VARA RULE BOOK

PART TWO

Revised April 2012 with Class Additions

Revised April 2012 rules

TECH RULES AND CAR CLASSIFICATION

SECTION H: GENERAL VEHICLE APPEARANCE, SAFETY, and TECH

H.1 TECHNICAL INSPECTION/SCRUTINEERING

The entrant is responsible for the car being in racing condition. No car may enter the circuit at any event before being passed by a VARA Technical Inspector. Tech Inspectors may not tech their own cars. Technical inspections will be noted in the vehicle log book. A Tech Inspection form will be completed by the entrant for each event and presented to Tech for approval.

An entry coming to us without any prior documented motorsport and wheel to wheel or race car preparation experience must complete a minimum of 4 (four) VARA races, running all sessions and with no DNF's before applying for an Annual Tech for their car. The only exception will be if the car is substantially prepared by a race car prep shop that has demonstrated consistent and quality work to VARA Tech personnel.

As of January 2006, the annual "Car Eligibility, Safety and Classification Form" must be presented at either Annual Tech or at the first race of the season at which the car is entered. This is a requirement in order to obtain a "tech sticker" without which the car may not participate. This is an annual requirement and must be submitted at the beginning of every season. Receipt of this form will be noted in the vehicle log book.

Any technical deficiency or damage noted in the log book must be remedied, and approved by a Tech Inspector in the log book, before the car competes in another event. Any car that has received a mechanical black flag, or has sustained damage shall be inspected at Black Flag/Impound before further competition. A car in an accident will be given a thorough inspection before further race activity. Any damage to a vehicle will be noted in the logbook.

Chief Tech Inspector and/or Tech Chairman may require changes or modifications to improve safety of any car. Any Participant in disagreement with these requirements may appeal in writing to the BOD.

H.2 LOG BOOK

Vehicles without log books will be issued one after successfully completing the first tech inspection.

H.3 BATTERY

Must be securely installed and, if located in the cockpit, must be enclosed. All hot battery cable terminals shall be insulated.

H.4 BODY

Modifications such as add-on wings, flares, dams, cutouts, belly pans, and spoilers are not allowed unless specifically allowed in supplemental class rules. Cars should be as originally raced.

It is recognized that steel/factory type body parts are difficult to obtain for some cars. Body parts of fiberglass or other materials may be substituted without affecting classification if the car's weight is the same or more that of steel bodied cars. Substitution of fiberglass or other materials that results in reduced vehicle weight may result in re-classification into a faster class.

H.5 BRAKE LIGHT

There must be at least one brake light bright enough to be seen by other competitors in working order. Formula cars are exempted. Cockpit mounted switches to disable or turn on the brake lights are not allowed.

H.6 BRAKE SYSTEM

Updated dual master cylinders and braided steel flexible lines are recommended.

H.7 CATCH TANKS

There shall be securely mounted and adequate separate catch tanks of one quart capacity minimum for each for oil and water (if applicable). Tanks shall have a means to drain for easy draining of contents.

H.8 COOLANT

Water only! No glycol based coolants are allowed. Soluble water pump lubricants or water wetters are allowed.

H.9 HOSES, FUEL LINES, and DRAIN PLUGS

All hoses and lines shall be in good condition. They shall be mounted or secured so as to not be subject to abrasion, excessive tension nor easily damaged. No slip-on fittings are allowed for oil lines. All drain plugs shall be properly secured. Fuel line(s) running though the cockpit area must be one piece (no fittings) steel braided hose or steel tube except at front and rear bulkhead fittings.

H.10 ELECTRICAL CUTOFFS

All cars must have a clearly marked electrical master cutoff switch which completely cuts battery power to the car and shuts off engine. Switch must be located so as to be easily accessible to corner workers. It is strongly recommended that the switch also be located so as to be within easy reach of the driver as well.

H.11 FIRE PROTECTION

All cars must be equipped with an on board fire system designed for use in race cars. Actuation can be mechanical or electrical and must be within easy reach of the belted in driver. Installation must follow the manufacturers instructions with particular attention to mounting orientation and nozzle locations.

Halon or FE36 systems must be a minimum of 5 pound bottle and use no more than 2 nozzles. There shall be one nozzle directed toward the engine and one directed toward the driver. 10 pound systems may use a third nozzle at the fuel cell.

AFFF systems (aqueous foam) must be a minimum of 2.3 liters with two nozzles. There should be one nozzle directed toward the engine and one directed toward the driver.

H.12 FIREWALLS

Except for certain Formula Cars, a firewall must be provided between cockpit, engine, and fuel tanks.

H.13 FUEL CELLS

An FIA FT-3-1999 or higher rating approved road racing type fuel cell, properly mounted, with a non-vented filler cap and check valve in the venting system, is required for all cars. This requirement includes a flexible bladder filled with foam in a metal enclosure. Vent lines shall terminate outside of and below the car body.

H.14 MIRRORS

All cars must be equipped with one or more mirrors mounted to provide an adequate view to the rear.

H.15 NUMBERS

Race numbers are assigned for a full season upon receipt of entries for the first event of the year. Effort will be made to honor requested numbers on a first-come, first-served basis. The assigned number must be displayed at least ten inches tall and one inch wide on each side of the car, and at least 6” tall on the front of the car. Car class and group designation shall be displayed on each side following the car number. Numbers must be in place for Technical Inspection and must be of a design and contrast to be legible to officials from either side of the track.

H.16 RACE CAR APPEARANCE

Cars must be clean and tidy, with no body damage. They must be painted and not in primer. Engine and chassis must be clean and free of dirt and oil.

H.17 ADVERTISING

Advertising on cars should be in the character of the car's vintage. A VARA decal is required to be displayed on each side of car. (decals are free from VARA)

H.18 ROLL BAR

Roll bars are required on all postwar cars. (Roll bar requirements for specific historic cars may be waived by application to the Technical Committee.) The roll bar shall be higher than the driver's helmet when seated in the car. Roll bar design and construction is the entrant's responsibility, but it is strongly recommended they be designed and constructed to current SCCA or equivalent standards. The Chief Technical Inspector and/or Tech Chairman may deem a roll bar or rollover structure unfit for competition. There must be a padded head restraint within 6 inches behind the drivers head.

H.19 SAFETY BELTS/HARNESSES

Three inch lap belts are required in all cars. Additionally, all cars with roll bars require a five or six point harness, with minimum widths of two inches for shoulder harness and submarine strap(s). They must be secured to the body frame with suitable reinforcement plates and clip type ends must be pinned. Attachment to seat frame is not acceptable. Y belts for shoulder straps are not acceptable. Shoulder belts must be attached to separate mounts. Anti-submarine strap(s) must be installed so as to prevent forward movement of the driver. Belts shall be dated and belt webbing must be in good condition. Re-webbing is required every five (5) years.

H.20 SEATS

Seats shall be suitable for competition and securely fastened.

H.21 SUSPENSION AND STEERING

No excessive wear is allowed. Crack-testing is highly recommended and may be required on some cars.

H.22 THROTTLE SPRINGS

There shall be at least two external throttle return springs attached in a manner to fully close the throttle plates.

H.23 TOWING

An eyebolt or equivalent shall be provided on front and rear of car for towing. The roll bar on open cars will suffice.

H.24 UNDERTRAYS

Any car equipped with undertrays must have drain holes so as not to trap fluids.

H.25 TRANSPONDERS

To be scored each car must be equipped with a AMB transponder which is compatible with the VARA timing system. For transponder information contact the VARA office. Cars without a transponder may participate but will not be scored.

SECTION I: CAR CLASSIFICATION RULES

I.1 GROUP 1 PRODUCTION CARS (as they were raced in the day)

(See Section I.1A GENERAL PRODUCTION CARS for regular production car classifications)

The intent of Group 1 is to present exceptional examples of well-prepared cars, faithful to their period. Appearance and authenticity will be taken into consideration. Cars wishing to run in Group 1 will need to petition the Group 1 Committee for consideration.

Group 1 Guidelines

Cars should be essentially as manufactured with a factory exterior appearance. Preparation level is intended to not preclude returning the car to street use. All production and sedan classes shall have a group 1 counterpart. We strongly encourage participants interested in limited prep and/or economical vintage racing to consider group1. Group 1 will include cars produced through 1972.

Tires

Same requirements as production classes.

Wheels

Same requirements as production classes.

Headlights and Turn signals

May be removed. However, must retain original trim and location to simulate original appearance. Openings must have metal covers. Stop lights must work.

Windshield wiper assembly, horn, heater

May be removed or be inoperable

Glass

Open cars may remove the windshield if removable without cutting the "A" pillar. All cars may remove door glass and door glass frames. Side glass may be replaced with Plexiglas. Exterior window trim should remain stock in appearance. Glass or OEM rear window must be installed.

Suspension

Stock location and geometry including sway bars, shocks, springs etc. After market sway bars may be used. Springs and shocks must be stock type and configuration. Poly bushing may replace rubber. No rod ends on suspension locating joints and no added devices except as noted. One bolt in strut brace is allowed.

Transmission

Same number of speeds as year of manufacture; OEM gear ratios, synchronizers as manufactured in OEM case.

Differential

Any OEM ratio & any limited slip OK. No welded differentials.

Brakes

Must be same type as manufacture date; dual master cylinder is recommended. Rotor and drum diameter shall be as manufactured. Calipers shall be as manufactured. Pads and shoes are free.

Engine

Same type/size as year of manufacture (0.060" overbore limit).

Period correct roller rocker arms are ok. No stud girdles. Compression Ratio is limited to 10 to 1 maximum unless it can be documented as higher from the factory as delivered for street use. Block and heads must be OEM and period correct. No aluminum flywheels. No dry sump oiling systems unless originally sold as such. Oil coolers and radiators are free but must not conflict with stock type appearance of body.

Clutch

Free except must be OEM type/size clutch and flywheel.

Carburetion

Stock carb size and make per model series (same mfg & venturi count). No Weber DCOE sidedrafts where not originally equipped.

Intake manifold

must be OEM or correct aftermarket for year, model, and engine. After market manifolds must have same configuration (size, length, material etc.) as factory manifold.

Engine ignition

Must be through distributor (no crank fired ignition).

Charging system

Must be functional (alternator or generator).

Headers and mufflers

Free

Steering wheel

Diameter may be changed.

Racing seat

For driver highly recommended. Passenger seat may be removed.

Interior

Headliner, floor carpets and rear seat may be removed. Removal of certain parts/panels for roll cage installation is acceptable. Recommend asking Tech Chairman prior to modification. Interior door panels may be modified to accommodated door bars. Effort should be made to maintain a "factory" appearance.

Safety

All safety requirements are same as other production classes. Safety must not be compromised for cost or originality. Full roll cage is highly recommended.

Bodywork and Interior:

Must be same material, shape, and design as original. Mustang cannot run "R" front valance or "R" rear window. "S" trim is ok. Dash must be stock type or OEM optional. Additional gauges may be added. Fuel cell should be in same general location as stock gas tank. Spare tire may be removed.

I.1A GENERAL PRODUCTION CARS

Additional supplemental rules may be applied to individual classes.

This classification is intended to include cars as raced in the USA up to and including 1972. Cars produced after 1972 but of the same model and specification as a pre-1973 model are also eligible.

See Section I.1B (below) for Production Cars 1973 and later.

VARA allows for cars to be prepared to a set of rules listed by a historically recognized competition sanctioning body (such as SCCA GCR, FIA, IMSA and monoposto rule books) whose rules are accepted by the VARA board of directors for racing in production and GTclasses for any year through the end of 1979 . It is not possible for VARA to publish rules that will accurately define the period authenticity for all eligible cars. It is therefore the responsibilty of each competitor to research the proper period specification for his car and to present it as such, and declare the Point in Time (year) of their car preparation in the Elligibility Form. VARA will accept the VMC Vintage Motor Council consensus to accept the Historical make and model regulations as listed by SVRA. (Newly added)

1. The body and configuration must be as originally manufactured and/or raced and shall be neat and clean. This applies to the outside, engine compartment, and cockpit areas. Non original supplemental aerodynamic devices, such as spoilers, air dams, belly pans, and wings are not permitted unless specifically permitted by supplemental class rules. Flared fenders and/or body widening are not allowed unless this is original period race configuration (in the USA) or specifically allowed by

supplemental class rules. Fiberglass panels that duplicate factory may be substituted; however, this may affect classification.

2. Interiors will be neat and finished. Supplementary gauges are allowed, but must be neatly mounted. The driver's seat may be replaced with a racing type seat. Passenger seats are optional. Loose carpeting must be removed. Windshields and other glass may be replaced with an approved material.
3. Bumpers may be removed. If lights are removed, the openings must be covered. Ducting through the headlight openings for any purpose is prohibited.
4. Historically significant markings are encouraged.

Use of lightweight body panels

It is recognized that steel/factory type body parts are difficult to obtain for some cars. Body parts of fiberglass or other materials may be substituted without affecting classification if the car's weight is the same or more that of steel bodied cars. Substitution of fiberglass or other materials that results in reduced vehicle weight may result in re-classification into a faster class.

Engine

Original type and manufacture. Must declare accurate displacement in c.c.'s or cubic inches. Block and head material and stroke must be as original design. Stroker cranks are prohibited. Internal engine components are free. No late production heads allowed (i.e. SVO or slant plug Chevy small blocks). After market aluminum or cast iron heads (World, Dart or OEM) which closely match original specifications **may be allowed depending on class rules.** Ignition may be upgraded to electronic type with distributor except no crank fire ignitions allowed. Rocker arms are free. Lubrication is free. Engines may be over bored a maximum of .060".

Transmission

Must be the same type and size as manufactured in the vehicle, including number of forward speeds. After market and replacement gear sets are acceptable (i.e., Leeson, Quaiffe, Webster, etc.).

Differential

Must be same as originally manufactured, but ring and pinion ratios are open. Type of limited slip is open (i.e. Salsibury, cam & pawl, etc.)

Suspension

Original attachment points are required. Sway bar(s) may be added and rates are free. Springs must be stock material and type, but rate and height are free. Solid bushings are permitted to replace rubber.

Brakes

Braking systems must be of the same type as were standard for the year of manufacture, or were homologated by the original manufacturer. Updating or backdating within a range (body type) of production years is allowed. Dual master cylinders highly recommended.

1. After market brake calipers are prohibited.
2. Lining materials are free.
3. Brake ducts are permitted as long as ducts are not visible from the outside of the car and external scoops are not added to the body. Ducting may not pass through the driver's compartment.

Wheels

Up to one and one-half inches over width as manufactured and a one inch increase or decrease in diameter is permitted unless otherwise specified in supplemental class rules.

Tires

Nothing less than 50 series aspect ratio D.O.T. treaded tires will be allowed. Tread should approximate rim width. The minimum tread depth is 1/16", with no visible defects. Tires must be treaded at time of manufacture. Hand grooving is not allowed. Tires must fit within the body envelope.

PRODUCTION MODIFIED

see Vintage GT classes under Section I.6 GT CLASSES

PRODUCTION "P" CLASSIFICATION

Guideline list for cars through 1972:

AP

- Cobra 427
- Cobra 289 with Webers
- Corvette "big block"
- Corvette Gran Sport
- Shelby GT500
- AMX 390
- 1968-1972 Corvette 427
- 1968-1972 Boss Mustang 429

BP

- Corvette 327
- Cobra 289
- Shelby GT350
- Jaguar XKE
- Sunbeam Tiger
- 1968-1972 Corvette small block

CP

- Alfa GTZ
- Corvette up to 1962 with 327
- Datsun 240Z 2.4 liter
- Ginetta G4 1500cc pushrod
- Jaguar all except XKE
- Lotus Elan 1558cc
- Lotus S7 1600cc pushrod
- Morgan Super Sport
- Porsche 904 2 liter
- Porsche 914-6 2 liter
- Porsche 911 2 liter

DP

- Alfa Spider up to 2 liter
- Corvette up to 1960 with 265 or 283ci
- Daimler V-8
- Datsun 2000
- Elva Courier with B type engine

Fiat 124 spider up to 2 liters
Ginetta 1300cc
Lotus 7 1500cc ohv, pre-crossflow
Porsche 914-4 up to 2 liter
Porsche 912 up to 2 liter
Turner 1500cc ohv
Triumph GT6
Triumph TR6/TR250
Triumph TR4/4A
Triumph Spitfire 1300 and 1500cc
TVR 1800
Volvo P1800 up to 2 liter

EP

Alfa Spider 1600cc
Alfa Duetto 1600cc and 1750cc
Austin Healy 100-6/3000
Austin Healy Sprite 1275cc
Elva Courier 1622 original type engine
Fiat 124 spider up to 1688cc
Ginetta 1000cc
Lotus Europa 1470cc
MGB/MGB GTMGA with B engine
MG Midget 1275cc
Morgan +4 up to 2.2 liter
Porsche 912 up to 1725cc
Porsche 914-4 1700cc
Porsche 356 up to 1725cc
Sabra 1500cc
Triumph TR2/3 2200cc
TVR 1622cc
Turner 1500 with single downdraft, non cross-flow
Volvo P1800 1800cc

FP

Arnolt/Bristol
Alfa Guila 1600cc with 4 wheel drum brakes
Alfa Giulietta Spider 1300cc
Austin Healy 100-4
Datsun 1500 & 1600 roadster

Lotus 7 America 948cc & 997cc

MGA 1622cc & twin cam

Morgan 4/4 MKV

Porsche 356 up to 1600cc with drum brakes

Sunbeam Alpine 1725cc

Triumph Spitfire 1147cc

Triumph TR2/3 2000cc

GP

Abarth OT1000

Abarth Berlina Corsa 982cc/1050cc

Alfa Giulietta 1300 with 4 wheel drum brakes

Austin Healy Sprite 1098cc

MG Midget 1098cc

Mini 1098/1071cc

Morris Minor 1098cc

NSU TT 1100cc

Porsche 1300

Sunbeam Alpine 1592cc/1494cc

Turner 950S

VW Karmman Gia and Bug 1200cc

HP

Austin Healy Sprite 948cc

BMW 700

Fiat Abarth 750cc/850cc

Fiat 850 sedan and spider 850cc/903cc, Fiat 1200 spider

MG TC/TD/TF

Mini 850/998

NSU TTS 996cc

Panhard sedans

Saab 850 sedans 850cc/998cc

Sunbeam IMP

I.1B GENERAL PRODUCTION CARS 1973 to 1980

Designated ( )P-GT for cars 1973-1980., and will follow the rules based on the 1980 SCCA GCR. Earlier (pre 1972) cars with modifications such as flares and headlight air vents allowed by this point of time will be allowed in the Production GT classes as well as the later year cars that are covered in the SCCA GCR.

AP-GT

BP-GT

CP-GT

DP-GT

EP-GT

FP-GT

GP-GT

HP-GT

A SEDAN

Included are 1972 and earlier cars eligible for SCCA AS class or TransAm. Use the 1972 Edition SCCA GCR for rules.

AMC Javelin
Chevrolet Camaro
Chevrolet Nova
Dodge Dart
Ford Mustang
Ford Falcon
Mercury Cougar
Plymouth Barracuda

B SEDAN

Included are 1972 and earlier cars eligible for SCCA BS class and TransAm. This list may not include every possible eligible car.

Alfa Romeo Sedans up to 2 liters
Alfa Romeo GTA
Audi 100
AMC Gremlin
BMW 1600 and 2002
BMW 2500 sedan
Chevrolet Vega
Datsun 510 and 610 up to 1800cc
Fiat 124 Sport Coupe
Ford Cortina and Lotus Cortina up to 1800cc
Ford Escort
Ford Capri up to 2 liter
Ford Pinto up to 2 liter
Mazda RX-2 and RX-3 non-bridgeport motor
Opel Kadett and Manta 1900cc
Toyota Celica
Triumph T2000, 2.0 Vitesse, 2.5 PI saloon
Volvo sedans up to 2 liter

C SEDAN

Alfa Romeo Giuila sedan and GTV up to 1600cc
Alfa Romeo GTA Junior 1300
BMW2002/1600 2000cc single 2 barrel downdraft or 1600cc Weber carbs
BMW 1800/2000 (4 door) 2000cc single2 barrel downdraft or 1800cc Weber carbs
Datsun 510 1800cc single 2 barrel downdraft
Datsun 510 1600cc Weber carbs
Ford Cortina up to 1600cc pushrod
Mini up to 1381cc max
Volvo Sedans 1800cc with Webers or 2000cc with 2 barrel downdraft

D SEDAN

BMW 1600 1600cc single 2 barrel downdraft

BMW 1800 (4 door) 1800cc single 2 barrel downdraft
Datsun 510 1600cc single 2 barrel downdraft
Mini Cooper S 1275cc
Morris Minor 1275cc
Volvo P544 1600cc

I.2 FORMULA CARS "F" CLASSIFICATION

Cars must compete as they were originally configured and raced.

Specific rules for Formula Ford, Formula V and others are contained in SECTION J: SUPPLEMENTAL CLASS RULES.

F1 FIA Formula 1 cars, mid engine.

F2 2000 cc, mid engine, FI, no ground effects.

F5000 5000 cc stock block.

INDY Indy cars through 1978.

FA Formula Atlantic 1600cc, no ground effects, through 1979.

FSV I Formula Super Vee (1600cc),air-cooled, no ground effects, treaded tires, no wings, through 1976

FSV II Formula Super Vee (1600 cc), water-cooled & air cooled up to 2000cc, no ground effects, through 1978

FSV III Formula Super Vee (1800 cc) with ground effects , through 1986.

FB 1600cc, with two valves/cylinder, treaded tires, no wings, through 1969.

FC 1100cc, treaded tires, through 1963, also F3 1000cc, through 1968.

FD 1100cc, front engine location, through 1965

FV VW based, 1200cc through 1972

FF Formula Ford through 1972

CF Club Ford 1973-1983; outboard shocks one end, second generation FF

FF-N FF later than 1983

I.3 SPORTS RACING Two Seat Racing Cars

These classifications are guidelines only, cars may be reclassified either for a single event or for the season, depending upon observed performance. If you are not satisfied with your classification, you must make a request in writing to the Eligibility Committee.

Super-sports "s/s" Sports Racing cars on slick racing tires. Wings permitted

SSA.1 Over two liters, 1969 to 1974

SSA.2 Over two liters, through 1968

SSB Under two liters, through 1974

Sports Racers "SR" on treaded tires. No wings

ASR 1960-1968 Over 2 Liters

BSR 1955-1959 Over 2 Liters

CSR 1961-1968 under 2 Liters

DSR Up to 1954 over 2 liters, up to 1972 up to 1550cc, up to 1960 under 2 liters

ESR Up to 1972 up to 1100cc

H-Mod Under 850cc, through 1965.

Later years sports racers

RSR Renault Sport Racers thru 1985

CS2 2.0L Sports Racers thru 1985; Club Sport 2000, suspension ends outboard

S2 2.0L Sports Racers post 1985: Sports 2000, suspension ends inboard/outboard

WSR Toyota MR2 based Sports Racer

I.4 HISTORIC (Pre-War)

Pre-War sports and race cars are especially encouraged. This class may also include postwar examples in some cases.

Entries of special interest will be individually reviewed to promote their participation in competition. Historic cars will be run in VARA classes commensurate with their performance potential, and receive competition points and awards as the Historic winner in the particular class. Examples: All pre-war cars, Morgan 3 Wheelers, Alfa Romeo Monza, MG T/C etc

I.5 EXHIBITION CLASS "X" CLASSIFICATION

The Exhibition Class is designed to allow cars with significant race history to compete in a group not consistent with VARA's traditional class structure, with no definite year of manufacture cut off. Examples would be one of a kind specials or continuation cars.

Tires and other equipment should be as raced in period. All VARA General Vehicle Safety Standards will be adhered to.

Acceptance is by application, with approval by the VARA Classification Committee and the recommendation of the Race Chairman. Exhibition car acceptance is on a race by race basis.

Exhibition cars will show in official race results but shall not accrue championship points.

The Exhibition class is not intended for the purpose of allowing cars which are not eligible, due to year of manufacture or other, to race with VARA.

The "X" designation is also used in the case of two drivers sharing the same car in a race weekend, and will be used for the second driver if they are entered in a lower class than the rules specify.

I.6 GT CLASSES (Newly Added)

Provisional Rules for IMSA, FIA, Trans Am "GT" Cars

This Group consists of select GT Sports Cars and Sedans as raced up to 1999. Such as IMSA, FIA-GT, Trans Am, SCCA GT classes, and other professional race cars as raced in recognized pre-2000 racing series. These cars are prepared as all out race cars with tube or semi-tube chassis. We anticipate any car of this type eligible for SVRA Group 10 will be welcome at VARA.

All cars must have been built or modified so as to compete in a recognized pre year 2000 racing series. Some exceptions may be made upon specific approval of VARA. It is the responsibility of the competitor to identify the series the car competed in and prepare it accordingly.

Initially this GT group will be divided into the following classes. This will be reviewed from time to time based on experience and entries.

GTP Prototype Cars

GTO Production based cars over 3-liter engine and all forced induction cars

Weight rules are based on 1984 IMSA code. Weight without fuel and driver. Examples;

Overhead cam engines; 2.8L = 1944# 3.0L = 2083# 4.0L = 2370#

American V6 & V8 ; 4.5L = 2097# 5.0L = 2192# 5.7L = 2337# 7.0L = 2510#

GTU Production based cars up to 3-liter engine

Weight rules are based on a sliding scale car weight/displacement.
4 cylinder pushrod 2 valve: .7 #/c.c.
Other 2 valve conventional engines: .8#/c.c.
Rotary engines (carbureted): .9#/c.c.
4 valve conventional engines 1.0#/c.c.
Minimum weight 1600 pounds
Full tube frame cars add 100#
GTU cars which are under weight may run in GTO at the appropriate GTO weight.

GTL Production based cars up to 2 liter engine

Note: These provisional rules are loosely based on SVRA group 10 rules, but the SVRA rules should not be construed as the specific rules for this VARA group. These provisional rules may be changed, or amended at anytime as we gain experience with these cars.

Provisional Rules for Vintage GT Classes

VARA vintage production cars (mfg before 1973) that are over modified or have over size engines will be placed in the Vintage GT Classes. Cars built after 1972 with the same chassis as an earlier model will be included in this group.

Examples: Datsuns, Porsches and Mazdas with oversize engines.

These cars must use DOT tires.

Period correct air dams and small period correct rear spoilers are allowed. No splitters, wings or other aero devices.

Initially the Vintage GT group will be divided into the following classes. This will be reviewed from time to time based on experience and entries. Some cars entered may not fit into these classes, thus these cars will be classified as GTX.

GTO Production based cars over 3 liter engine and all forced induction cars

GTU Production based cars up to 3 liter engine

GTL Production based cars up to 2 liter engine

Note: Production Cars manufactured after 1972 covered by SVRA Group 10 may be placed in VARA's Club Racing run group and must conform to the rules pertaining to that group.

SECTION J: SUPPLEMENTAL CLASS RULES

The supplemental class rules in this section either modify and/or go beyond the normal VARA rules in Section I.1A GENERAL PRODUCTION CARS. These include:

Section J1 A Production
Section J2 B Production
Section J3 B Sedan
Section J4 C Sedan
Section J5 C Production
Porsche
Datsun 240Z
Lotus Elan
Ginetta
Section J6 S2 and CS2 Sports Racers
Section J7 WSR; World Sports Racer
Section J8 Formula Ford
Section J9 Club Formula Ford
Section J10 Formula Vee; Vintage, FV1 and FV2
Section J11 CR; Club Racing Group

J.1 A PRODUCTION

Engine: Ford and Chevrolet

Maximum engine displacement – 427 cu in and .060" overbore. Stroke must be as manufactured.

Production heads must be of original material as manufactured through 1972. Cast aluminum and iron aftermarket heads (World, Dart, or OEM) which closely match the original specifications may also be allowed.

Camshaft, rocker arms and engine lubrication are free.

Dual plane manifolds only except 289 Cobra with Webers and the Grandsport Corvette

Wheels:

Maximum 15" x 8.5" front and 15" x 9.5" rear

Tires:

Tires must fit within the original bodywork. Tires size 800 x 15 maximum or Hoosier TD – front 26.5x9.5x15, rear 25.5x10x15 or radial in 275x50x15

Differential:

Aluminum housings are not permitted. Axle housings may not be cambered. Gear ratio and type of limited slip are free.

Body Work:

Door glass and mechanisms may be removed. Windshield may be removed on roadsters. Period correct flares are allowed.

J.2 B PRODUCTION

Engine:

Max displacement – Ford 302 cu in, Chevrolet 327 cu in, Jag XKE 4235cc. All cars .060" overbore. Stroke must be as manufactured.

Cylinder Heads:

Ford and Chevrolet must use cast iron heads manufactured through 1972, Jaguar XKE production type only. Cast iron aftermarket heads (World, Dart, or OEM) straight plug, 23 degree valve angle, no stud girdles. If not sure about your head, ask talk to your class representative before spending your money to make questionable alterations.

Intake Manifolds:

Dual plane manifolds only, no single plane manifolds permitted. After market dual plane manifolds are ok. Contact your class representative if you are not sure about your application.

Camshaft:

Flat tappet cams only, no rollers. Roller rockers are allowed.

Oiling systems:

Wet sump oiling systems only. Dry sump systems are not permitted.

Wheels:

BP1- 15"x7" max, BP 15"x8" max. Tire and wheel must fit within the unaltered original bodywork.

Tires:

Maximum tire size: 235-60-15. Permitted tires are 215-60-15 Hoosier radial, 225-60-15 Hoosier bias, or 600-15 Goodyear. No Hoosier metric 25.5 or 26.5 or 26.5 tires are permitted. Any other tires must be approved. All tires must fit under unaltered original bodywork.

Brakes:

OEM equipment required for all brake configurations, however, drilled and slotted aftermarket rotors are permitted providing OEM dimensional characteristics are retained. Two piece rotors and aftermarket calipers are not permitted.

Differential:

Aluminum housings are not permitted. Axle housings may not be cambered. Gear ratio and type of limited slip are free.

Transmissions:

Stock type required. Transmissions must utilize synchros, no dog ring configured transmissions are permitted. No Jerico or other similar aftermarket transmissions are permitted. Contact your class representative if you are not sure about your application.

Body Work:

Door glass and mechanisms may be removed. Windshield may be removed on roadsters. No flares are allowed.

J.3 B SEDAN

The goal of the B-Sedan class is to provide safe, fun and fair competition in period correct cars meeting VARA's eligibility standards. These rules are intended to be a guideline to acceptable "period correct" modifications. For period-correct, the rules should be interpreted as "what was available to all racers in the USA prior to 1973". "Stock" is defined as what was sold to the general public through the factory dealerships in the USA during the correct time period.

1. Cars eligible for the B Sedan class are listed in the VARA Car Classification Guidelines.
2. Car preparation and safety standards are regulated in accordance with the VARA production car and safety rules, subject to the specific provisions in these Supplemental Rules.

Chassis, Coachwork and Suspension:

1. A front spoiler may be mounted below and to the rear of the bumper location. No rear spoilers or wings allowed.
2. Both front and rear bumpers may be removed.
3. Period correct fender flares are allowed (not "Box" flares).
4. Fiberglass hood and trunk lids allowed (no carbon fiber, etc.).
5. Lexan windshield and Plexiglas side and rear windows allowed.
6. Wheel rim width 7 inches maximum, wheel diameter per VARA rules; 1" larger diameter than stock is allowed.
7. Maximum tire width 205mm. Tires must be DOT approved treaded tires. Profiles down to and including 50 series tires are allowed.
8. Track may not change more than ½ inch from stock measured on a horizontal plane through the hub centerline.
9. Suspension joints; spherical bearings and/or rod ends are allowed for sway bar end links, upper front strut bearings, panhard rod, and front tension control rods only. Other suspension bushings may be replaced by urethane bushings.
10. Factory suspension control arms must be used. Reinforcement of suspension control arms for safety is allowed.
11. Adjustable camber is allowed.
12. Spring perch height may be adjustable.
13. Quick-change or knock off-wheels are not allowed.
14. The wheelbase of the automobile may not be changed or relocated.

15. Suspension type (McPherson strut or coil spring/shock combination) must be as originally provided on vehicle.

Engine and Drivetrain

1. Maximum overbore is .060" (per VARA standard).
2. Any distributor may be used so long as no engine modifications are required. Any ignition may be used except crank fire ignition systems, which are not allowed.
3. Valve springs, keepers, and retainers are free. No alteration of the valve centerlines allowed. Titanium valves are prohibited. Valve diameter may be maximum of 2mm larger than stock.
4. Roller cam followers are not allowed unless stock for production cars.
5. Limited slip or locked differentials are allowed. Original OEM case is required.
6. Brake and clutch pedals and hydraulic cylinders are free.
7. Transmissions must have same number of forward speeds as originally offered, with a maximum of 5 forward speeds and functioning reverse. Sequential gearboxes are specifically forbidden. Stock diameter flywheel is required. Transmissions must have OE case and internals (synchromesh). Clutch and pressure plate must be single disc design. Dog ring transmissions are allowed with a 75 pound weight penalty.
8. Carburetors are free up to a maximum of 48mm Webers and 50mm Mikuni/Solex.
9. No changes to the internal or external coachwork to accommodate installation of the induction system are allowed.
10. Only pre-1973 model year engine configurations and displacements available for sale in the USA are acceptable. Displacement and engine configuration must be correct for chassis type as sold in the USA.
11. Cylinder heads must be Original Equipment and for USA production cars. Porting is allowed. Material may not be added to cylinder heads.
12. Charging system, either generator or alternator, must be intact and functioning.
13. Radiators are free but must be in approximately stock location.
14. Crankshaft must be OEM for production cars, but may be modified. Stroke must be same as stock for engine.
15. Engine and/or transmission must be in stock location and may not be repositioned to alter weight distribution.
16. Cars that were equipped with fuel injection when sold new may use fuel injection. And must use same make & model of fuel metering and/or fuel distribution unit.
17. Rotary engines –Bridgeported engines are not allowed.

Brakes

1. Brake discs, calipers and/or drums must be period correct.
2. Substitution of dual master cylinders and pressure adjusting devices are allowed.
3. Relacement or removal of brake booster systems is allowed.

Minimum Car Weight

1. In addition to above rules, minimum weight will be enforced for all BS cars.
2. Weight minimum will be with driver, without refueling, following a race or qualifying.
3. Cars may be weighed immediately following any race or qualifying period, prior to returning to the paddock.
4. Minimum weight will be calculated by multiplying nominal displacement in cc's [i.e. 1600, 1750, 1800 or 2000] by 1.10. i.e. 2000cc x 1.10 = 2200 lb.

5. Cars with rotary engines will be considered to have displacement of twice the working capacity of the chamber.
6. Cars with an overbore of .080" will use the following formula: multiply actual displacement in cc's by 1.10. Example: .080" over 1800=1855cc x 1.10 = 2041 pounds.

Modified Cars

1. Per VARA's current rules - Cars modified beyond these B sedan rules will be run in the appropriate GT class.
2. This is not intended as a free license to modify cars.
3. To qualify for GT class, cars must adhere to GT Rules.
4. Underweight cars must meet displacement rules. Cars not meeting displacement rules must meet weight rules.

Rules Enforcement

Enforcement of these rules will be the responsibility of volunteers from within the class.

Any driver/entrant discovered to have non-conforming modifications or to not comply with maximum bore/stroke regulations, shall lose any points earned at the event where the discovery is made. A second incident of non-conformity shall result in the loss of all points accumulated for the season up to and including the event at which the discovery is made.

Any driver refusing to allow engine inspection or weighing of his/her car shall be deemed in violation of these rules. The penalty for such refusal shall be disqualification from the event at which the refusal takes place and loss of all points for the season to date.

Any car found to be underweight after qualifying shall start from the back with the proper weight added. Any car found to be underweight after a race shall not receive any points for the weekend. If a car is found to be underweight at a second event, all points for the season shall be forfeited up to and including the event at which the discovery is made.

J.4 C SEDAN

The goal of the C Sedan class is to provide safe, fun and fair competition in period correct cars meeting VARA's eligibility standards. These rules are intended to be a guideline to acceptable "period correct" modifications. For period correct, the rules should be interpreted as "what was available to all racers in the USA prior to 1973".

Cars eligible for the C Sedan class are listed in the VARA Car Classification Guidelines. Additional cars may be added from time to time to accommodate event entries and member requests.

Car preparation and safety standards are regulated in accordance with the VARA production car and safety rules, subject to the specific provisions in these Supplemental Rules.

"Stock" is defined as; what was sold to the general public through the factory dealerships in the USA during the correct time period.

Chassis and Bodywork

1. A front spoiler may be mounted below and to the rear of the bumper location. No rear spoilers or wings allowed.
2. Both front and rear bumpers may be removed.
3. Small period correct fender flares are allowed (not "Box" flares).
4. Fiberglass hood and trunk lids are allowed but not other body parts. No carbon fiber allowed.
5. Lexan windshield and Plexiglas side and rear windows allowed.
6. No changes to the internal or external coachwork to accommodate installation of the induction system are allowed.

Suspension, Wheels and Tires

1. Wheel rim width 6 inches maximum, wheel diameter per VARA rules - 1” larger diameter than stock is allowed
2. Maximum tire width is 205mm. Tires must be DOT approved treaded tires. Profiles down to and including 50 series tires are allowed.
3. Track may not change more than ½ inch from stock measured on a horizontal plane through the hub centerline.
4. Suspension joints; spherical bearings and/or rod ends are allowed for sway bar end links, upper front strut bearings, and panhard rod, only. Other suspension bushings may be replaced by urethane bushings.
5. Factory suspension control arms must be used. Reinforcement of suspension control arms for safety is allowed.
6. Suspension pickup points may not be moved except for minor slotting to adjust camber and toe.
7. Adjustable camber is allowed.
8. Spring perch height may be adjustable.
9. Quick-change or knock off-wheels are not allowed.
10. The wheelbase of the automobile may not be changed or relocated.
11. Suspension type (McPherson strut or coil spring/shock combination) must be as originally provided on vehicle.

Engine

1. Maximum overbore is .060” (per VARA standard), subject to the minimum weight regulations listed below.
2. Only pre-1973 model year engine configurations and displacements available for sale in the USA are acceptable. Displacement and engine configuration must be correct for chassis type as sold in the USA.
3. Cylinder heads must be OE for USA production cars. Porting is allowed. Material may not be added to cylinder heads.
4. Crankshaft must be OEM for production cars, but may be modified.
5. Stroke must be same as stock for engine used.
6. No dry sump lubrication allowed unless originally factory equipped.
7. No electrically driven water pumps.
8. Charging system, either alternator or generator, must be intact and functioning.
9. Any distributor may be used so long as no engine modifications are required. Any ignition may be used except crank fire systems which are not allowed. Ignition must be triggered by a distributor.
10. Valve springs, keepers, and retainers are free. No alteration of the valve centerlines allowed. Titanium valves are prohibited. Valve diameter must be stock.
11. Roller cam followers are not allowed unless stock for production cars.
12. Carburetors must be type and number per eligibility list.
13. 2 barrel downdraft carbs are limited to a maximum barrel size of 38mm. Example; Weber 38DGV.
14. Side draft carburetors are limited to maximum choke (venturi) of 34mm and maximum barrel (body) size of 45mm. Example; Weber 45DCOE with 34mm chokes. No motorcycle carburetors.

Drivetrain

1. Limited slip or locked differentials are allowed. Original OEM case is required.
2. Brake and clutch pedals and hydraulic cylinders are free.

3. Transmissions may have a maximum of 5 forward speeds and functioning reverse. Transmissions must have OE case and internals (synchromesh). Sequential gearboxes and "dog" boxes are specifically forbidden.
4. Stock diameter flywheel, pressure plate and clutch disc are required. Clutch and pressure plate must be single disc design.
5. Radiators are free but must be in approximately stock location.
6. Engine and/or transmission must be in stock location and may not be repositioned to alter weight distribution.
7. Rotary engines are not allowed.

Brakes

1. Brake discs, calipers and/or drums must be period correct.
2. Substitution of dual master cylinders and pressure adjusting devices are allowed.
3. Replacement or removal of brake booster systems is allowed.
4. No rear discs on cars originally equipped with drums.
5. Brake disc diameter to remain stock.

Minimum Car Weight

Minimum weight will be 2000 lb at end of session without driver for all cars except BMC Mini's. Minimum weight for the Mini is 1400 pounds. Weights of other cars may be determined as required.

Modified Cars

1. Per VARA's current rules, cars modified beyond these C sedan rules will run in the GT classes.
2. This is not intended as a free license to modify cars.
3. To qualify for GT classes, cars must adhere to coachwork rules.
4. Underweight cars must meet displacement rules. Cars not meeting displacement rules must move to B Sedan.

Rules Enforcement
Enforcement will be the responsibility of volunteers from within the class.

Any driver/entrant discovered to have non-conforming modifications or to not comply with maximum bore/stroke regulations, shall lose any points earned at the event where the discovery is made. A second incident of non-conformity shall result in the loss of all points accumulated for the season up to and including the event at which the discovery is made.

Any driver refusing to allow engine inspection or weighing of his/her car shall be deemed in violation of these rules. The penalty for such refusal shall be loss of all points for the season to date.

Any car found to be underweight after qualifying shall start from the back with the proper weight added. Any car found to be underweight after a race shall not receive any points for the weekend. If a car is found to be underweight at a second event, all points for the season shall be forfeited up to and including the event at which the discovery is made.

J.5 C PRODUCTION

Porsche 911 2.0L

Datsun 240Z

Lotus Elan

Ginetta

1. As with all classes a maximum over bore of .060" is allowed and no stroker cranks.
2. Displacement must be calculated from original as delivered specification.

3. Roll cages may penetrate firewall to help improve safety for fuel cell and impact protection.
4. Lexan windows all around are allowed. Windshield 3/16" minimum thickness. Except group1 cars.
5. Brake ducting is allowed.
6. Fiberglass body panels are allowed but discouraged. If it is deemed that one car has an unfair advantage do to weight, a weight penalty may be applied to even out competition. Except group1.
7. Maximum tire size of 225x50x15

PORSCHE 911 2.0 L Supplemental Rules

Engine

1. 1991cc. Bore x stroke 3.15" x 2.60" (80mm x 66mm) Max .060 overbore
2. Head material; alloy
3. No twin plug heads
4. Block material; alloy
5. Carburetion; (2) Weber 46 IDA or PMO equivalent
6. Ignition; Electronic ignition is permitted and must be triggered by a distributor
7. Transaxle; 901 or 915 transaxle. 4 or 5 speeds, Quaife, limited slip or locked differential, ring and pinion ratio is free.

Engines larger than 2.0 liters

1. A. Engines larger than 2.0 Liters will be placed in GTU class

Chassis and Weights

1. 2-door, uni-body coupe, steel body.
2. Wheelbase: 911 SWB 87" or 911 LWB 89.2" (long and short wheelbase cars)
3. Track dimension: front…54", +/- 2" rear…54", +/- 2"
4. Minimum weight, measured without driver and fuel:

   Porsche 911 SWB up to 1968, 2 liter 1925 lb

   Porsche 911 LWB up to 1972, 2 liter 1965 lb

   Porsche 914-6 up to 1972 2 liter 1965 lb

   All weights are without driver measured at end of session.

Suspension

1. MacPherson strut, torsion bars, front & rear.
2. Upper front strut mounting points may be made adjustable for caster and camber adjustments. Must use factory mounting holes.
3. Lower front A-arm bushing material is free as long as in the stock mounting point
4. Rear spring plate and lower control arm bushing material is free as long as in the stock mounting point
5. Torsion bars, sway bars, links, steering ends, shocks(no external reservoirs) are free,
6. Flywheels, clutches, axles, CV joints, hubs and all gear ratios are free.

Steering

1. Rack and pinion with ratio and ends free.

Brakes

1. 2 piston cast iron or aluminum (S or E) style front calipers or equivalent, with a max. Vented rotor diameter of 11.2"

2. 2 piston cast iron style rear calipers or equivalent with a max. Vented rotor diameter of 11.4”
3. “SC” Front calipers are acceptable.

Wheels

4. 7” x 15” Maximum “Any Offset allowed as long as track is remains correct”. Maximum width measured to outside of tire tread to be 66”.

Bodywork

1. Removal of passenger seat allowed
2. Bumpers, headlights, parking lights may be removed
3. Fiberglass Body Panels allowed but car must meet minimum weight.
4. Wheel openings must remain standard when viewed from the side.
5. Wheel arches may be “rolled” to accommodate legal tires with legal track.
6. Cage is free as long as it meets safety specifications.
7. Period correct front air dams are acceptable.
8. No rear spoilers

240Z DATSUN Supplemental Rules

Engine

1. L24 (2393cc /2.4 L.) Bore x stroke 3.2677” x 2.90” Max .060 overbore.
2. Head material; aluminum. Cylinder head must be series produced by manufacturer for make and model
3. Block material; cast iron.
4. Carburetion; (2) Hitachi HJG 46W or SU equivalent, (3) 44PHH Mikuni or (3) Weber 45DCOE carbs or equivalent.

Engines larger than 2.4 Liters

1. Engines larger than 2.4 liters are placed in GTU class.

Ignition

2. Electronic ignition is permitted and must be triggered by a distributor.
3. Substitution of any alternator is permitted; if no charging system, add 25# to official weight.

Transmission

1. Datsun: 4 or 5 speeds, ratios free.
2. Standard gearbox may be replaced with an alternate production based gearbox of the same number of forward speeds. Add 75 lbs. to official weight

Chassis and Weights

1. 2 door, uni-body coupe, steel body, independent rear suspension.
2. Wheelbase: 90.7”
3. Track dimension: front…54”, +/- 2” rear…54”, +/- 2”
4. Official weight, measured without driver:

   (Hitachi/SU)...2000#

   (Mikuni/Solex/Weber/OER)...2075#

   Example: 240z with (3) Webers, Disc rear brake / 2075# + 25# = 2100#

   All weights are without driver measured at end of session.

Suspension

1. McPherson strut w/coil spring; front hydraulic strut w/coil spring; rear. Coil over shocks allowed.
2. Spring mounting points on struts may be moved or made adjustable
3. Springs, sway bars, etc. are free as long as track remains correct
4. Flywheels, clutches, drive shafts, axles, universals, CV joints, hubs and all gear ratios are free.
5. Upper front and rear strut mounts may be made adjustable for camber and caster. Must use factory mounting holes.

Brakes

1. P/N 99996-E7008 or Lockheed CP2271, 1.5" front caliper or equivalent.
2. P/N 99996-E7007 or Lockheed CP2270, 1.625" front caliper or equivalent.
3. Rear disc brakes allowed, P/N 99996-E7107 or Lockheed CP2382, 2" rear caliper or equivalent, 2-piece rotors of correct diameter (aluminum hat & steel rotor) allowed.
4. 11" or 11.5" vented rotors.
5. Rear Disc Brake add 25 pounds.

Wheels

6. 7" x 15" Maximum. Any Offset wheel allowed as long as track remains correct. Maximum width measured to outside of tire treads is 66".

Bodywork

1. P/N 98300-E8100 or BRE/240-Z "Spook" or Sharp type flat aluminum spoiler, not to exceed 280 sq. in., totally between the wheel centerlines. (This plate should be mounted at approx. 45 degree angle, completely below the hub centerlines and behind the foremost body part.) See picture #1 below
2. P/N 98100-E3300 or BRE/240-Z equivalent rear fiberglass spoiler not to exceed 4" tall allowed.
3. P/N 63900/63901-E4126 equivalent plastic or metal headlight covers allowed.
4. Bumpers, headlights, parking lights may be removed.
5. Fiberglass Body Panels allowed but car must meet minimum weight.
6. Wheel openings must remain standard when viewed from the side. NO Alternate flares except FACTORY TYPE.

Reference "A" picture

Reference "B" picture

Reference "F" picture

LOTUS ELAN Supplemental Rules

1. 1588cc twin cam
2. Weight without driver; 1325#

GINETTA Supplemental Rules

1. 1500cc non cross flow
2. Weight without driver; 1100#

J.6 S2 and CS2 SPORTS 2000 AND CLUB SPORTS 2000

J6.A1 Classes

Sports 2000 is for cars manufactured through 1993. Cars manufactured from 1994 through 1998 can be run as exhibition, up to three times per year, but will not be classified in the points championship. Sports 2000 cars will be classified in two groups. As a guideline, S2 (Sports 2000) is for cars that have either its front or rear, or both of its suspension in an inboard configuration. CS2 (Club Sport 2000) is for cars that have both front and rear suspension configured in an outboard arrangement.

Examples of VARA accepted S2 cars include:

Lola 87/90-91/90

Swift DB2/5

Tiga SC85-87

Examples of VARA accepted CS2 cars include:

Lola T490, T492, T590, T86/90

Royale 2000M, RP37/38

Tiga SC79-84.

J6.A2 Original Specifications

All cars must be in the specification for such cars in their original year of manufacture. No updating beyond such specification or other modification is permitted, except that cars may be updated or modified to the latest specification attained by identical models in their year of manufacture. CS2 cars whose bodywork has been modified beyond their year of manufacture may be classified as a S2 on a case by case basis. The onus of proof shall be with the competitor/entrant. Safety modifications, as required by VARA, are permitted and required. Data acquisition on CS2 cars are not allowed. The use of electronic dashes is allowed if they are configured only to inform the driver of engine revs, pressures and temps. Time-track mapping, G-load, throttle and suspension position sensors and data recording devices are specifically prohibited in CS2 and their use will classify the car as S2.

J6.A3 Carbon fiber bodies

Carbon fiber bodywork will be allowed, as long as the car meets the minimum weight requirements. CS2 cars using carbon fiber bodywork, the bodywork must replicate the original design. CS2 cars using carbon fiber bodywork that materially changes the design of the original car will be classified as S2.

J6.A4 Body and suspension design

Body and suspension design should be as original. Manufactured CS2 cars whose design is materially changed or hybrid-bodied cars will be classified as S2.

J6.B. Sports 2000 Preparation Rules:

J6.B1 Definition

Open cockpit two (2) seater rear engine sports racing car using a standard Ford 2000cc single overhead camshaft "NE" series engine with a two-venturi carburetor. Sports 2000 is a Restricted class. Therefore any allowable modifications, changes, or additions are as stated herein. There are no exceptions. IF IN DOUBT, DON'T.

J6.B2 Safety Requirements

All safety equipment shall comply with standard published VARA safety rules.

J6.B3 Chassis

1. Unrestricted except that the use of carbon fiber composite structural materials is prohibited. No engine oil or water tubes are permitted within the cockpit. The engine will be mounted upright and aligned fore and aft in the chassis.

2. All cars must have a longitudinal barrier in the left leg area forward of the dash substantially strong enough to prevent the left from moving more than 3 inches to the left of the vehicle centerline in the event of a side impact.

3. It is the intent of these rules to minimize the use of "ground effects" to achieve aerodynamic downforce on the vehicle. Thus, the chassis and body surfaces which comprise the underside of the car shall not deviate from a flat plane by more than 2.5cm (one (l) inch). This deviation may not be used to create an aerodynamic device. For this purpose the underside is defined as being within the rectangular area along the length between the front edge of the front wheels and the rear edge of the rear wheels and across the outside of the front and rear rims. No aerodynamic devices (e.g. "skirts," body sides, etc.) shall extend below this surface anywhere on the car to the rear of the front wheels.

J6.B4 Bodywork Including Airfoils

1. The body shall provide a cockpit for two (2) seats and cover all mechanical components including wheels and suspension members except for the exhaust pipe, induction system, and camshaft cover, which may protrude through the engine cover.

2. Between the front and rear axle lines the body shall:

    a. 1. Maintain over a minimum of 70% of the length of the wheelbase and over a depth of 20cm (7.9 inches) a minimum body width exceeding the greatest overall width across the tires less 15cm (5.9 inches).

    b. 2. Exceed in height the top of the tires over a width of 50cm (19.7 inches) excepting only cockpit and engine openings. There shall be no gap between the main body and the mudguards. The mudguards shall cover the full width of the tires around an arc of 120 degrees, which shall extend forward ahead of the axle centerline on the front and rear wheels and behind the rear wheels to at least 7.5cm (2.95 inches) above the axle centerline.

3. Maximum vehicle length forward of the front axle centerline: thirty- three (33) inches. Maximum vehicle length rear of the axle centerline: thirty-seven (37) inches.

4. The body above chassis level in the region of the cockpit shall not be reinforced in any way which would complicate or hinder the rescue of the driver. The cockpit opening seen in plan view shall be symmetrical about the longitudinal axis of the car and shall be large enough for a horizontal rectangle of 80cm (31.5 inches) by 40cm (15.75 inches) to be passed through with its minor axis aligned with the vehicle's longitudinal axis.

5. Space for two (2) seats shall be provided, each of at least 40cm (15.75 inches) width, and shall be positioned symmetrically about the vehicle's longitudinal axis. There shall be at least 25cm (9.9 inches) wide foot space for both driver and passenger measured at the pedals. The passenger space should provide as much seat space, elbow room, foot, and leg room in terms of length, width, and height as that of the driver. Battery boxes and fire systems are permitted in the passenger seat area.

6. Maximum height with driver on board, excluding safety roll-over bar and mirrors, shall not exceed at any time 90cm (35.4 inches) measured from the ground.

7. Airfoils and/or spoilers mounted at the front of the vehicle are permitted. These airfoils and/or spoilers may only be adjusted in a horizontal plane.

8. Adjustable airfoils and/or spoilers mounted at the rear of the vehicle shall be in the form of a flat plane and may only be adjusted within +/- 20 degrees of vertical.

9. There shall be no gap between these surfaces, or other airfoil, and the main bodywork.

10. All ducted air for heat exchangers (water/oil) shall pass through those heat exchangers.

J6.B5 Engine

The only permitted engine is the Ford 2 liter single overhead camshaft "NE" series engine or the 1971-74 Pinto/Capri 2 liter single overhead camshaft engine with nominal bore 90.84mm and stroke 76.95mm (Note: All blocks shall contain casting number HM6015BA, HM6015AA or HM6015BB. Dashes in the casting number are not relevant.). Production tolerances are permitted providing the total swept volume does not exceed 2000cc.

1. The camshaft and rockers shall remain entirely unmodified; they shall be fully manufactured and ground by the Ford Motor Co. Offset keys are permitted. It is prohibited to grind from blanks, regrind, or re-profile. Tuftriding or Parkerizing is permitted. Maximum valve lift at determined points by camshaft rotation will be established. The use of a low rate substitute valve spring is permitted. Load characteristics of special checking spring: twelve (12) pounds at 1.417 inches, thirty (30) pounds at 1.000 inches. Maximum valve lift against cam angle with zero tappet clearance:

   0.400 +/- 0.005

2. A standard crankshaft shall be used. Spot machining to achieve balance is permitted. Tuftriding, Parkerizing, shot peening, shot blasting, and polishing are permitted. Minimum weight: twenty-seven point five (27.5) pounds.
3. The flywheel shall be a standard component. The minimum weight is 14.4 pounds with ring gear. The flywheel may be machined to achieve minimum weight. Spot machining to achieve balance is permitted. Flywheel bolts are free and locating dowels are permitted. A 1600 GT starter ring may be fitted. The use of any single plate clutch is permitted provided no modification is made to the flywheel other than changing the points of attachment of the clutch to the flywheel. Carbon fiber clutches are not permitted.
4. Maximum compression ratio will be controlled as follows:
   a. 1. Minimum Cylinder Head combustion chamber volume 49cc (not including head gasket). Polishing and/or tooling of the cylinder head to achieve only the required combustion chamber volume is permitted.
   b. 2. Standard Ford gasket; minimum thickness .9mm, minimum diameter of cylinder aperture 92mm.
   c. 3. Pistons shall not protrude above cylinder block surface at TDC.
5. It is permissible to reshape inlet and exhaust port by removal of metal within limits. Addition of material in any form is prohibited. Maximum diameter of inlet port at manifold head face 39.5mm. Maximum dimensions of exhaust port at manifold face 35.5mm x 27mm. The distance between the valve centers and the angles of the valves shall not be altered.
6. Pistons shall be standard Ford production pistons, unmodified in any way except for balancing and as detailed herein. The following combinations are permitted:
   a. Piston P/N 80HM6102LA with rings and pin. Standard Ford connecting rod with bolts, without bearings. Minimum permitted weight = 1332.5 grams
   b. Piston P/N 85HM6102DA with rings and pin. Standard Ford connecting rod without bearing; any rod bolt and nut may be used provided no modification is made to the connecting rod. Minimum permitted weight = 1255 grams.
   c. Piston P/N 21426, casting P/N 21426 (AE Hepolite) with rings and pin. Standard Ford connecting rod with bolts, without bearings.

      Minimum permitted weight = 1255 grams. All three piston rings shall be fitted, compression rings and scraper (second) shall be one piece, single homogeneous material-type with conventional plain gaps. Chromium plating of the top ring is optional; oil control rings shall be either single piece twin-land type or apex three piece (two rails and an expander). Localized machining of the gudgeon pin bosses to achieve balance and weight by simple machining; all external surfaces, dimensions, and profiles shall remain standard with the exception of the top surface of the piston crown which may have simple machining to achieve balance.
   d. Piston P/N M-6102-B200 with pin. Minimum permitted weight = 1255 grams w/ rings, standard Ford or alternate connecting rods with bolts, without bearings. NOTE: M-6102-B200 piston assembly is now made by JE and is visually different. I.D. Marks: M-6102-B200, Ford racing logo. All marks pin stamped on wrist pin bosses.
7. Valves shall remain standard; no re-profiling or polishing is permitted. The original forty-five (45) degree seat angle shall be maintained.

Maximum face diameter inlet 42.2mm. Maximum face diameter exhaust 36.2mm. Maximum valve stem diameter 8.4mm.

8. Connecting rods shall be standard Ford parts. Machining is permitted to remove metal from the balancing bosses to achieve balance only. Tuftriding, Parkerizing, shot peening, shot blasting, polishing, etc., are permitted. It is permitted to radius the area around the big-end cap retaining bolts. Alternate connecting rods and big end bolt assembly (P/N M-6200-C200) are permitted. Big-end bolts, P/N 905500, are permitted.
9. Maximum valve lift against cam angle with zero tappet clearance: (Lift measured in mm.)

	Inlet		**Exhaust**	
Angle	**Opening**	**Closing**	**Opening**	**Closing**
0	10.442	10.442	10.442	10.442
5	10.36	10.36	10.36	10.36
10	10.11	10.11	10.11	10.11
15	9.69	9.69	9.69	9.69
20	9.11	9.11	9.11	9.11
25	8.37	8.37	8.37	8.37
30	7.45	7.45	7.45	7.45
35	6.38	6.38	6.38	6.38
40	5.17	5.17	5.17	5.17
45	3.86	3.86	3.86	3.86
50	2.59	2.58	2.58	2.59
55	1.50	1.47	1.47	1.50
60	0.86	0.81	0.81	0.86
65	0.65	0.56	0.56	0.65
70	0.54	0.43	0.43	0.54
75	0.46	0.33	0.33	0.80
80	0.37	0.19	0.19	0.37
85	0.26	0.08	0.08	0.26
90	0.20	0.01	0.01	0.20

10. Engines will be mounted upright, and aligned fore and aft in the chassis.
11. A single carburetor only will be used on a standard inlet manifold. The carburetor will be a Weber 32/36 DGV 26/27mm venturi, its origin being from a 1600 GT "Kent" or 2000 SOHC NE engine. The Holly 5200 32/36 carburetor also may be used; carburetor with the swaged fuel inlet fitting shall be replaced by drilling and tapping the carburetor body for a threaded fitting. The air cleaner may be removed and a trumpet fitted, and jets may be changed, both throttles may open together, cold start devices and diffused bar may be removed, internal and external anti-surge pipes may be fitted, and seals on emission control carburetors may be removed. The bottom of the lower column portion of the auxiliary venturi may be machined for purposes of high-speed enrichment. No other modifications are permitted. Chokes (venturi) shall remain standard and no polishing or profiling is permitted.
12. The addition of material by any means to any component is prohibited.

13. It is permitted, as a means of repair, to replace damaged valve seats and cylinder bores by replacement cast iron valve seat inserts and cast iron cylinder liners; valve guides may be replaced with cast iron or bronze, all to standard dimensions.
14. Balancing of reciprocating and rotating parts is permitted only by removal of metal from locations so provided by the manufacturer.
15. Non-standard rocker covers are permitted providing they in no way improve the performance of the engine.
16. Standard valve spring retainers shall be used, and single valve springs only are permitted. Shims are permitted, and valve springs are otherwise free.
17. Exhaust system and manifold are unrestricted, within VARA safety regulations.
18. Lubrication system is unrestricted; dry sump is permitted. Localized machining of the cylinder block is permitted to allow fitting of the oil pump.
19. Oil coolers are unrestricted.
20. A liquid cooling system is mandatory, but radiator and water pump are unrestricted. The radiator, if housed in or incorporating a cowl air-scoop deflector, shall comply with body regulations.
21. Fuel Pump: Unrestricted.
22. Distributors are unrestricted providing they retain the original drive and location. The distributor is defined as the component which triggers the L.T. current and distributes the H.T. current. The Ignition Timing may only be varied by vacuum and/or mechanical means.

    It is prohibited to use any other method or component to trigger, distribute, or time the ignition.
23. Only the standard inlet manifold shall be used. The ports may be reshaped by the removal of metal as long as the following dimensions are maintained: maximum size at head face = 1.437" (36.5mm), maximum size at carburetor flange = 3.405" (86.5mm) x 1.595" (40.5mm). The carburetor seat face may be machined to horizontal in the fore to aft plane. The diameter of the ports may exceed the above listed dimensions if the casting bore is untouched and in its original state. The water passages in the inlet manifold may be plugged. Holes in the inlet manifold resulting from the removal of emission/vacuum lines shall be plugged.
24. Gaskets and seals are unrestricted except for cylinder head gasket, carburetor-to-inlet manifold gasket, and inlet manifold-to-head gasket, which shall be standard Ford manufacture for the engine. Carburetor to inlet manifold gasket as used with Holley 5200 is allowed.
25. Pump, fan, and generator drive pulleys are unrestricted.
26. The crankcase breather may be altered or removed, but all breathers shall discharge into a catch tank.
27. Mechanical tachometer drives may be fitted.
28. Generators are optional.
29. Standard oversize and undersize bearings are permitted. This does not allow reducing the bearing surface area by reducing the width of standard bearings.
30. The use of non-standard replacement fasteners (nuts, bolts, screws, studs, and washers) which are not connected with or which do not support the intake manifold or any moving parts of the engine is permitted.
31. Only modifications or additions specifically covered by these regulations are permitted. All engine components not covered by these regulations shall remain completely standard and unmodified.

J6.B6 Suspension

All parts shall be of steel or ferrous material, with the exception of hubs, hub adapters, bell cranks, pivot blocks, and bushes. Front and

rear hub carrier material shall be steel or aluminum alloy. Titanium prohibited. Springs: steel only. (Rear hub carrier material on car manufactured before January 1, 1983 is unrestricted, but replacement parts shall be steel or aluminum alloy.)

J6.B7 Brakes

Aluminum alloy brake calipers are prohibited, otherwise unrestricted.

J6.B8 Shock Absorbers

Design: Unrestricted. Case material: steel or aluminum alloy.

J6.B9 Steering

Unrestricted.

J6.B10 Wheels and Tires

Thirteen (13) inch diameter wheels with maximum front rim width of six (6) inches and rear eight (8) inches are the only wheel sizes permitted. Material is unrestricted providing it is metal.

J6.B11 Transmission

1. The gearbox shall include an operable reverse gear, capable of being engaged by the driver while normally seated, and contain not more than four forward gears. The ratios are unrestricted.
2. Rear wheel drive only is permitted.
3. Final drive ratio is unrestricted.
4. The differential cannot be modified in any way to limit its normal function. Torque biasing, limited slip, and lock differentials are prohibited. Excessive shimming of the differential is prohibited.
5. The use of automatic and/or sequentially shifted gearbox is prohibited.
6. Electronic assisted gear change mechanisms and electronically controlled differentials are prohibited.
7. Gearboxes with shafts that are transverse to the longitudinal axis of the chassis are not allowed. The sole exception is the gearbox final drive (crown wheel) shaft axis and final drive shafts (half shafts). All change gears must be located in the case aft of the final drive.

J6.B12 Fuel Cells

Per Section J6.B17.

J6.B13 Fuel Capacity

41 L (10.8 gal) maximum.

J6.B14 Electrical

A self-starter is mandatory, operated by the driver. Two stoplights and two taillights, each of at least fifteen (15) watts rating shall be operable.

J6.B15 Weight

1310 lbs., minimum with driver.

J6B16 Windscreens

are optional

J6.B17 Bulkheads and Cells

Fuel cells shall be isolated by means of bulkheads and so vented in case of spillage, leakage, or a failure of the cell that fuel and fumes will not pass into the driver or engine compartment or around any part of the exhaust system. No part of any oil or water tank shall be exposed to any part of the driver and passenger compartment. Safety fuel cells are required for cars registered after January 1, 1983. There shall be a liquid tight and fireproof bulkhead separating the fuel tank(s) from the cockpit.

J.7 WSR, WSR1 & WSR2 WORLD SPORT RACER CLASSES

1.0 Vehicle description and eligibility

1.1 The World Sport Racer Class (WSR) is a 1.6 liter, one design fixed specification sport racer powered by Toyota.

1.2 The WSR is a one design, fixed specification, open cockpit, single seat, closed wheel, sports racing car. The car was manufactured exclusively by Smart Performance Products (SPP) later know as World Sports Racer Inc, of Vista California.

1.3 WSR defined

1.3.1 SP-94 cars chassis number 0001 through 0040 here forth known as Generation I, meeting all current VARA technical and safety regulations.

1.3.2 SP-94 cars chassis number 0041 through 0101 , here forth known as Generation II, meeting all current VARA technical and safety regulations.

1.4 All World Sports Racers competing with VARA must utilize WSR generation I or II bodywork to maintain eligibility.

1.5 Class designations and eligibility.

1.5.1 WSR: WSR race cars within full compliance with the following VARA SP-94 specifications affords full competition status and WSR points awards.

1.5.2 WSR1: WSR race cars within full compliance of the following VARA SP-94 specifications with the sole exception that the race car utilizes EFI (electronic fuel injection) as designed, specified and required during the final season of the national pro series. Compliance to these specifications affords full competition and WSR1 points awards.

1.5.3 WSR2: WSR race cars within full compliance of the following VARA SP-94 specifications utilizing either carburetion or fuel injection fuel induction methods while complying with the following limitations as enumerated within this document. Compliance to these specifications affords full competition and WSR2 points awards.

1.5.4 WSR-X: Limited competition status for exhibition class WSR race cars that have be modified beyond the addition of EFI, as specified in this document to include but not be limited to steering, suspension and chassis components, tires and wheels not specified in this document, engine and intake components not specified in this document, bodywork and undercarriage components. These cars are eligible to compete at no more than (3) three VARA scheduled events per race season. There are no points awards for WSR-X competitors.

1.5.5 All WSR race cars shall display the appropriate class designation in a conspicuous location on both drivers left and right side bodywork prior to tech inspection. Cars not displaying the proper class designations shall be assumed to be exhibition class competitors. All WSR entrants are subject to inspection at any time during a race event to insure eligibility status.

1.5.6 All WSR race cars shall display a Vintage Auto Racing designation in a conspicuous location on both drivers left and right side bodywork prior to tech inspection.

2.0 Safety Requirements

2.1 Replacement or upgrading of safety equipment is permitted. Replacement items must meet or exceed the specifications of the original equipment.

2.1.1 Head Restraint Pad – A minimum one half inch thick energy absorbing pad is required behind the drivers helmet. Pad must be of adequate size to prevent drivers helmet from contacting the cockpit center section.

2.1.2 Cockpit Bar Padding – Tubular padding of minimum one half inch in thickness of energy absorbing material is required on the forward cockpit bars. Cockpit bars

may not be removed. Generation I vehicles are not required to install cockpit bars but installation is recommended.

2.1.3 Arm Restraints – Approved arm restraints are required for competition.

2.1.4 Safety Seats – Safety seats may be installed provided they are secured to the requirements and specifications of the seat manufacturer. Seat brackets shall not be attached to the race vehicle by bolting through the lower body pan or through bolting into the steel tube frame chassis. Brackets or mounting tabs may be welded to the chassis. Molded bead seats are permitted and do not require attachment to the race car chassis or tub.

2.1.5 Safety Harness – A six point safety harness is required for competition.

2.1.6 Fuel cell – No modifications are permitted to the size, configuration or location of the original specification Fuel Safe 8.5 gallon, bladdered fuel cell. EFI equipped race cars shall mount their fuel pump internally.

3.0 Chassis and Suspension:

3.1 Chassis Maintenance and Repairs – Repairs to the chassis are permitted under the following restrictions.

3.1.1 Material removed must be replaced with material of the same dimension, location, wall thickness and specification. Removal of chassis components for the purpose of weight reduction is not permitted and may constitute grounds for disqualification.

3.1.2 Tubes or structures shall be replaced with the same design as original, in their original location.

3.1.3 In the event roll over damage to either the front roll over bar or the main roll hoop, either assembly may require replacement. The front roll over bar and / or the main roll hoop shall be replaced as a complete unit. Complete chassis and / or suspension replacement from parts or roller cars may be permitted from all WSR generations so long as the restoration complies with VARA technical and safety requirements for WSR generations I and II.

3.2 Suspension Maintenance

3.2.1 Adjustments - Adjustments are permitted within the limitations of the suspension components as designed. It is prohibited to modify or relocate any suspension pick up points.

3.2.1.1 Suspension components modified for the use of radials tires during the concluding season of the WSR national pro series may be modified to original SP-94 bias-ply tire suspension geometry specification. Modifications to length of the radial tire components shall not exceed ½". Component diameter and pick up points may not be altered.

3.2.2 Minimum ride height is 2.5 inches measured at the front axle centerline chassis point with the front wheels pointed forward while driver is seated in the cockpit.

3.2.3 Sway Bars Adjustments – Sway bar adjustments are limited to the original connection points along the bars. Bar gauge thickness and diameter are not limited. Cockpit adjustable sway bars are not permitted.

3.2.4 Shocks and Springs – No modifications are allowed. Shocks may be adjusted within their original design specifications.

3.2.5 OEM Shocks – Two shock absorber manufacturers are permitted for use.

3.2.5.1 WSR part no. 02-04901 Koni Front and WSR part no. 02-03901 Koni Rear.

3.2.5.2 WSR part no. 02-04902 Carrera Front and WSR part no. 02-03902 Carrera Rear.

3.2.6 OEM Coil Over Springs – Coil over springs manufacturer is not limited. Spring rates are limited and shall be no less than 400 lbs and no greater than 650 pounds in any combination. Springs may not be painted or plated. They must retain the factory applied original powder coat finish as supplied by the manufacturer.

4.0 Bodywork:

4.1 Bodywork shall include all fiberglass outer body parts including: nose, cockpit center section, hatch cover tail section wing element, and wing end plates. It shall also include the tub insert, interior aluminum panels, floor skin panels, fiberglass air ducts and mirrors. Modifications of the bodywork, for the purpose of altering; aerodynamics, weight, weight distribution, rigidity, or appearance are prohibited unless listed specifically below

4.1.1 Wheel well louvers are permitted on the car's nose section provided the application follows the original body work contour.

4.1.2 Modifications to the bodywork in the form of wickers, side skirts, dive plates, diffuser plates, well or compartment venting or under carriage enclosures are prohibited.

4.2 Finish – The car may be painted any color(s). Bodywork must be maintained in a condition of professionalism and to assure the safety of fellow competitors.

4.3 Reinforcing – Reinforcing of the bodywork at the points of interlocking between the nose locating pins is permitted as long as the reinforcing serves no other purpose. It is permitted to add two mounting locations to the nose assembly. These locations are limited to the upper diagonal tubes behind the front wheels. It is permitted to add two mounting locations to the tail assembly. These locations are limited to any point along the rear upper chassis cross member.

4.4 Damage Repair – Crash damage repair(s) to the bodywork is permitted only if they retain the original exterior body shape, form, profiles and dimensions.

4.5 Aluminum Panels – Modifications to aluminum panels are prohibited. Panels must be used in their original design position without modification. It is permitted to anodize, paint or plate coat the aluminum panels. Air Ducts / Tunnels – No modifications are permitted. Air ducts must be used as designed in their original location without modification. Inlet screens are permitted as long as they serve no other purpose than air filtration. The addition of any material for the purpose of deflecting air flow or creating additional down force within the air ducts is prohibited.

4.6 Oil Cooler Deflectors – It is permitted to add a panel to deflect air directly to the oil cooler. The maximum allowable size is twelve (12) inches in length and the height of the air duct. It must serve no other purpose than to deflect additional air to the cooler.

4.7 Engine Compartment Deflectors - Aluminum air deflector panels, aft of the air ducts / tunnels, may be added within the original fiberglass bodywork so long as such panels are mounted directly to the steel tube chassis with a permanent riveting system.

4.8 Auxiliary cooling fans are permitted exclusively to assist in directing air flow into the engine / starter compartment. Cooling fans shall not be permitted to provide additional forced air cooling to the racecar's oil or water cooling systems. The number of auxiliary cooling fans permitted per racecar, in total, is (2).

4.8.1 Cooling fan mounting location is free, however, all fans must be mounted within the confines of any and all approved chassis and body components as defined within Section 4 of the WSR specifications. Alteration of any / all chassis components to accommodate the addition of auxiliary fan(s) is not permitted.

4.8.2 Mounting components shall incorporate a bolted or riveted solid fastening system subject to evaluation and approval of technical inspection officials.

4.8.3 Fans must run on the racecar's in place 12 volt electrical system.

4.8.4 Fan cooling ducts and air duct attachment and termination points fore and aft of the fan(s) are free. Cooling ducts within 6" proximity of the header/exhaust system shall be heat rated material.

4.9 Front Splitter – The front splitter shall not exceed 8" length x ¼" deep and shall not extend beyond the fixed width of the detachable nose section.

4.9.1 The front splitter shall not extend more than three (3) inches ahead of the fiberglass nose section. Race tape may be applied to the full width of the splitter over the seam along the base of the nose section.

4.9.2 The front splitter shall be consistent in profile for it's entire length, depth and width. No additions to the flat plane of the splitter surface are permitted.

4.10 Wing Element – The rear wing element may not be modified in any way. Finishing of the wing is limited to; painting , plating , polishing. It is not permitted to blend or fill the trailing edge lip on the top of the wing. Wing location is restricted.

4.10.1 Wing adjustments are limited to the amount allowable by the design of the wing adjusting slot utilizing the hardware as supplied by the factory without modification. No additional mounting holes or slotting of holes is permitted. Modification of the wing end plates is not permitted.

4.10.2 Gurneys or wickers are permitted on the trailing edge of the wing. Maximum gurney height is 3/8". Shims or spacers are not permitted.

4.11 Mirrors – Two rearview mirrors are required in their original factory installed pylon locations. Replacement mirrors are allowed but must utilize and maintain the original mounting brackets and position.

5.0 Engine:

5.1 The Toyota 1600 Toyota in-line 4 cylinder DOHC 16 valve 12.25:1 maximum compression 4AGE engine is the only permitted engine.

5.1.1 Cylinder head - Toyota OEM alum head is required for WSR classifications. Bowls may be modified in order to match the seat to the casting. Any additional machining including but not limited to porting, polishing, valve shadowing is not permitted.

5.1.2 Camshafts specification – Web Cam: 305 lift 248 @ .050 duration intake open 24 btdc close 44 abdc. exhaust open 44 bbdc close 24 atdc, 100 to 102 lobe center.

5.1.2.1 Adjustable cam gears are permitted. Manufacturer is free.

5.1.2.2 Redrilled adjusted cam gears shall not exceed (4) degrees advancement.

5.1.3 Crankshaft specification – Bore is 81.00 mm with a 77.00 mm stroke.

5.1.3.1 WSR &WSR1: OEM crankshaft for 4AGE engine only permitted.

5.1.3.2 WSR2: Toyota Formula Atlantic crank configurations are permitted.

5.1.4 Valve specification –

5.1.4.1 WSR &WSR1: OEM valve and porting - 30.5 Intake, 25.5 Exhaust

5.1.4.2 WSR2: Large valve and porting - 32.0 Intake, 27.5 Exhaust

5.1.4.3 Valve manufacturer and material is free.

5.1.5 Overbore specification – Overbore is not permitted on the 4AGE cylinder bores.

5.2 Fuel induction.

5.2.1 WSR: Carburetors shall be 40 DCOE as manufactured by Weber. Jet and emulsion tube changes are permitted. Venturi / choke size shall be 34mm.

5.2.2 WSR1: Fuel injection is permitted using Toyota OEM MR2 components including injectors, fuel pump (mounted internally in fuel cell), fuel pressure regulator and injector rail.

5.2.3 WSR2: see 5.2.1 or 5.2.2

5.3 All WSR race cars must use Direct Fire or Crank Fire ignition systems to be eligible for competition.

5.3.1 WSR: Direct fire ignition system shall be manufactured by Electromotive. The system is limited to the HPV1 or Xdi timing control with twin coils.

5.3.2 WSR1: Direct fire ignition system shall be manufactured by Motorcraft.

5.3.3 WSR2: see 5.3.1 or 5.3.2

5.4 Oil distribution – remote oil cooler and filtration may be utilized for all classes of WSR. Auxiliary cooling fans are not permitted.

5.4.1 Toyota 4AG case mounted OEM oil pump is required.

5.4.2 WSR2: External dry sump oil system is permitted.

5.5 Cooling system – Remote water radiator location shall not be altered or modified. Auxiliary cooling fans are not permitted.

5.5.1 WSR & WSR1: Toyota OEM radiator per SP-94 specification.

5.5.2 WSR2: Aluminum aftermarket radiators are permitted.

6.0 Transaxle and Drivetrain: (all classes)

6.1 Flywheel – Lightened flywheels are permitted. Lightened flywheels must be balanced. Minimum weight is 11.5 lbs.

6.2 Pressure plate – Two clutch pressure plates specifications are permitted. Toyota OEM MR2 in both large (212mm) and small (200mm) diameter and TRD U.S.A. performance clutch pressure plate in both large and small diameter. Pressure plates duplicating these specifications have no limit on manufacturer.

6.3 Clutch disc – both organic OEM organic and Kevlar discs are permitted. There are no manufacturer restrictions.

6.3.1 Clutch hydraulic line upgrade is permitted to increased diameter from original SP-94 specification. Material shall remain steel braided with AN type fittings at source, destination and bulk heads.

6.4 Drive Axles – No modifications of any kind are permitted.

6.5 The Toyota five speed manual transmission(s) C-50 or C-52 are required for competition. No alternatives or modifications are allowed. Limited slip differentials are not permitted.

1st gear 3.175 final 13.69

2nd gear 1.905 final 8.21

3rd gear 1.310 final 5.65

4th gear .976 final 4.20

5th gear .816 final 3.52

6.6 WSR2 - Limited slip differentials are permitted.

7.0 Steering:

7.1 Steering Assembly – No modifications to the steering rack, steering rack location or the steering geometry is permitted. Steering rack ratio is a fixed specification, no modifications are permitted.

8.0 Wheels and tires:

8.1 There is no restriction for manufacturer of race wheels for the WSR. Race wheels shall be of two or three piece alloy specifically manufactured for road coarse racing applications. The manufacturing specification for the wheels are as follows:

8.1.1 *Front 7.62"overall width, x13"dia x.010"offset x 3.80" backset.*

8.1.2 *Rear 8.62"overall width, x13"dia x.470"offset x 4.780" backset.*

8.1.3 Wheel applications used exclusively for intermediate or full rain tire setups may be of two piece welded steel manufacture.

8.1.4 Steel wheels for rain setups shall comply with specifications as stated in subsections 8.1.1 & 8.1.2

8.2 Tires shall be limited to the following manufacturers and the associated compound specification:

8.2.1 Goodyear: front 20/7/13 430 rear 22/9/13 430

8.2.2 Hoosier: front 20/7/13 R45 – rear 22/9/13 R45 *or 22/10/13 R45*

8.2.3 Avon: front 7.0/20.0-13 A37 – rear 8.2/22-13 A37

9.0 Braking system:

9.1 All classes shall maintain the SP-94 pedal configuration, adjustable within the restrictions of the chassis attachments as manufactured by PBS or Tilton.

9.2 WSR & WSR1: Stock Toyota OEM for model MR2, Cressida or Corolla, 1984 through 1989 front and rear disc brakes and calipers are permitted. Vented rear rotors from these OEM components are permitted.

9.3 WSR2: Slotted and / or drilled rotors produced as OEM replacements for MR2, Cressida or Corolla, 1984 through 1989 front and rear disc brakes are permitted. Manufacturer is not limited.

9.4 WSR & WSR1: Calipers to be Toyota OEM 51-18 or 51-22, left and right sides:

9.4.1.1 (51-18) #47730-12171-84 & (51-18) #47750-12171-84

9.4.1.2 (51-22) #47730-17070-84 & (51-22) #47750-17070-84

9.5 WSR2: Calipers manufacturer is not limited however the piston configuration shall not vary in configuration nor exceed in number that of the OEM calipers, front or rear, as stated in subsection 9.4

9.6 Rear rotor replacements may be machined for fit per the following specifications

9.6.1 Increase inside diameter of rotor to 4.950" to clear MR2 OEM hub to account for heat expansion.

9.6.2 Decrease overall diameter to 241mm

9.6.3 Increase wheel stud opening as required for specific race car stud replacement requirements.

9.7 Front and rear cooling ducts are permitted exclusive of the use of the SP-94 caliper and air duct attachment points. Aftermarket rotor cowlings or shrouds are not permitted.

9.8 Mechanical brake bias control is permitted. Electronic brake bias control is not permitted.

10.0 Electrical System:

10.1 It is permitted to upgrade cockpit electronics. Both digital transmitting and analog displays are permitted.

10.1.1 Electronic shock, spring, weight jack, and / or wing adjustment systems are not permitted.

10.2 Battery – The battery must remain in its original design location. A gel cell battery is recommended. Wet cell batteries require the use of a fully enclosed battery box. Insulation of the positive terminal of the battery is required.

10.3 12 volt alternator is required for all classes.

10.3.1 Alternators may be crank pulley or shaft driven.

10.4 Auxiliary onboard ignition systems are not permitted.

10.5 Starters shall be mounted to the engine block according the Toyota MR2 OEM stock mounting means and position. Manufacturer is not limited.

10.5.1 Heat shields and thermal blankets are permitted.

10.5.2 Starter cooling ducts are permitted.

10.5.3 Internal silicone/epoxy applications to all starters are permitted.

J.8 FF VINTAGE FORMULA FORD And CFF rules

J8.1 Definition

A formula for single seat, open wheel racecars campaigned from 1967 through 1972, and 1973 through 1981, using the standard Ford Motor Company 1600 cross flow pushrod engine. Formula Ford is a restricted class. Therefore, any allowable modifications, changes or additions are as stated herein. There are no exceptions. IF IN DOUBT, DON'T.

As additional OEM parts (particularly engine parts) become obsolete there will be a need to update these rules to allow suitable replacement parts. However, no new part, change, or modification is permitted, beyond what is allowed in these rules, until it has been reviewed, approved, and published into these rules. There are no exceptions. IF IN DOUBT, DON'T.

Note: these regulations are supplemental to the general VARA regulations. For items not specifically addressed in these regulations refer to the VARA general regulations. If a conflict exists between the two sets of regulations, identify the discrepancy to the FF/CF group representative AND Chief of Tech for disposition.

Eligible cars are basically the first generation Formula Ford (Vintage Formula Ford) cars generally fitted with front radiators, outboard suspension and brakes. The following commercially constructed cars are eligible.

Alexis 14 (1968) 15 (1969) 18 (1970) 18B (1971) 22 (1972)

Beach MKII (1969-70)

Bobsy (1969)

Bowin P4/P4A (1969-71) P6 (1972)

Caldwell D9 (1969) D9B (1970-71)

Crossle 16F (1968-69) 20F (1971-72)

Dulon LD4 (1967) LD4B (1968) LD4C (1969) LD9 (1970-72)

Elden PH6 (1969) PH8 (1970-72) PH10 (1972)

Elfin 600 (1969-72)

Forsgrini MK12 (1968-69)

Ginetta G18 (1969-70) G18B (1971)

Hawke DL2 (1969) DL2A (1970) DL2B (1971) DL9 (1972) DL9A (1972)

Ladybird MK8 (1968) MK9 (1969)

Legrand MK10 (1969-72)

Lola T200 (1970) T202 (1971) T204 (1972)

Lotus 51 (1967) 51B (1968) 51C (1969) 61M (1970-72) 61MX (1972) 69 (1971-72)

Macon MR7B (1969) MR8 (1969-70) MR8B (1971)

March 709 (1970) 719 (1971) 729 (1972)

Mallock U2 MK9 (1969-70) U2MK9B (1971) U2MK9DD (1969-71)

Mcnamara FFA (1970)

Merlyn MK11 (1968) MK11A (1969) MK17 (1970) MK17A (1971) MK20 (1971) MK20A (1972)

Mirage MK5 (1970)

Mistrale (1969-70)

Nike MK4 (1968-69) MK6 (1970) MK10 (1971-72)

Royale RP2 (1969) RP3 (1970) RP3A (1971-72) RP16 (1972)

Tecno FF (1970)

Titan MK4 (1969) MK5 (1969) MK6 (1970) MK6A (1971) MK6B (1972) MK6C (1973)

Winkleman WDF1 (1969) WDF2 (1970) WDF3 (1971) WDF4 (1972)

J8.2 Engine

J8.2A General

The engine shall be the standard ford 1600 pushrod crossflow, as installed in the following vehicles:

Original Version- Cortina 1600 through 1970 model

Up-rated Version- Cortina GT (1971), Capri (1971), Pinto (1971)

Components shall not be interchanged from the original and up-rated versions of the engine unless specifically authorized. Regulations pertain to both versions unless otherwise stated. Original ford motor company replacement parts must be used unless otherwise specified. The engine shall not be altered, modified, or changed in any respect, unless specifically stated herein. Balancing of all moving parts of the engine is permitted provided that such balancing does not remove more material than is necessary to achieve such balance. It is permitted to polish parts of the engine provided the contour of the part is not altered and can be recognized as the original part. Maximum compression ratio: original engine 10.0 to 1 up-rated engine 9.3 to 1.

The following specs are used in determining compression ratio:

Uprated 1.33 cc- top ring to top of piston -.33 cc- volume of valve protrusion

Original 1.64 cc- top ring to top of piston both engs 4.75cc- head gasket

Minimum unswept volume per cylinder:

Original engine with std pistons- 44.4 cc

Original engine with +.030” pistons- 45.1 cc

Uprated engine with std pistons- 48.2 cc

J8.2B Block

Bore may be enlarged to increase clearance between piston and cylinder. Cylinder liners may be fitted. The top surface of the block may be milled to obtain the maximum compression ratio, as specified above. Any steel center main bearing cap is permitted. The 1600 Pinto block, DIFZ-6010C, may be used as a replacement for the Cortina GT block. The Fiesta block may also be used as a replacement

J8.2C Cylinder Head

Ports may be reshaped by the removal of metal as long the port diameter at the manifold face of the head does not exceed the following:

Inlet 1.50”

Exhaust 1.16”

Combustion chamber (original engine only)

Minimum depth .115”

Maximum length 3.15”

Minimum volume per cylinder 7.8 cc

Reshaping is prohibited A standard dimension head gasket shall be used. Head gaskets may be exchanged between the original and uprated engines. (See Miscellaneous, S.2.b) The use of the Pierce aluminum cylinder head, as approved by SCCA is permitted.

J8.2D Inlet Manifold

The ports may be reshaped by the removal of metal as long as the following dimensions are maintained.

Max size at head face:

	Original Eng	**Uprated Eng**
cyl 1 & 4	1.48 x 1.28”	1.24”
cyl 2 & 3	1.25”	1.25”

Max size at carb flange 3.060 x 1.389” Max length 3.80”

Primary choke end radius .709”

Secondary choke end radius .787”

The carb face of the inlet manifold may be machined to the horizontal to compensate for fore/aft tilt of the engine

The water passages in the inlet manifold may be plugged

J8.2E Pistons

Standard, .015 oversize, and .030 oversize may be used in the original engine. Only standard size pistons may be used in the uprated engine. Ford or Hepolite cast pistons may be used. The new CP ff1600 forged piston as sourced by Jay Ivey of Ivey Engines is also allowed. Mahle pistons are not allowed.

Maximum diameter: Standard 3.189” Original and Uprated Eng

.015 OS 3.204 Not permitted – Uprated engine

.030 OS 3.219 Not permitted – Uprated engine

Depth of bowl (+/-.005”) .500”

Max dia of bowl 2.28”

Min volume of bowl 31.50 cc

Centerline of wristpin to crown 1.737 +/-.002”

Overall height 3.30”

Min weight with rings and pin 515 grams

Weight of pin 115 +/- 2 grams

Piston rings are unrestricted provided that:

One oil control and two compression rings are used.

No modification is made to the piston for the installation of rings.

Pocketing of the piston valve relief’s is allowed up to a maximum of .050” to obtain minimum combustion chamber volume.

J8.2F Valves

Original eng Uprated eng

Distance apart at centers 1.540 +/-.020”

Max dia Inlet 1.502” 1.560”

Max dia Exhaust 1.252” 1.340”

Overall length Inlet 4.280 +/- .006” 4.367 +/- .020”

Overall length Exhaust 4.260 +/- .006” 4.355 +/- .020”

Reshaping of the valve is specifically prohibited (single 43-47 degree seat angle only).

J8.2G Camshaft

The camshaft lobe profile shall not be altered. The following specs are provided for checking only.

Lobes, heel to toe Inlet 1.280-1.322” max

Exhaust 1.280-1.323” max

Lobes, base circle radius Inlet .540”

Exhaust .545”

Lift at top of pushrod Inlet .231 + .002” max

Exhaust .232 + .002”max

Lift at spring cap Inlet .356” max

(with zero tappet setting) Exhaust .358” max

Re-contouring of the valve stem contact pad of the rocker arm is permitted, provided the maximum lift at the spring cap is not exceeded.

Offset camshaft/ sprocket dowels/ buttons are permitted.

A camshaft that is a replica of the original camshaft and of the same material and is dimensionally identical may be used. A camshaft meeting this requirement, as approved by SCCA, is currently produced by Elgin Industries.

J8.2H Valve Springs

Valve springs and valve spring shims are free except:

No more than one spring per valve

The standard spring cap and retainer must be used

Springs shall be made of steel

J8.2I Pushrods

Minimum stem dia .25”

Overall length 7.64” Minimum

Minimum weight 50 grams

J8.2J Connecting Rods

Minimum weight: Both engines: 630 grams

(Note: Weight includes cap, bolts, and small end bush, but not big end bearing shells.)

J8.2K Crankshaft

Weight: Original and Uprated engine 22lbs 8oz Minimum

Stroke at piston 3.056 +/- .004”

Crankshaft pulley unrestricted Either crankshaft may be used in either engine.

The crankshaft may be shot preened. The use of an aftermarket crankshaft of the same material, weight, and profile as the original is permitted. Crankshafts meeting this requirement, as approved by SCCA, are currently produced by Dave Bean Engineering, and by SCCA Enterprises/ SCAT.

J8.2L Flywheel

Weight with ring gear and dowels: 15.5lbs minimum (either engine)

The flywheel may be machined provided the machining to reduce weight to the above minimum weight retains the standard profile.

Alternate flywheel from JAE P/N JAE1600 is also allowed, to the above weight of 15.5 lbs

J8.2M Carburetor

Weber 32DFM, 32DFD, 32/36DGV, Holley 5200

Venturi diameter: Primary- 26mm, Secondary- 27mm

Permitted modifications:

1. The fitting of any jets (including accelerator pump discharge nozzle), which may be fitted without modification to the carburetor body.
2. Modification or substitution of external throttle linkage.
3. The fitting of internal and/or external anti surge pipes.
4. The removal of the air cleaner.
5. The fitting of a velocity stack.
6. The fitting of any filtration device directly to the carburetor. No scoops, snorkels, or ram air devices unless original.
7. Removal of the choke butterflies and linkage.
8. An alternate carburetor gasket is permitted provided it is the same thickness as the original.

J8.2N Fuel Pump

Unrestricted

J8.2O Exhaust Manifold

Unrestricted- except exhaust outlet must not extend more than 60 cm (23.6”) behind the centerline of the rear axle.

J8.2P Oil Pump And Sump

Unrestricted- dry sump system is permitted.

J8.2Q Cooling System

Radiator, fan, water pump, and drive belt unrestricted.

J8.2R Electrical System

Distributors are unrestricted provided the original drive location and housing (standard Motorcraft/Autolite, Lucas, or Bosch) are retained. The distributor is defined as the component that triggers the LT current AND distributes the HT current. The ignition timing may only be varied by vacuum and or mechanical means. It is prohibited to use any other method or component to trigger, distribute, or time the ignition. The vacuum advance mechanism may be removed, and the distributor advance plate may be secured by soldering, welding, or suitable fasteners. The advance curve and springs are unrestricted. Generator/ alternator not required.

Transistorized/ electronic ignition is prohibited.

Note: this section allows for the use of an electronic trigger to be fitted internal to the original distributor housing to replace the ignition points to trigger the spark. It does not allow ignition amplifiers, capacitive discharge, multi-spark, electronic rev limiting, crankfire, or any other similar devices.

J8.3 MISCELLANEOUS

1. The timing chain/sprocket cover may be altered or replaced.
2. The use of the following nonstandard replacement parts is permitted provided their use does not result in any unauthorized modification to any other component.
   a. Fasteners (nuts, bolts, screws, studs, etc.)
   b. Gaskets made by manufacturers other than Ford may be used provided the head gasket, carb to inlet manifold, and inlet manifold to head gaskets are identical dimensions to the Ford standard parts.
   c. Washers
   d. Seals
   e. Connecting rod bearings, crankshaft bearings, and camshaft bearings of the same size and type. Normal over/under size bearings are permitted. This does not allow reducing the bearing surface area by reducing the width of standard bearing.
   f. Rocker pedestals are allowed of any materials but must be dimensionally identical (i.e. shaft location, offset, etc.) to the original components.
3. Mechanical tach drive is permitted.
4. The crankcase breather may be altered or removed.
5. The rocker cover may be altered to provide for crankcase ventilation, and the filler cap may be altered or replaced.
6. The crankshaft and main bearing caps may be treated with salt bath or gas nitriding as covered by SAE spec AMS2755A (tuftriding, etc)
7. Water pump, fan, and generator/ alternator pulley (s) are unrestricted.

J8.4 Transmission

Any transmission may be used with not more than four forward speeds and an operational reverse.

J8.5 Final Drive

Any final drive may be used except:

Drive shall be to the rear wheels only.

Torque biasing, limited slip and locked differential are prohibited.

J8.6 Clutch

The use of any single plate clutch (7” minimum diameter) is permitted provided no modification is made to the flywheel other than changing the points of attachment of the clutch to the flywheel. Carbon fiber clutches are prohibited.

J8.7 Chassis

The chassis shall be of tubular steel construction with no stress bearing panels except the undertray, front bulkhead, and aft bulkhead/ firewall. A stress-bearing panel is a panel that is riveted with less than 6” rivet spacing, bonded, or welded between chassis tubes or bulkheads. The curvature of the undertray shall not exceed one inch. The tubes may transport liquid (oil or water). Monocoque construction and the use of honeycomb and composite (carbon fiber, kevlar, etc) materials are prohibited. The addition of safety related tubing (side impact bars, roll hoops and braces, etc) is allowed. Additional tubing specifically for the purpose of stiffening the chassis is prohibited.

J8.8 Suspension And Running Gear

All components shall be of steel with the exception of hub adapters, rear hub carriers, bearings and bushings. wheel spacers shall not exceed 1.5”. Vintage Ford Shock selection can either be steel or aluminum body, remote reservoir shocks for Vintage Formula Ford are prohibited. Club Ford shock selection can either be steel or aluminum body with or without external reservoirs and up to 2 adjustment

modes. Shocks with triple and quadruple adjustments with or without remote reservoirs are prohibited. The replacement of "metalastic" and plastic type bushings with spherical type is not prohibited. Sound engineering practices must be observed.

J8.9 Body

No part of the frame or body shall project beyond a plane connecting the vertical centerlines of the front and rear tires. No skid plate shall extend beyond the bodywork, acting as a "down force device" or air splitter. The driver's seat must be capable of being entered without the removal or manipulation of any part or panel. Wings (airfoils) are prohibited for Vintage Formula Ford, with the exception of certain Club Ford cars. Further description of allowable spoiler or wing is with in Club Ford definitions below. Advanced composite (carbon fiber, kevlar, etc) materials are prohibited for all Formula Ford cars.

J8.10 Brakes

Unrestricted, except that calipers must be cast iron, and rotors are restricted to ferrous materials.

J8.11 Wheels

Wheels shall be 13" with a maximum width of 5.5". (steel or alloy is permitted)

J8.12 Tires

The following "spec tire" must be used:

Front: Dunlop 135/545-13 CR82 9092 Formula Ford

Rear: Dunlop 165/580-13 CR82 9092 Formula Ford

Standard 9092 compound only (476 not allowed)

J8.13 Minimum Weight

The minimum weight is 1100 lbs, as raced or qualified.

Note: this weight is approximately 5% above the original rules. The intent is to encourage the use of all safety related items. The use of full height rollbars, with additional fore and aft braces, dash hoops, and fire systems should not be omitted for fear of a weight penalty.

J8.14 Fuel Tanks

All fuel tanks must be properly secured. The original elastic cords are in most cases inadequate. An FIA approved road racing type fuel cell, properly mounted, with a non-vented filler cap, and check valve in the venting system, is required for all cars. This requirement includes a flexible bladder filled with foam surrounded by a metal enclosure. Vent lines shall terminate outside of the car bodywork.

J8.15 Fire System

Cars must be equipped with a minimum of a 5.0-pound; nontoxic, commercially available fire system. As a minimum there shall be two nozzles, one nozzle directed at the carburetor and one directed toward the driver. Actuation can be mechanical or electrical and must be within easy reach of the driver.

J8.16 The Intent

All historic pre 1973 Formula Fords must compete in the identical specifications as manufactured. Updates and modification however "period" they appear are prohibited. Relocation of suspension pickup points, alteration of wheelbase or track are example of the above.

J8.17 Formula Ford Group I

This is a class recognized by VARA for early model Formula Ford cars that are restored to original specifications faithful to their period: and not revised or updated to later specifications. Currently FFI qualified cars are pre 1968 Lotus 51 models with the original Renault gearbox. Lotus 51's updated with Hewland/Webster gearboxes do not qualify. Other cars seeking FFI status may petition the group I committee and FF class representative for consideration.

J.9 CFF CLUB FORMULA FORD

J9.1 Definition

A formula for single seat, open wheel race cars campaigned in 1973 through 1981, using the standard Ford 1600 crossflow, pushrod engine. These are 1981 or older "second generation" designs with at least one chassis end having shocks outboard suspension. No modern electronics and no data gathering technology is allowed. Electronic tach is allowable.

Formula Ford is a restricted class. Therefore, any allowable modifications, changes or additions are as stated herein. There are no exceptions. If in doubt, DON'T!

All Formula Ford regulations listed above under "Vintage Formula Ford and Club Ford Rules" apply except the following for specified tires for Club Ford cars:

J9.2 Tires

Tires: American Racing slicks are the allowed specified - "spec" - tire.

Eligible Club Ford cars are basically the second-generation Formula Ford cars. The following commercially constructed cars are eligible:

Alexis – MK23, MK 24, MK24B

ADF – through 1981

Caldwell – DL15FF (also a few were made as DL9 in 1975)

Crossle – 25F/30F/32F/35F/45F – 1976 to 1981 (only the 32F/35F/45F are permitted to use a spoiler or tail. Maximum side plate height is 6 inches; of which is not more than 4 inches may be above the horizontal surface of the spoiler or tail. Spoiler or tail may not be longer than 18 inches. The spoiler or tail may be capable of adjustment. Cockpit adjustment is not permitted.

Dulon – MP15/17/19/21

Eagle – (Dan Gurney) – DGF

Elden – PRH10, PRH17, PRH19, PRH20, HD24

Elfin – 620

Hawke – DL11, DL15, DL17, DL19

Hermes – 16/79, 16/80

Huron – FP2

HR2760

Image – FF2/FF2B/FF3/FF4/FF5

Javelin – JL2/JL5

Legrand – MK13/13B/21/27

Lola – T340/T342/T440/T540

Merlyn – MK24/25/28/29

PRS – RH02, 81F

Reynard – 73F/76F/77F/78F

Rostron – RT 77/78

Rowland – 1975/76 RP, RP24-77, RP26-78

Sark 2

Sparton – FF78

Titan – MK8/9

Tiga – FF75F/76F

Van Diemen – FA 73/74/76/78/79/80/81

Viking – NONE – 1st prototypes 1979 but 1st customer car delivered in 1982

Winkelman – became Nomad-Palliser – KHF/1 (WDF4), KHF/2 (WDF5/WDF6)

Zink – Z-10, Z-16

Zues – FF81 (1981)

J.9A FFN 1982 and NEWER FF

J.9A.1 Definition-FFN

1982 and later FF with Kent motor only. Referr to current GCR for rules.

J.10 FV, FV1 and FV2 VINTAGE FORMULA VEE And FV3

J10.1 Definition-Vintage Formula Vee

A formula for single-seat, open-wheel racing cars based on standard Volkswagen 1200 series type I, U.S. model sedan (imported by VW) components, and restrictive in specifications so as to emphasize driver ability rather than design and preparation of the car. No component, of the engine, power train, front suspension or brakes may be altered, modified, or changed, nor be of other than VW manufacture, unless specifically authorized. Engine components must be assembled in standard configuration. Exceeding the wear limits specified in the VW manual or other official VW guides is not prohibited provided that tolerances, dimensions and specifications stated in the 1972 GCR are met. All cars should be prepared to period correct specifications and configurations with the following exceptions and allowances;

J10.2 Weight and Dimensions

Minimum weight - 825 lbs. without fuel and driver.

Wheelbase, Minimum- 81.5"

Wheelbase, Maximum- 83.5"

Track, Front- Standard VW- 51.4"

Track, Rear-49.8" + 1/8"-5/8"

Overall length, Minimum-123"

Overall length, Maximum-127"

Body depth at Firewall, Minimum-25"

Body width at Firewall, Minimum-34"

J10.3 Suspensions

1. The front suspension and steering shall be standard VW sedan as defined herein. The following modifications are allowed:
   a. Removal of one torsion bar.
   b. The use of any anti -sway bar(s) mounting hardware and trailing arm locating spacers. Torrington style bearings are not allowed.
   c. Relocation of the steering gear box to a central position and replacement of the tie rods with others of a suitable length.
   d. Steering column may be altered or replaced and any steering wheel may be used and removable steering wheels are recommended.
   e. Use of any desired Pitman arm. Standard steering arms may be altered; however no modification of the spindle is permitted.
   f. Modification of the standard front torsion bar (s).

g. The rubber portion only of the bump stop may be altered or removed.

h. Caster and toe in/out settings are free.

i. Any shock absorbers. Spring shocks (coil-overs) are not permitted.

g. Offset shock mounts are permitted.

2. The rear axle assembly shall be standard VW sedan as defined herein with axle location provided by a single trailing arm of each axle. The rear axle tube may be rotated about its axis. Coil springs shall provide the primary springing medium, with telescopic shock absorbers mounted inside the springs. Cables, straps, or other positive stops may be used to limit positive camber. An anti-roll bar or camber control device may also be used. When said anti-roll bar or camber control device is removed the required coil springs must continue to perform functionally.
3. Zero roll accepted.
4. Wheels shall be standard 15" x 4 or 4½ .
5. Any DOT treaded race tire may be fitted.

J10.4 Brakes

1. Aftermarket brake drums, backing plates and wheel cylinders that are dimensionally identical and of the same material as OEM VW Type 1 parts are permitted.
2. These cars shall be equipped with a dual braking system operated by a single control.
3. Master cylinders are free.

J10.5 Engine

The engine shall be a standard VW power plant, as normally fitted to VW sedans as defined herein. Any engine part (s), listed by the manufacturer (VW) as a current, superseding, replacement part for the standard VW 1200 series, type I, U.S. model sedan and interchangeable with the original part (s), may be used.

The following components may be replaced with that of other manufacture, provided it is of the same material, dimensionally identical, and meets all other tolerances and specifications stated:

Engine case (aluminum cases are not permitted)
Cylinder head.
Cylinders
Pistons and wrist pins- minimum combined weight without clips or piston rings = 330 grams.
Cam followers-minimum weight=60 grams.
Connecting rods with bolts and small end bushings- minimum weight=440 grams.
Oil cooler
Distributor
Ignition points (drop in modular systems are not permitted)
Distributor cap
Oil pump- exact replica of standard VW pump.
Fuel pump
Crankshaft- minimum weight 16lbs
Crankshaft gear and timing gear
Crankshaft pulley- minimum diameter 6"
Flywheel- minimum weight 12 lbs
Pressure plate
Clutch disc - 180mm
Throwout bearing
Push rod
Push rod tube
Valve covers
Exhaust valves
Valve springs (one per valve)
Oil pump covers may be modified or replaced.

Allowed:

1. Removal of the carburetor air cleaner and choke mechanism. Holes may be plugged.
2. Replacement of standard exhaust system with any exhaust system terminating 1" to 3” behind the rear most part of the body.
3. Balancing of all moving parts of the engine, provided such balancing does not remove more material than is necessary to achieve the balance except where minimum weights are specified.
4. The crankshaft may be ground and the case may be machined to accommodate the use of standard factory oversize/undersize crankshaft bearings, provided the crankshaft location is not changed.
5. Polishing of the intake and exhaust ports, provided such polishing does not enlarge the exhaust port beyond 33 mm, inside diameter, and the intake port beyond 29mm, inside diameter measured at the junction of the seat and aluminum port material.
6. Matching of manifold flanges is permitted.
7. Complete or partial removal of any cooling duct component, except the fan housing. Fan belt origin is unrestricted. Belt tension is free.
8. Solex 28PCI or Solex 28 PICT carburetor required. The use of any jets. Any VW venturi, which may be fitted without alteration to the carburetor body. The venturi must be fitted in the standard position, but only its internal diameter may be machined. The carburetor may be rotated 180" about its vertical axis. A velocity stack may be fitted to the carburetor.

   Modification of the float chamber and/or float valve is not permitted. Float may be weighted. The carburetor must remain untouched with the following exceptions:

   Throttle shaft with throttle plate installed- 0.185" minimum thickness and parallel

   Carburetor body: removal of flashing from internal surfaces is permitted.

   Bore diameter from throttle shaft down not to exceed 1.110"

   Carburetor top: the junction of the bore and bowl may be radiused to a maximum of 1.120"

   Modifications of the float is allowed.
9. Removal of the intake manifold heat riser tube.
10. Removal of metal from the interior of the intake manifold, provided that the following dimensional sizes are not exceeded:

    Downtube: 1.140" O.D. Measurement shall be taken between .500” and 2.00” above the horizontal manifold tube at 2 different locations and averaged.

    Horizontal tube: Shall be measured at 4 locations on either side of the down tube and averaged. The area to be measured is defined as the area between the bend and the center of the downtube and the average shall not exceed .994”. The area from the bend to the head flange shall not exceed 1.020” at any location as measured with a go-no go guage. Minimum weight of manifold is 24 ounces. Brazing to repair cracks is allowed. Brazing for the purpose of adding weight is not allowed. (revised 2-2012)
11. Removal of the armature, brushes, brush holders, and field coils from the generator.
12. The following standard dimensions and tolerances of engine components are included as information and shall be observed:

    Maximum bore: 3.040"

    Stroke: 2.520" +/-0.005"

    Minimum capacity of one combustion chamber in head: 43.0 cc.

    Minimum depth, top of cylinder barrel to top of piston: 0.039".

    The above dimensions may be achieved by machining any previously machined surface, provided the total surface is machined on the same plane as the previously machined surface. The dimensions should be an average of all four cylinders.

13. An oil sump extension may be fitted between the crankcase and the oil strainer cover plate, provided the extension does not extend horizontally beyond the edge of the oil strainer cover plate and the capacity does not exceed 250 cc. The oil pump pickup pipe may be extended into the sump extension.
14. The following standard dimensions are included for information only and shall be observed: Exhaust valve diameter: 1.102" or 1.18" Intake valve diameter: 1.18" or 1.24"
15. Crank case may be machined to permit the use of standard VW camshaft bearing inserts, provided that camshaft location is not changed.
16. A VW "D" camshaft, part nos. 113-109-015D, 113-109-017D, 113-109-019D, 113-109-021D, 113-109-023D, 113-109-025D, 113-109-027D must be used. SCCA published camshaft profile will be followed, plus or minus .002 inches. (Cam timing +/- one degree.)

    Maximum lift at the valve spring collar with zero valve clearance:

    1200 rocker arms: intake- 0.334" and exhaust-0.3165"

    1300/1500 rocker arms: intake- 0.354" and exhaust-0.3365"

    Rocker arms - minimum weight of 80 grams. Must use VW parts
17. Rocker arm wave type washers may be replaced by solid steel washers of suitable thickness and /or the shaft may be replaced with aftermarket rocker shaft assembly
18. Single oil filter of not more than 1 quart total capacity may be installed anywhere within the body from the firewall rearward.
19. Any external oil cooler is allowed- cooler and oil cooler lines must be inside a plumb line extending downward from the outermost edge of the body, to the rear of the firewall.

J10.6 Transmission-Rear Axle

The transmission-rear axle assembly shall be standard VW sedan, as defined herein. The synchromesh components must be in place and operating on all forward gears. Reverse gear must be operable from the driver's seat.

Allowed:

1. Installation of any standard VW gear set which can be fitted without modification of any component of the transmission or of the gear set itself and the transposing of the ring gear to provide proper axle rotation.

   Fully synchromesh transmission:

Gear	Part No.	No. of Teeth	Ratio
1st	113 311 251 A	10:38	3.80
2nd	113 311 261	17:35	2.06
3rd	113 311 275 113 311 275B 113 311275A	22:29 23:29 23:28	1.32 1.26 1.22
4th	211 311 341 113 311 341	28:23 27:24	0.82 0.89
Ring & Pinion	211 517 143A 311 517 143B	8:35 8:33	4.375 4.125

   Partly synchromesh transmission (synchros installed on at least three forward gears):

Gear	Part No.	No. of Teeth	Ratio

1st	113 309 251	10:36	3.60
2nd	113 309 261A 113 309 261	17:33 17:32	1.94 1.88
3rd	113 309 275 113 309 275A	23:28 22:27	1.22 1.23
4th	113 309 341A	28:23	0.82
Ring & Pinion	113 517 141B	7:31	4.43

There are different part numbers for various gears in addition to the ones listed here. This in general indicates changes on the parts such as:

Gear	**Part No.**	**Ratio Difference**
4th	113 311 341 113 311 341A	0.82 with key way 0.82 with splines
Ring & Pinion	113 517 143 113 517 143	4.125 6 mtg. bolts 4.125 8 mtg. bolts

However, there are no other standard ratios than the ones listed here. A gear removed out of a transmission can be identified by the number of teeth.

2. Alteration of the shock absorber mounts.
3. Transmission may not be installed in an inverted position.

J10.7 Frame

The frame/chassis shall be constructed of steel tubing of a maximum diameter or width of four inches and be of a safe and suitable design.

There may be no frame/chassis rigidity or strength derived by means other than the frame tubes. Stressed skin, monocoque or semi-monocoque construction is not permitted, except that.

1. The firewall panel may be rigidly attached to the frame tubes; and
2. The undertray (belly pan) may be rigidly attached to the frame, provided that the curvature of the undertray, measured vertically from its lowest point to the highest point of its attachment to frame members at its sides, may not exceed one inch.

J10.8 Body

The body must be original as manufactured.

The driver's seat must be capable of being entered without the removal or manipulation of any part or panel.

No part of the frame or body shall project beyond a plane connecting the vertical centerline of the front and rear tires.

Air ducting may be utilized, provided it is attached to the body or frame of the car. Ducting may not be made part of or attached in any way to the engine assembly. Wings (airfoils) are prohibited.

Fuel filler necks, caps or lids may not protrude beyond the bodywork of the car.

The use of the following non-standard replacement parts is permitted provided that no unauthorized modification of any other component results.

Allowed:

1. Fasteners (nuts, bolts, screws, etc.)

2. Wiring
3. Gaskets and seals
4. Brake lines and fuel line
5. Spark plugs (1/2" reach maximum)
6. Piston rings
7. Wheel bearings
8. Connecting rod bearings and crankshaft main bearings of same type and size as standard VW.
9. Brake shoes and brake linings
10. Valve guides
11. Battery

All fuel tanks must be properly secured. Fuel cells are required.

FORMULA VEE 1 (FV1)

Same as Vintage Formula Vee, with the following exceptions:

1. Complete removal of fan, fan housing and generator is allowed.
2. Air ducting may be attached to the carburetor or the engine. In the case of forward facing ducting, the ducting must make a 90 degree bend within the bodywork.
3. The use of American Race Tire compound #132, sizes: front 21.5x5.0x15 and rear 22.0x6.0x15 are the approved option.
4. Front end ride height adjuster(s) are allowed provided they are not adjustable from the cockpit. One adjuster per tube.

FORMULA VEE 2 (FV2)

Same as FV and FV1 with the following exceptions:

1. Cars manufactured through 1978.
2. American Race Tire compound #132, sizes: front 21.5x5.0x15 and rear 22.0x6.0x15 required unless race declared a rain race by the Chief Steward at least 30 minutes prior to the scheduled start.
3. Use of a mono-shock suspension is allowed.

FORMULA VEE 3 (FV3) (Newly Added)

1. Cars manufactured 1979 to current.
2. Refer to the current SCCA GCR for specifications with the following exception;

   American Racer tire compound #132 , sizes: front 21.5x5.0x15 and rear 22.0x6.0x15 required unless race is declared a rain race by the Chief Steward at least 30 minutes prior to the scheduled start.

J.11 CR CLUB RACING CLASS (Newly Added)

J11.A This group will be comprised of cars that do not fit VARA's regular vintage eligibility rules, but are properly prepared race cars.

J11.B This run group may not be available at every VARA event. For 2010 there will be no championships or points for this run group.

J11.C This group is open to race prepared cars up to and including cars in current production.

J11.D Cars in this run group should have their own run group and if possible will not be mixed in with any of VARA's regular vintage run groups.

J11.E Closed wheel cars only.

J11.F All cars in this run group must adhere to **ALL VARA RULES and REQUIREMENTS** unless specifically exempted or modified by these supplemental rules.

J11.G Drivers are subject to ALL VARA REQUIREMENTS including licensing, safety, behavior etc. This includes the required driver medical form.

J11.H **Cars and drivers will be accepted on a case by case basis.** Entrants must submit documentation prior to event in order to be accepted. Safety and no contact racing are paramount.

Cars manufactured after 1980 with fuel tank located within the wheel base may be exempted from the requirement to have a FIA approved fuel cell. This exemption will be administered on a case by case basis. Entrant must submit documentation prior to event.

J11.I Purpose built race cars and any car running on slick tires are required to have an FIA approved fuel cell.

J11.J Cars must have a proper fixed back race seat. No reclining seats.