2016 OPS Figure 8 Rules

OVERALL

A. **Safety** – These OPS Figure 8 Car construction rules are to encourage the highest degree of safety for participants and spectators with the integrity of racing competition in mind.
B. **Rules** – Because of the many types of cars that can be built under these rules, it is impossible for these rules to provide for every situation that might occur. OPS is given discretion with the intent of safety and competition in mind to rule on any matter not covered specifically in these rules.
C. **Inspection** – Each car is required to a technical and safety inspection by OPS Tech before its first appearance on the track. Subsequent inspections may occur by the OPS Tech at any time. At inspection, the car owner is responsible for the car meeting these rules and proving the car meets the rules when asked. The decision of the OPS Tech as to whether the car complies with the rules is final and is not subject to appeal.
D. **Changes** – OPS reserves the right to make changes in these rules during the course of the season should the changes become necessary to insure greater safety or more equal competition.
E. **Additional Safety Equipment** – At all times while in car, driver must wear an approved Snell 95 or greater helmet, fire resistant driving suit, and gloves. Suits must cover legs, arms and body of driver. Suits and gloves must be of fire resistant material. Driving shoes are highly recommended. All cars are required to have a flashing or blinking yellow light mounted on the roof and must be activated when the ignition switch is turned on. All other OPS safety rules apply to this division also.

CHASSIS

A. **Steel Tubing** – All structural parts of the car including front clip, rear clip, bumpers, rub rails, frame rails, roll cage, and fuel cell cage must be made of structural steel tubing.
B. **Front Clip** – Can be factory or fabricated. Fabricated clips need to be constructed in a safe manner.
C. **Roll Cage** – It begins with a 4-point cage. All parts of the roll cage including door bars must be built from a minimum of 1.75” (1 ¾”) round steel tubing with a minimum wall thickness of .095 inch. The roll cage must be welded with no gaps or holes. Key stress points must have steel gusset plates for reinforcement. Safety must be made as priority #1. Any additional bars not specifically mentioned below are very welcome and highly recommend.

- There must be four equally spaced horizontally mounted door bars on the left side and 3 equally spaced on right side. The left side door bars must be curved outward as far left as possible. The right door bars can be curved or straight located directly above the right side frame rails. All door bars must be connected by at least three equally spaced vertical bars. The bottom door bars must be connected to the frame rail by at least three equally spaced vertical bars. At least two curved outward horizontal bars must be installed to protect the driver's legs and feet. The left side door bars and foot bars must be covered by a .25” steel plate.
- The roll cage is constructed with a vertical hoop behind and above the driver's head that is welded to the frame rails at the bottom and to the left and right front roll cage legs by a roof hoop. The top cross bar of the rear vertical hoop and the side bars of the roof hoop must be located so the bottom sides of those bars are higher than the top of the driver's head when the driver is seated in the car. The front legs should follow the contour of the side of the windshield and be welded to the frame rails. The rear vertical hoop must have a diagonal bar from top left to bottom right or top right to bottom left. A bar must connect the left and right of the rear vertical hoop at seat height. This bar must be welded to the diagonal bar. A bar must connect the legs of the rear hoop at their base or it is recommended than an X connects the left and right frame rails at the points the front legs and rear hoop are connected. A bar must be installed across the dashboard connecting the left front roll cage leg to the right front roll cage leg. Rear support bars, left, and right, must extend behind the top of the rear vertical hoop to the rear of the frame.

D. **Driver's Seat** – Must be racing type aluminum constructed seat. The seat must be at least 8 inches from any door bar and mounted in front of the rear hoop of the roll cage and inside the left frame rail or frame rail extension. The frame rail extension must be constructed from the same material as the frame rail and it must extend at least from the front left roll cage post to the left rear hoop upright. From the racing seat to the right side of the chassis, nothing should interfere with a driver's ability to exit the right side of the car or for personal to extricate a driver in the event of injury.

E. **Seat Belts** – A minimum of a 5-point harness system must be used. All seat belts must be new or no more than 3 years old with the manufacturers date being visible. The belts must be a minimum of 3" wide (the crotch strap can be a 2" wide minimum). All belts must connect to a quick release buckle. No frayed belts allowed.

F. **Window Net** – The OPS Figure 8 Car must have a window net for increased driver safety.

G. **Firewalls** – There needs to be a firewall between the fuel cell and the driver as well as between the engine compartment and the driver constructed from sheet steel of at least 22-gauge.

H. **Floor Boards –** The driver's compartment floorboards must be constructed of sheet steel of at least 22-gauge. This steel floorboard must extend from the left frame rail to the right frame rail and connect to the front and back firewalls. This floorboard may be raised to the right of the driver the minimum distance required to provide clearance for the drive shaft, mufflers and exhaust pipes.

I. **Drive Shaft Tunnel** – Suggest the floorboard area in and around the drive shaft be shielded with .125-gauge steel. This area should meet safety parameters that extend from the front firewall rearward to the rear of the driver's seat. This augmented tunnel must provide extra protection from drive shaft failure.

J. **Bumpers** – The front & rear bumpers must be securely mounted and braced. No sharp edges.

K. **Rub Rails** – They are to be installed along the sides of the car. The rub rail on each side must be mounted as close to the body as possible and mounted between the tires. Rub rails must be constructed of round or square tubing and curved inward on both ends with no sharp edges.

L. **Wheelbase** – The OPS Figure 8 Cars wheelbase must be between 102" and 114".

M. **Fuel System** – Cars must have an approved fuel cell mounted 6-12 inches behind the differential and between the frame rails. The following applies to the fuel cell, cage, can, and fuel lines:

- The fuel cell must be professionally made-for-auto-racing. It must have a full sponge baffle inside, a top mounted bolt-on filler plate assembly, a full sealing cap and operable check valve in the vent line. Maximum fuel cell capacity is 22 gallons. A check valve is mandatory for a gravity-fed cell.
- The fuel cell container must be built of at least 18-gauge steel enclosing the bottom, all four sides, and top with hole only for the filler plate.
- The fuel cell cage must be adequately constructed. The cage must be strongly attached to the rear clip. The front of the fuel cell, inside its mounting cage must be 6 to 12 inches behind the differential housing. The bottom most point of the fuel cell mounting cage must be at least 8 inches above the ground.
- All fuel lines must be attached through the bolt-on filler plate. The vent line must contain a check valve to eliminate fuel leakage if the car should be inverted. The fuel line may be a safety-constructed system of steel and/or neoprene line. If the fuel line is routed above the floor board in the driver's compartment, the line must run through continuous steel conduit in its run between the front and rear firewalls.

N. **Shocks, Front and Rear Suspension** – May run any with safety held in the highest priority.
O. **Steering** – The steering system must be designed with safety in mind. A quick-release removable steering wheel is mandatory. The steering column must be collapsible. A padded steering wheel is recommended.
P. **Brakes** – The OPS Figure 8 Car must have fully operational brakes at all four wheels.
Q. **Wheels** – A maximum 8" wide wheel of one-piece design is allowed. Wheels must be steel.
R. **Tires** – All competitors must use the OPS **Hoosier 790 competition series** spec tire. It will ONLY be sold at the OPS. No other tires will be permitted. No tire softening or tire soaking or tire altering allowed. No chemicals or materials for these purposes allowed on the OPS property. The OPS tech staff can check tires at ANY time and by ANY means. Their decisions being final. Violators will be penalized.
S. **Ground Clearance –** The frame, engine, exhaust system and all other parts of the under carriage must be a minimum of 4" off the ground with the car being ready for racing competition.
T. **Weight** – OPS Figure 8 Cars must weigh a minimum of 2,600 pounds after race with driver unless posted.
U. **Ballast –** Ballast must be a piece of steel or a solid substance (such as lead) encased in steel and solidly mounted (as not to be dislodged in an accident) to the car. No "temporary" mounting permitted. All ballast must be painted white and include car number. No ballast containers may be installed inside the driver's compartment. No ballast may be used that is not solid metallic material such as liquids, sand, etc.

BODY
A. **Design** – The overall design of the OPS Figure 8 Car's body is open to creativity with limitations detailed below. The design should not prohibit the operation of the car mechanically and safely. This includes the eyesight lines for the driver as well as the sightlines of the other competitors.
B. **Material** – Body panels may be constructed of steel, aluminum, plastic or fiberglass.
C. **Mounting** – The body must be mounted smoothly with no protrusions on the exterior surface. Body panels must be securely fastened to prevent loosening or loss on the racetrack.
D. **Windshield –** The car must have a windshield and vertical steel bars in front of the driver. Windshields to be designed to cover the driver's area thus ensuring driver protection from hot fluids. The recommended size goes from top to bottom of the front opening and from the windshield post to the center of the car. At least three solid steel rods of at least .5" diameter must be welded to the roll cage in front of the driver's head. The bars may be no more than 5" apart. The windshield must provide a minimum 12" vertical front opening.
E. **Roof –** A roof is required and not to be over 50" at its highest. The roof is for appearance purposes and not for aerodynamics. Roof is to be of streetcar appearing type or flat with slight continuous angle upward. No curved or aero-foil roofs or skateboard ramp roofs. No roof wings added or a part of the roof allowed.
F. **Hood** – The hood must cover the entire engine compartment including the radiator and be securely mounted. A hood scoop covering the air cleaner is allowed if the scoop does not obscure the driver's view and the scoop is open only in the front. The hood must be closed in the rear to separate the engine compartment from the driver's compartment.
G. **Rear Spoiler** – The spoiler should be made of a clear material for drivers to see thru.
H. **Sideboard Wings** – These can be a maximum of 60" from the ground and cannot extend past any part of the driver compartment. The sideboard wings should be made of a clear material for drivers to see thru. Lettering can be used on these wings, but for safety reasons CANNOT entirely cover the surface.

DRIVE TRAIN

A. **Engine Block** – It must be a cast iron block of any size ever sold in any car or truck.

B. **Engine Location** – The engine must be located so at least one spark plug hole is not more than 2” behind a line projected between the upper ball joints. The lateral (side to side) location of the engine, measured from the cylinder heads, must be centered between the upper ball joints and the front clip side rails within one inch.

C. **Carburetor** – Only 1 (one) Stock Holly 4412 or Rochester 2 barrel only. The carburetor throttle linkage must have two fail-safe return springs on the throttle shaft that provides sufficient pressure to return the throttle to a closed position in case of linkage failure. The throttle linkage must be constructed from rod, No cable type linkages allowed. A throttle "comeback" enabler is mandatory.

D. Heads, Intake and Exhaust Manifolds – Can be cast iron or aluminum.

E. **Oil System** – No external oil pumps, and/or dry sump systems are allowed. Oil filters and oil coolers may be moved to locations outside the engine, but must be mounted in the engine area between the frame rails.

F. **Ignition System –** Must have a distributor. NO TRACTION CONTROL ALLOWED

G. **Radiator and Fan –** The radiator must be located in front of the engine and the fan must be shrouded at the top to prevent injury. The radiator cap must be of the safety, pressure-release type.

H. **Fuel Pump** – No electric fuel pumps, belt driven fuel pumps, or pressurized fuel systems are allowed. The fuel pump must be mounted on the engine block and be mechanically powered by the engine.

I. **Fuel –** No alcohol or nitrous allowed, only pump gasoline with no fuel additives or oxygen-bearing agents.

J. **Exhaust System and Mufflers –** Solid exhaust pipe must be used (no flex pipe is allowed). Street legal mufflers meeting track specs must be installed on each exhaust pipe. The noise created cannot exceed 105dB. Exhaust may exit thru the hood.

K. **Starter and Battery –** Car must be capable of starting the engine without assistance before each race. The battery must be mounted inside the car away from the driver securely mounted and covered.

L. **Clutch and Flywheel –** Any type may be used. The clutch must be operable (allowing the driver to stop and shift gears) at all times on the racetrack. A blow-proof bell housing is required or 3/16” plate steel installed surrounding the bell housing to protect the driver in case of a failure when using a clutch assembly.

M. **Transmission –** Can be any type sold in a car/truck or racing application. It may be modified, but it must be capable of getting the car under way from a stop and of backing up the car with no assistance.

N. **Drive Shaft –** It must be one piece, open, at least 3" in diameter and painted white. The drive shaft is to be encircled by two 360 degree steel straps (minimum 1 ½ inches by ¼ inch thick). These straps must be mounted securely enough to prevent the front of the drive shaft from falling onto the ground or flailing into the driver's compartment. No aluminum drive shafts are allowed.

O. **Differential –** All components including the axles, hubs, brakes, sway bars and shocks may be stock automotive or racing parts. Offset of rear end must not exceed five inches. Any differential "wrap-up" devices must be mounted behind the driver behind the steel interior panels.