

GTA MARRS

2012 Rules

The following rules are intended to allow competitors to utilize proven stock car technology to compete in SCCA road racing events at a reasonable cost. The philosophy of GTA is to provide opportunities for drivers rather than engineers to showcase their skills. As such it is NOT a class to see who can spend the most money finding and exploiting loopholes in the rules, but instead is intended to use unmodified racing components that are readily available to the general public.

As we continue to expand the GTA rules to include new chassis, bodywork, and engine specifications, a certain amount of adjustment of the rules must be expected as we gain track experience with the various packages. Unless there is an obvious inequity between packages, however, these changes should never occur during a given competition season.

These rules shall govern all of the events and, by participating in an event, the competitor is deemed to have complied with these rules. No implied or express warranty of safety shall result from publications of, or compliance with, these rules and/or regulations. The rules are intended as a guide for the conduct of the competition and are in no way a guarantee against injury or death to a participant, spectator or an official.

ALL CARS ARE SUBJECT TO PERIODIC INSPECTIONS TO ENSURE COMPLIANCE WITH THESE RULES.

I. General Specifications

- A. All cars competing in this class must meet all SCCA safety requirements for GT category automobiles found in Section 9 of the GCR unless otherwise specified herein. This includes but is not limited to GCR requirements for:
 1. Vehicle documentation
 2. Driver restraint systems
 3. Driver's safety equipment
 4. On-board fire systems
 5. Fuel & fuel cells (may use either the Touring or GT fuel specs)
 6. Master switch requirements
 7. Brake and tail light requirements
 8. Rollover structures
 9. Seats
 10. Towing eyes
 11. Window safety nets
 12. Gauges and data acquisition
- B. Car number and class designations must meet SCCA GCR specifications. The class designation for GTA MARRS is "GTA".
- C. All weights and ride height measurements shall be taken with the car set up for competition and will include the driver.
- D. The maximum rear weight bias at any point during the competition is 52.0 %.
- E. Any ballast used to meet minimum weight must meet the specifications of the current GCR.
- F. Weight shifting devices of any type are prohibited.
- G. No titanium components are allowed for any purpose. Not axles, not fasteners, not engine parts, not anything.
- H. All cars presented for competition must undergo a technical inspection prior to their first event of each season. This inspection will determine the minimum weight for that car and that weight will be noted on supplied stickers that should be displayed near the 'B' pillar on each side of the car. If you have questions about the minimum weight of your car, consult with an Advisory Committee member.
- I. **"Open-Hood" Policy:** All GTA competitors agree to allow a non-invasive visual inspection of any component of their car up to one hour before a scheduled track session by any host

organization tech inspector or registered GTA entrant/driver. This also extends to any Impound sessions required by the hosting organization.

II. Chassis Specifications

- A. Any commercially available, mild steel stock car chassis with a minimum wheelbase of 102" and a maximum wheelbase of 110" may be used.
- B. Chrome alloy chassis are not allowed.
- C. There are two basic styles of chassis used in GTA-Southeast - the "narrow track" chassis and the "wide track" chassis as defined by track width:
 - 1. The "narrow track" chassis has a track no greater than 62.0 inches.
 - 2. Any chassis with a track wider than 62.0 inches is considered a "wide track" chassis. The maximum track for any chassis is 65.0 inches.
- D. The minimum overall body height of any chassis (measured 10 inches behind the top of the windshield) is 46.5 inches.
- E. The base minimum weight for a car based on a narrow track chassis is 2830 pounds.
- F. The base minimum weight for a car based on a wide track chassis is 2930 pounds.
- G. The minimum ground clearance for any part of the chassis or bodywork rearward of the front tires is 3.5 inches.
- H. The minimum ground clearance for the front air dam or splitter is 2.5 inches.
- I. The maximum overall width is 75.0 inches for a narrow track car.
- J. The maximum overall width is 80.0 inches for a wide track car.
- K. A minimum of 9.5 inches, measured from the center of the crankshaft bolt to the ground, must be maintained at all times.

III. Body Specifications

- A. All cars in this class must use 1997 through current-year commercially available stock car bodywork. The types of bodies allowed are:
 - 1. Cadillac CTS
 - 2. Chevrolet Camaro (2010+)
 - 3. Chevrolet Impala
 - 4. Chevrolet Malibu
 - 5. Chevrolet Monte Carlo
 - 6. Dodge Challenger (2010+)
 - 7. Dodge Charger
 - 8. Dodge Intrepid
 - 9. Ford Fusion
 - 10. Ford Mustang (2010+)
 - 11. Ford Taurus
 - 12. Ford Thunderbird
 - 13. Lincoln MKS
 - 14. Oldsmobile Cutlass
 - 15. Pontiac G8
 - 16. Pontiac Grand Prix
 - 17. Toyota Camry

NOTE: Cars using 2010+ Camaro, Challenger, or Mustang bodies ("C-M-C" cars) may reduce their minimum weight by 50 pounds.
- B. All body components must be utilized in an as-produced, unmodified form and must retain all manufacturer identifying markings. No "one-off" or "high downforce" body packages are allowed.
- C. All cars competing in a race event must have a complete painted or polished gel-coat body to start the weekend. Presentation of stock appearing, very professionally finished racing stock cars is the primary objective of GTA. Overall workmanship and appearance shall be a determining factor when a car is approved for competition.

- D. Absolutely no additional holes, vents, modifications, etc., will be permitted on the body panels except as provided herein.
- E. Unless damaged by an accident during the racing weekend, all body panels must remain in their standard orientation when the car is at speed (i.e. - no flexing or cocking of body panels to vent air from underneath or inside the car is allowed).
- F. The bottom of the car must not be “belly-panned” or flush paneled. Panning may not extend rearward of the trailing edge of the radiator. Other than ductwork that serves no other purpose than to direct cooling air to the brakes, fuel/air metering device (carburetor or throttle body), and/or driver, no fixed or moveable air-directing devices are permitted underneath or inside the car.
- G. Installation of air ducts to direct air to cool the driver is permitted. Air ducts to direct air to cool the driver can be installed behind the a-pillar. Duct and mount cannot exceed 8 inches in height by 12 inches in length. A maximum of three vents may be added to each rear side window to exhaust hot air from the driver’s compartment.
- H. The hood must have a minimum of four (4) positive locating pins on the leading edge of the hood and must be securely fastened by either pins or hinges at the rear. Cars using Late Model hoods may install the Five Star hood hold down (part #570-3700 or part #660-3700) to stabilize the front of the hood.
- I. If used, a cowl opening shall be located at the rear edge of the hood at the base of the windshield and have a maximum opening of 2.5” deep by 20.0 inches wide. Fresh air boxes to the fuel/air metering device (carburetor or throttle body) are allowed as long as that ductwork serves no other purpose.
- J. The single-plane rear blade spoiler must be mounted at an angle from 50 to 75 degrees (perpendicular to the ground being 90 degrees) and may not extend beyond the rear bumper when viewed from directly above the rear bumper. Spoilers must be a minimum of .063 aluminum or Lexan and may vary in overall height to match the contours of the bodywork. The rear spoiler dimensions shall not exceed 59.0 inches wide by 5.0 inches in height, or 295.0 square inches total surface area. Braces to prevent spoiler deflection are allowed, but may not serve any other purpose.
- K. For 2010+ C-M-C bodies **ONLY**: Cars using these bodies may utilize either the Howe dual-element rear wing and end plates (part # AS105552) or the ARBodies single-element rear wing and end plates (part # 40103 or 40103B). The wing must have a maximum height no higher than the highest point on the roof of the car and may not extend behind the rear bumper and/or bodywork measured at the centerline of the chassis. If the wing is not used, a blade spoiler meeting the specifications in III.J must be used.
- L. For 2010+ C-M-C bodies **ONLY**: Cars using these bodies may utilize a front splitter similar to the Howe part # B917. The front splitter may not extend more than 3.0” beyond the forward-most vertical portion of the front bumper.
- M. A full, stock-dimension molded front windshield is mandatory and must be constructed from 3/16” (minimum) Lexan. Three (3) 1-inch by 1/8” thickness internal windshield support braces should be spaced at least on six-inch centers and roughly centered on the windshield. The windshield must be secured to the body by bolts and/or rivets to prevent the windshield from popping out under internal pressure such as a spin.
- N. A full, stock dimension molded rear “glass” constructed of minimum .093’ thickness Lexan is required. It must be held securely in place by a minimum of two (2) 1.0” wide external straps as well as bolts and/or rivets mounting the “glass” to the rear bodywork around the perimeter of the opening. Back “glass” must also be securely braced internally to prevent significant bowing or distortion under racing conditions.
- O. Side windows (driver and passenger side) must remain as produced in dimensions. Models with rear quarter or opera windows must have the stock opening covered with clear, securely mounted .093” thick Lexan. All window net installations must meet SCCA specifications.
- P. Cars must be neat in appearance at all events. All cars must have complete bodies, fenders, hoods, grills, and bumpers. Cockpit floors must be complete with no tunnels and/or air ducts

allowed. No streamlining will be allowed, such as windshields, underpans, radiator grills or headlights. Taping of hood and/or body seams is not allowed.

- Q. Headlight decals and taillight decals or the model's original taillights are required at all times. Two functioning brake lights in the approximate location of the stock taillights are required. If you are planning to run in the rain, two functioning taillights are also required.
- R. Late model bodies may use "vent windows" to stabilize the A-post at high speeds. The maximum dimension along the top of the door will be nine (9) inches, and the trailing edge must be ninety degrees from the top of the door to the A-post. No vent windows may be added to the existing panels of the flange-fit bodies.

IV. Suspension/Shock Absorber Specifications

- A. Springs are open.
- B. The steering wheel must be mechanically coupled to the front wheels and activate only those wheels (no "steer by wire" or "four-wheel steering"). Power assist is allowed and may be driven off the differential.
- C. A collapsible steering column, either by layout design or column construction, is required.
- D. Front lower control arms must be made of steel. Upper control arms, strut arms and upper pivot shafts may be aluminum.
- E. Front spindles/uprights must be steel, designed for racing applications, and be readily available to all competitors. No one-off, "center cooled" or Riley style spindles/uprights/hubs are permitted. Zero-scrub geometry is not permitted.
- F. Independent front suspension with articulated upper and lower control arms is mandatory.
- G. Major steering components including steering arms, tie rods, idlers, etc., must be fabricated from approved ferrous or non-ferrous alloys. All heim joints must be of aircraft quality.
- H. Sway (anti-roll) bars must be made of steel. Sway bar arms must be made of steel or aluminum. Heim joints are allowed to be attached to the lower control arm(s) and/or rear end. Driver adjustable sway bars are not allowed.
- I. The longitudinal linking system for the rear of the chassis may not exceed four locations and may not include a "torque tube" of any design. Spring-loaded and/or cushioned (torque absorbing) links are permitted.
- J. Either a panhard bar or Watts link may be used to locate the rear axle laterally.
- K. Independent rear suspensions are not allowed.
- L. As long as it has no remote reservoir, any single-adjustable shock absorber may be used with no weight penalty. If even one shock absorber is multi-adjustable or has a remote canister, a fifty (50) pound weight penalty is assessed.
- M. Driver adjustable shock absorbers are not allowed.

V. Rear End Specifications

- A. Ford 9" or Quick Change units only. No "rear drive" or modified driven Quick Change rear ends are allowed.
- B. All axle tubes must be made of steel.
- C. The maximum rear camber per wheel is +/- 1.75 degrees.
- D. Electronic and/or electronic/hydraulic traction control devices are not allowed. Competitors found with any type of traction control device on the vehicle, whether operational or not, will be disqualified from the class for twelve (12) months.

VI. Transmission, Clutch, Flywheel, Bellhousing, and Driveshaft Specifications

- A. Transmissions must be of readily available stockcar-style technology with four forward gears and an operating, driver-engageable reverse gear. All forward gears must be at least 1.00 inches thick. No five-speed, semi-automatic or automatic transmissions are allowed. Manual "H-style" shift linkage is required. No sequential shift mechanisms are allowed. Ceramic bearings are not allowed.
- B. The clutch is limited to no more than three steel disks and floater plates with a minimum clutch diameter of 5.25 inches. No carbon parts or carbon clutches are allowed.

- C. Bellhousings must be Quarter Master, Tilton or OEM. Transmissions must bolt directly to the rear bellhousing surface (i.e. - the 10" spacers common in GT-1 are not allowed).
- D. The driveshaft must be one piece and made of metal.
- E. A minimum of two steel 360-degree driveshaft hoops shall be installed of sufficient strength to contain the driveshaft in case of u-joint or driveshaft failure. Said hoops shall be located within twelve (12) inches of the front of the shaft and as close as practical to the rear u-joint.

VII. Wheel and Tire Specifications

- A. Rims must be 15" diameter steel stock car rims of a one-piece construction specifically designed for racing. Wheel offset must be a minimum of 3.00 inches and a maximum of 7.00 inches (i.e. - zero-scrub front suspension is not allowed). Maximum wheel width is 10".
- B. Soaking or chemical treating of the tires is prohibited.
- C. In the event the race is declared a rain race by the Chief Steward, any tire may be used that fits a GTA-legal rim.
- D. When a vendor changes the specified tire model because a tire is no longer being manufactured, both the previous model and current model for that manufacturer may be used the next season, but the obsolete tire cannot be used after July 1.
- E. For the 2012 season, the specified GTA tires are the Goodyear 2560 and the Hoosier 3035.

VIII. Brake Specifications

- A. All vehicles must use dual master cylinder, 4-wheel disc brake systems.
- B. Driver adjustable brake bias is allowed.
- C. Brake rotors must be iron.
- D. Brake recirculators are allowed.
- E. Any brake caliper utilizing pads with a maximum brake friction surface of 4.75 x 2.50 inches may be used with no weight penalty. If even one caliper utilizes pads larger than 4.75 x 2.50 inches, a fifty (50) pound weight penalty is assessed.
- F. Inline blowers may be used in the brake cooling ducts, but water cooling of the brakes is not allowed.
- G. Electronically controlled anti-lock braking systems are not allowed.
- H. Brake pad materials are open.

IX. Engine Requirements

There are multiple engine preparation packages that can be used, but any engine must comply with all the specifications of the selected package. i.e. – no “cherry picking” of items across multiple engine packages is allowed. All cars must comply with the general engine specifications found in Appendix A, then must fall into one of the following six categories:

- “Traditional” GTA carbureted engine as defined in Appendix B.
- “ASA Tour” LS-1 engine as defined in Appendix C.
- “Upgraded” LS-1 based engine as defined in Appendix D.
- “ZZ4 Fast Burn” engine as defined in Appendix E.
- “604 Circle Track” engine as defined in Appendix F.
- “Restricted” carbureted engine as defined in Appendix Z.

As new common engine packages become available they will be evaluated by the Advisory Committee(s) and may be added as optional engines under these rules.

The MARRS advisory committee is:

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Appendix A: General Engine Specification (apply to all engine packages).

1. All engines will be normally aspirated, pushrod V-8s.
2. The centerline of the crankshaft shall be located within 1.00 inches of the centerline of the entire chassis (no more than 1.00" offset is permitted).
3. Engine setback will be measured from the center of the front most spark plug hole to the centerline of the top ball joints. For narrow track cars the maximum setback is 2.00 inches. For wide track cars the maximum setback is 4.00 inches.
4. A minimum of 9.5 inches, measured from the center of the crankshaft bolt to the ground, must be maintained at all times (with all tires inflated to a maximum of 25 psi).
5. Aftermarket engine blocks are allowed, but must be equal to or greater in weight and exterior dimensions compared to the original manufacturer of the make and model. No aftermarket aluminum blocks are allowed.
6. The crankshaft must be made of steel or iron. The stroke may be increased or decreased, but the minimum stroke length is 3.25 inches. The minimum (bare crank) allowable weight is 46 pounds. Lightweight, knife-edge, 180-degree, pendulum cut, scalloped, and/or undercut counterweight crankshafts are prohibited.
7. Connecting rods must be solid steel. No titanium, aluminum, stainless steel or composite rods are allowed. Rods may be tested by using a magnet.
8. Valve covers are open.
9. Alternators must be OEM type, belt driven, and are optional. One-wire alternators are permitted and may be driven off the engine or the differential.
10. Water pumps must be OEM type. Water pump impellers may be altered for improved cooling. No reverse cooling systems are allowed.
11. The accelerator pedal must be mechanically coupled to the fuel/air metering device (no "fly by wire" throttles).
12. Each car must utilize a verifiable device that limits maximum engine RPM. The unit cannot be in a location where it can be modified or adjusted by the driver while the car is in motion. It is incumbent on each team to demonstrate that their rev limiting device is (a) functional, (b) accurate, and (c) tamper-proof.
 - For the soft touch systems all chips of the same setting may be thrown in a box and distributed randomly. At any event a test chip (3000 RPM) may be used to verify all rev limiters are functional. After verification, distribution and installation, chips also may be tie-wrapped into place or otherwise marked by a Tech Inspector. Cars with chips that are dislodged during qualifying will start at the rear of the entire grid while chips dislodged during the race will result in disqualification.
 - To enforce rev limits on the LS-1 based engines (both standard and upgraded) ECUs may be randomly exchanged and/or swapped out with a standard ECU for the engine package being used. For the carbureted LS-1 engines, this would involve random assignment of the MSD 6010 timing modules.
13. Spark plugs are open.
14. The radiator must retain a stock appearance and must be located in front of the engine. The top of the radiator may be laid back a maximum of 3.00 inches from vertical.
15. Any commercially available stock car exhaust system that meets track-specific sound requirements may be used. Exhaust systems may be chromed, ceramic coated and/or painted.

Appendix B: "Traditional" carbureted GTA engine specifications.

1. Must meet all requirements listed in Appendix A.
2. Engine displacement can be a maximum of 358 cubic inches.
3. Pistons must be any forged flat top version, however valve reliefs may be cut into the top surface. No portion of the piston may protrude from the block. Each piston must have two compression rings and one oil ring groove.
4. The minimum wall thickness of the piston wrist pin must be .125 inches and must be made of steel. Any type of wrist pin locking device may be used.

5. Chevrolet cylinder heads must be Dart II cast iron heads, part #10310010P, which replaced part #1112B and #1115B.
6. Ford cylinder heads must be Dart II cast iron heads, part #5302B or World Products' Roush head, part #053040.
7. Chrysler cylinder heads must be Mopar Performance part #P4529994.
8. Maximum intake valve diameter is 2.020 inches. Maximum exhaust valve diameter is 1.600 inches. No titanium valves are allowed.
9. The minimum combustion chamber allowed is 62.0 cc and the internal cylinder head chamber dimensions must remain identical to the cylinder head's original chamber dimensions. Grinding for cc adjustments is allowable only in the cavity area. The cylinder head's original squish area must not be modified from the original dimensions at any point in the cylinder head. Porting and polishing is not allowed. No more than a three-angle valve job with a bottom cut of 60 degrees is permitted. A maximum of 0.250 inches from the head of the valve seat to the bottom of the 60-degree bottom cut is allowed. No grinding in the valve bowl area is permitted. No interior or exterior coatings are permitted.
10. Valve stem size must be a minimum of 11/32" and must remain as delivered from the manufacturer without modification. No pro-flow or any type of valve that steps down in diameter beyond the listed dimensions are allowed.
11. Externally measured compression ratio may not exceed 10.7:1. Engine compression ratio is designed to be 10.2:1, so a variance of 0.5 has been established in the maximum allowable externally measured compression ratio of 10.7:1.
12. Chevrolet intake manifold must be an Edelbrock Victor Jr., part #2975.
13. Ford intake manifold must be an Edelbrock Victor Jr., part #2980 or #2981.
14. Chrysler intake manifold must be an Edelbrock Victor W-2, part #2920.
15. No modifications to the intake manifold are allowed. No porting, polishing or filling of ports with any kind of material is allowed. No internal or external coatings or painting of any type is allowed. The maximum intake manifold port size is 1.900 inches high by 1.100 inches wide. The height from the top of the manifold mounting flange to the bottom of the port must be no less than 1.000 inches.
16. The carburetor must be a Holley 650 DBL pump, part #0-80541-1 and must be completely unmodified except for changing of jets and changes (safety wire or epoxy) to keep the booster nozzles from falling into the intake manifold. No porting, polishing or addition of epoxy (except to retain the booster nozzles), resin or any other material is permitted. A maximum 1.000 inch thick spacer may be used between the intake manifold and the carburetor.
17. Any roller or flat tappet camshaft with a maximum lift of 0.612 inches (measured at the valve with 0 lash) may be used. Engle camshaft part #RK-38 meets these specifications. The cam drive may use either a chain or belt system.
18. Rocker arms may be any OEM, steel or roller bearing type. No split shaft, shaft mounted or trunk-lined rocker assemblies are permitted. The maximum rocker arm ratio is 1.600:1.
19. The oil pan is open, but the oiling system may not exceed a three-stage system (two scavenge stages and one pressure stage). Cosworth, Cosworth-style, Autoverdi, and Heineker pumps are not allowed.
20. Air cleaners are required at all times. The air filter housing must be centered on the carburetor and all air entering the engine shall pass through the filter. The air filter element may not exceed 15.00 inches in diameter and the maximum element height is 4.00 inches.
21. Ignition systems may be OEM or electronic. No magnetos are allowed. The distributor must mount in the stock location. No ignition components may be located on the driver's side of the chassis. The ignition(s) must have a soft touch rev limit chip set at 7000 rpm (no variable and/or adjustable ignition systems are allowed). The soft touch system must be enclosed and have no interruptions or breaks in the wires en route to the distributor. All ignition wires connecting to the rev limiter(s), the ignition box(es), and the coil(s) must be readily accessible for inspection. No other wires may intersect or connect to those wires operation the ignition system(s) save for the ignition switch(es). If more than one ignition box is used each will be limited by a separate 7000 RPM rev limiter.

Appendix C: “ASA Tour” LS-1 engine.

1. Must meet all requirements listed in Appendix A.
2. This is the LS-1 Corvette engine as used by the 2005 ASA series. This includes but is not limited to the following:
 - a. ASA-spec filter box
 - b. ASA-spec air meter ducting (bellows)
 - c. Stock Mass Air Flow (MAF) sensor
 - d. Unmodified LS-1 intake manifold, part number 12560894
 - e. Unmodified LS-1 cylinder heads, part numbers 241 or 853
 - f. Camshaft part number 12480110 (“LS” V8 ASA cam) with 1.7:1 rockers
 1. max lift measured at the intake and exhaust valves is .525”
 2. duration at .050” lift: intake = 226, exhaust = 236
 3. lobe separation is 110
 - g. Maximum compression ratio is 10.1:1
3. The 75mm throttle body must remain in place.
4. The stock stroke must be maintained. Cylinders may be honed as part of the normal freshening procedure, but the engine displacement can be a maximum of 350 cubic inches.
5. Crankshaft may be replaced with Eagle # 434636226100.
6. Rods may be replaced with Eagle # 612503D2000, Callies Compstar # 6125LS1, or Engine Pro # 10-1108-8.
7. Pistons may be replaced with Mahle # LS1314-898-F04, LS1314-905-F04, or LS1314-908-F04 (depending on the overbore needed).
5. Maximum engine RPM as controlled by the ECU is 6500 rpm.
6. All ECU’s must have either the ASA Tour or Schwanke-certified logos intact.
7. Cars using this engine may reduce their minimum weight by fifty (50) pounds.
8. The oil pan is open, but the oiling system may not exceed a three-stage system (two scavenge stages and one pressure stage). Cosworth, Cosworth-style, Autoverdi, and Heineker pumps are not allowed.
9. All LS-1 engines, whether sealed or not, are subject to the same teardown policies as covered by the GCR.

Appendix D: “Upgraded” LS-1 engine.

ASA Tour LS-1 based engines (Appendix C) may be modified only as follows:

1. Must meet all requirements listed in Appendix A.
2. The base LS-1 heads may be replaced with unmodified cylinder heads, part numbers 243 or 799.
3. An ECU re-flash to raise the maximum RPM limit to 6800 is allowed.
3. Optional upgraded intake systems:
 - Option 1: Any 90mm throttle body may be installed. One example is GM part #12589181. A stock, unmodified LS-2 intake manifold to fit the larger throttle body must be installed.
 - Option 2: An LS-6 intake manifold (part # 12573572 or 88894339) may be installed, but the stock 75mm throttle body must remain in place.
 - Option 3: The fuel injection system may be completely replaced with a Holley 650 carburetor as specified in Appendix B, item 16. This conversion also requires GM intake manifold part #88958675 and an MSD 6010 timing module.
4. The ASA-spec filter box and air meter ducting (bellows) may be replaced by aftermarket parts, but the stock Mass Air Flow (MAF) sensor must remain in place.
5. New valve springs, Isky #165A or GM part #12586484, should be installed to handle the higher RPM limit.
6. New ARP rod bolts, part #134-6006, should be installed to handle to higher RPM limit.
7. Competitors may upgrade their own ASA LS-1 engines, but ONLY the items listed in Appendix D, numbers 2 through 6 may be modified. NO other modifications are allowed.
8. For technical assistance on upgrading the LS-1 engine, contact:
FlowTech

191 Airport Road
Arden NC
828-775-8886 – talk to Lee Schwartz

9. ASA engine modification/re-certification work can also be performed by:
Schwanke Engines, LLC
321 West Rock Street
Springfield MN 56087
800-423-6571 – ask to speak to Tim
www.schwankeshortblocks.com
10. All LS-1 engines, whether sealed or not, are subject to the same teardown policies as covered by the GCR.

Appendix E: “ZZ-4 Fast Burn 385” engine.

This is a 23-degree aluminum head GM crate engine P/N 12499712 that must remain untouched except for the following specifications:

1. Must meet all requirements listed in Appendix A.
2. Must retain the stock 3.48” stroke.
3. Engine displacement can be a maximum of 355 cubic inches.
4. Maximum engine RPM is 6200 rpm.
5. Maximum compression ratio is 10.0:1.
6. Maximum intake valve diameter is 2.00”, maximum exhaust valve diameter is 1.55”.
7. The camshaft may be replaced with an aftermarket model meeting the following specs:
 - a. maximum valve lift: .525”, intake and exhaust
 - b. duration at .050” lift: intake - 218, exhaust - 228
 - c. any hydraulic lifter allowed
 - d. 1.6:1 roller rockers are allowed
8. The oil pan is open, but the oiling system may not exceed a four-stage system (three scavenge stages and one pressure stage). Cosworth, Cosworth-style, Autoverdi, and Heineker pumps are not allowed.
9. Any carburetor may be used, but cars meeting all the specifications of Appendix B.16 may reduce their minimum weight by fifty (50) pounds.

Appendix F: “604 Circle Track” engine.

This is a readily available circle track crate engine that is based off the ZZ-4 Fast Burn 385 P/N 24502609. It is HIGHLY recommended that the oiling system be modified to enable the package to survive in a road racing environment. The engine must remain untouched except for the following specifications:

1. Must meet all requirements listed in Appendix A.
2. Must retain the stock 3.48” stroke.
3. Engine displacement can be a maximum of 355 cubic inches.
4. Maximum engine RPM is 6500 rpm.
5. Maximum compression ratio is 9.6:1.
6. Maximum intake valve diameter is 2.00”, maximum exhaust valve diameter is 1.55”.
7. The camshaft may be replaced with an aftermarket model meeting the following specs:
 - a. maximum valve lift: .474” intake, .510 exhaust
 - b. duration at .050” lift: intake - 208, exhaust - 221
 - c. any hydraulic lifter allowed
 - d. 1.6:1 roller rockers are allowed
8. The oil pan is open, but the oiling system may not exceed a four-stage system (three scavenge stages and one pressure stage). Cosworth, Cosworth-style, Autoverdi, and Heineker pumps are not allowed.
9. Any carburetor may be used, but cars meeting all the specifications of Appendix B.16 may reduce their minimum weight by fifty (50) pounds.

Appendix Z: “Restricted” carbureted engine.

If your engine does not fall into one of the categories listed above it may still be used as long as it meets the following specifications:

1. Must meet all requirements listed in Appendix A.
2. Engine displacement can be a maximum of 362 cubic inches.
3. Maximum intake valve diameter is 2.050 inches. Maximum exhaust valve diameter is 1.600 inches. No titanium valves are allowed.
4. The maximum engine compression ratio is 9.5:1.
5. Any carburetor may be used, subject to the following restrictions:
 - a. Restricted engines using a Holley 650 DBL pump, part #0-80541-1, as defined in Appendix B.16 will be limited to 7000 RPM.
 - b. Restricted engines using any other carburetor will be limited to 6500 RPM.
6. Any roller or flat tappet camshaft with a maximum lift of 0.550 inches (measured at the valve with 0 lash) may be used.
7. The oil pan is open, but the oiling system may not exceed a four-stage system (three scavenge stages and one pressure stage). Cosworth, Cosworth-style, Autoverdi, and Heineker pumps are not allowed.
8. Ignition systems may be OEM or electronic. No magnetos are allowed. The distributor must mount in the stock location. No ignition components may be located on the driver’s side of the chassis. The ignition(s) must have a soft touch rev limit chip set at a maximum of 6500 or 7000 rpm depending the carburetor being used (no variable and/or adjustable ignition systems are allowed). The soft touch system must be enclosed and have no interruptions or breaks in the wires en route to the distributor. All ignition wires connecting to the rev limiter(s), the ignition box(es), and the coil(s) must be readily accessible for inspection. No other wires may intersect or connect to those wires operation the ignition system(s) save for the ignition switch(es). If more than one ignition box is used each will be limited by a separate RPM rev limiter.