and forces produced as an object moves through the air or a stream of air moves around an object.

## **AESTHETIC**

Describing an object's visual appeal or attractiveness.

## **BAND SAW**

A bench-mounted or freestanding power tool used to make precise, curved cuts that is ideal for rough shaping CO<sub>2</sub> car bodies.

## **BRACKET**

A method of organizing competitions and determining race pairings. Bracket design varies with the number of competitors and the number of losses required to eliminate a competitor from the competition.

## **CHRISTMAS TREE**

An assembly of lights oriented in two vertical columns used near the starting line of drag racing and CO<sub>2</sub> racing to signal the start of the race.

## **CNC MILL**

A computer-interfaced machine used for shaping processes. Sequences of cutting tool movements are controlled by a variable computer program. *CNC* stands for "computer numerical control."

## **CO<sub>2</sub> CARTRIDGE**

A small, sealed, metal tube that contains compressed carbon dioxide. CO<sub>2</sub> cartridges are used to propel race cars down the track.

## **CONFINED**

Restricted to a limited space; carbon dioxide is confined in a sealed cartridge.

## **COPING SAW**

A small handheld saw with a narrow blade, useful for making curved cuts in wood. Good for rough shaping race car bodies if a band saw is unavailable.

## **DECELERATE**

The act of slowing a moving object. In CO<sub>2</sub> racing, a car must be safely decelerated after it crosses the finish line.

## **DRAG**

The force that resists an object's movement through the air. The more the object disrupts the laminar flow of air around it, the more drag is developed.

## **DRAGSTER**

A race car that races a short distance on a straight track. CO<sub>2</sub> race cars are often referred to as dragsters.

## **DRILL PRESS**

A bench-mounted or freestanding power tool used for drilling precise holes. Particularly useful for drilling properly aligned axle holes in the car body.

## **EDDIE**

A turbulent flow of air that moves in a random tumbling, or circular, pattern.

## **ELEVATED TRACK**

A freestanding racetrack surface that is roughly the same height as a tabletop. Spectator viewing is greatly enhanced with an elevated track. Pitsco's FasTrak is a fine example.

## **FINISH GATE**

The race system component that is located on the finish line of the racetrack. As the two cars speed through the gate, individual sensors detect their presence, stopping the system's electronic timers.

## **FIRING PIN**

Part of launch pod assembly with sharp pointed end that punctures a hole in cars' CO<sub>2</sub> cartridges to start a race. Made of hardened steel.

## **FLOW VISUALIZATION**

A feature of some wind tunnels that involves the introduction of a visible vapor into the moving airstream. This enables racers to see how their car performs in an airstream. Drag-inducing body features can be easily identified.

## **FRICTION**

The force that resists relative motion between two objects in contact.

## **GO/NO GO GAUGE**

A custom measuring tool that can be held up to a part of a dragster to determine whether the part meets the specified measurement requirements.

## **GRAPHITE**

In powder form, a dry substance that works well for lubricating race car wheels and axles. Available from Pitsco in small bottles.

## **HEAD-TO-HEAD LAUNCHING**

A method of racing where two competitors manually launch their cars. The competitors' reaction times are an important factor in the race. The Impulse G3 Race System features an optional head-to-head (H2H) mode.

## **HOT-WIRE FOAM CUTTER**

A device for cutting polystyrene that employs a thin, electrically heated wire that melts the foam.

## **HYBRID CAR**

A CO<sub>2</sub> race car design in which two wheels are housed inside the body and two are mounted externally.

## **INERTIA**

The property or tendency of an object at rest to remain at rest unless acted upon by a force.

## **LAMINAR FLOW**

A straight, layered flow of air that is free of turbulent motion.

## **LAUNCH PODS**

Devices that start a race by puncturing the cars' onboard CO<sub>2</sub> cartridges. Each car, with its nose on the starting line, is fitted to a launch pod before racing. An electronic signal from the race system triggers the two launch pods at the same instant.

## **LIFT**

The aerodynamic force that pushes upward on a body as it moves through an airstream. Airplane wings generate lift; race car bodies might also generate lift, positive or negative (downward force), as they move down the track.

## **MONOFILAMENT GUIDELINE**

A single-strand line used to prevent speeding CO<sub>2</sub> cars from soaring off the track. The line is threaded through two screw eyes mounted to the underside of a car body, and then it is stretched tight and anchored on extreme ends of the track.

## **POLYSTYRENE**

A solid, expanded plastic foam material that is soft and lightweight. Commonly referred to by the trademarked name Styrofoam.

## **POWER PLANT**

The CO<sub>2</sub> cartridge on board a race car. The power plant housing is the body material that surrounds the cartridge.

## **PRESSURE**

A measurement of force per unit of area. In a sealed CO<sub>2</sub> cartridge, pressurized carbon dioxide gas exerts an equal force in all directions to the inner surfaces of the cartridge.

## **PRODUCTION**

A phase in the design process in which the final version of a product is manufactured. Production follows the design, prototyping, and testing phases.

## **PROTOTYPE**

A one-of-a-kind, preproduction version of a product used to test for design flaws so they can be corrected before the product is mass produced.

## **RAIL CAR**

A CO<sub>2</sub> race car design in which a narrow rail connects the front axle to the back of the car and has wheels mounted on the outside of the car body.

## ROTARY MULTI-TOOL

A high-speed hobby power tool that works well for intricate shaping, cutting, drilling, sanding, and polishing. A variety of bits give rotary tools excellent versatility. It is often referred to as a Dremel, which is a popular brand name.

## SCREW EYES

Small screws with an enclosed ring on one end. Two screw eyes are mounted on the bottom of CO<sub>2</sub> race cars to accommodate the racetrack's monofilament guideline.

## SHELL CAR

A CO<sub>2</sub> race car design in which all four wheels are housed inside the body of the car.

## SPECIFICATIONS

A set of very specific requirements for a project or competition, often including a set of measurements.

## STAGING AREA

The area of the racetrack before the starting line, on the extreme end. Pairs of cars are placed in this area (after they are threaded onto the monofilament guideline) to await their turn to race. The staging of cars saves time during a racing competition.

## STARTING ALIGNMENT

The relative positioning of a pair of cars just before they race. Nose, or nose-to-nose, alignment is achieved when the extreme forward points of both cars are aligned with the starting line.

## STATIONARY

Not moving, sitting still.

## SYMMETRY

To have balance, or to have the same shape or size on opposite sides.

## THRUST

The force that propels an object, sets it into motion, or keeps it moving.

## THUMBNAIL SKETCH

A small, quick sketch used to rapidly communicate ideas.

## TOLERANCE

An acceptable variance from a specified measurement that's used to determine the minimum and maximum measurements.

## TRACTION

The friction between a car's tires and the road surface. Traction enables the wheels/tires to propel a car forward without the wheels spinning in place. In CO<sub>2</sub> racing, the wheels do not propel the vehicle, so increasing traction is not necessary.

## TURBULENCE

A property of an airstream moving in a swirling or tumbling fashion; see also *eddie*.

## VOLUME

The amount of physical space occupied by an object or substance.

## WEDGE CAR

A race car with external wheels that has a triangular wedge body shape.



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to learn more.