



REGULATIONS AND SPECIFICATIONS FOR THE 2011 NORTHERN REGIONS LOTUS CHALLENGE REGIONAL CHAMPIONSHIP SERIES

MSA NORTHERN REGIONS MOTORSPORT CIRCULAR NR 23/2011 (157331/134)

These regulations apply for the calendar year 2011. (*Updated 25.01.2011*)

CONTROLLERS OF THE CHAMPIONSHIP

The controllers of the championship shall be the MSA Northern Regions Motor sport Committee, which may delegate certain authorities and responsibilities to the Lotus Register of South Africa. In these regulations, any reference to "Committee" shall mean the Racing Committee of the Lotus Register of South Africa and/or a member of the Racing Committee as applicable.

DOMICILE

The Championship is open to all holders of a valid MSA competition license.

THE LOTUS CHALLENGE REGIONAL CHAMPIONSHIP SERIES

INTRODUCTION

The **LOTUS CHALLENGE REGIONAL CHAMPIONSHIP** is a series of race events aimed at attracting wide participation by owners of Lotus cars and replicas. Previous race experience is not a requirement and new competitors are most welcome.

1. OBJECTIVE

1.1. Scratch

The objective is to drive as fast as possible so as to have the lowest race time.

2. CHAMPIONSHIPS & TROPHIES

2.1. The Northern Regions & Lotus Challenge Champion will be the overall winner from Classes A, B or C, based on accumulated scratch points from the respective class. Should there be a tie, then the greater number of class wins followed by second positions and, if required, third positions etc, will be considered in order to break the tie.

2.2. Class winner badges and subsidiary championship trophies will be awarded to driver accumulating most points within:

2.2.1. Class A

2.2.2. Class B

2.2.3. Class C

2.3. Any competitor may be awarded trophies at individual race meetings but has to be a member or affiliate member of The Lotus Register (TLR) or alternatively, paid the prescribed MSA levy of R250.00 to the TLR Race Chairman.

2.4. Points per heat in respect of Class A, Class B, Class C Scratch shall be awarded as follows:

No. of Participants in class

		>5	5	4	3	<3
1st	14	12	10	8	6	
2nd	12	10	8	6	5	
3rd	10	8	6	5		
4th	8	6	5			
5th	6	5				
6th	5					
7th	4					
8th	3					
9th	2					
10th	1					

Number of participants in Class shall be determined as the total number of cars in that class participating in any of Qualifying or Heats 1 or 2. Drivers sharing a car at the same race meeting will be counted as one car only. Individual points scored will not be affected

2.5. Points earned in one class may not be carried over into another class but all points earned will be reflected in the Northern Regions Championship.

2.6. All competitors participating in race meetings at any of Phakisa and Lichtenburg shall earn bonus championship points as follows:

2.6.1. Participation in either of Qualifying, or Heats 1 or 2 – 10 points, or

2.6.2. Participation in any untimed official practice session listed in the event's documentation – 5 points

- 2.7. All races will be championship races, competitors may be allowed to discard points, the number of discards permitted will be communicated before the start of the season. Points thus discarded will include any away race bonus points. Individual heats may not be discarded, the whole race meeting's points must be discarded. Any points lost due to exclusion as a result of any infringements may not be discarded.
- 2.8. Subject to the number of competitors exceeding the minima stipulated in the organiser's regulations for the day, the trophies shall be awarded per event as follows:
- | | | | | | |
|--------|-----------------|---|-----------------|-----------------|-----------------|
| 2.8.1. | Class A Scratch | - | 1 st | 2 nd | 3 rd |
| 2.8.2. | Class B Scratch | - | 1 st | 2 nd | 3 rd |
| 2.8.3. | Class C Scratch | - | 1 st | 2 nd | 3 rd |
- 2.9. Awards per event shall be determined as follows:
- 2.9.1. Classes A, B, & C, Scratch – the the highest number of laps at the lowest total race time across the two heats will determine the winner and subsequent positions in each class (subject, however, to relevant regulations regarding cut-off time that may be applicable within any class).
- 2.10. All championship race heats to be a minimum of 24kms in length.
- 2.11. For purposes of these regulations a 'racing event' is classified as qualifying or race heats

3. CONDUCT OF SERIES & EVENTS

3.1. Competition Licenses

- 3.1.1. Competitors require, as a minimum, a "Regional" level circuit racing competition licence, which is obtainable from Motorsport South Africa in Kyalami Business Park: (011) 466-2440. Excl Invitation class

3.2. Scrutineering & eligibility to compete

- 3.2.1. All competitor vehicles must be presented to, and approved by, the circuit Scrutineers prior to participation in any Qualifying or Race session.
- 3.2.1.1. Should a class change be required, the vehicle must be inspected for conformity in the new class prior to any racing event.
- 3.2.2. All vehicles must comply in full with the stipulated specifications of the class in which they are entered, save that:
- 3.2.2.1. In the event that any non-compliance that by the written agreement of all competitors in that class together with a member of the Committee or the series technical consultant is deemed immaterial to the performance of the non-compliant vehicle, that vehicle shall be permitted to compete in that class for that race meeting only and shall be eligible for inclusion in the results of the event and championship points; and
- 3.2.2.2. In the event that no written agreement is reached according to the foregoing, a Committee member or the series technical consultant may permit the vehicle to compete "by invitation" but be excluded from the event results and the earning of championship points for that class.
- 3.2.3. Vehicles must be made available for technical inspections at any time during a race day. Should a participant's vehicle be found non-compliant with the technical regulations of the class in which they are competing, that participant will be excluded from the day's results and subject to disciplinary action which could result in further penalties being applied.
- 3.2.4. Decals indicating the positioning of Fire extinguishers, Cut-off switches and towing points must be fitted per MSA regulations.
- 3.2.5. Prior to participating in its first event for the season and after any contact incident or material modification, a competitor vehicle must be presented for, and pass, a series inspection conducted by the series compliance officer or series technical consultant.
- 3.2.6. The Race Committee may from time-to-time develop for adoption additional monitoring standards, guidelines, requirements, and/or procedures which it will then apply at its sole discretion.

3.3. Starting Grid Positions

- 3.3.1. The fastest of the recorded qualifying times will determine the grid positions for Heat 1.
- 3.3.2. The finishing positions for Heat 1 will determine the grid positions for Heat 2.
- 3.3.3. Where no official time is established in Qualifying, or a competitor does not finish the previous heat, the competitor concerned will be allocated a starting position for the next heat behind the last car of the class he is competing in. Should more than one competitor in a class be affected, the order will be determined by current championship points standing.
- 3.3.4. Competitors that switch classes before or during a racing event must comply fully with that class's eligibility requirement and will be required to start from behind the slowest competitor of that relevant class. (refer 3.2.1.1)
- 3.3.5. Class C will be subject to a minimum break out lap time which may effect starting grid position, refer to the class C regulation.

3.4. Driver Conduct

- 3.4.1. It is the object of The Lotus Register to encourage the widest possible participation from owners of valuable Lotus marque cars and their derivatives.
- 3.4.2. To this end it is incumbent upon all competitors to refrain from reckless and dangerous driving which might constitute a danger to themselves and/or other competitors.
- 3.4.3. Dangerous/reckless driving or other driver misconduct may result in exclusion.

- 3.4.4. In this respect a yellow card / red card system will be used.
 - 3.4.4.1. A yellow card will result in exclusion from the heat in question and will be in force for the remainder of the current race meeting as well as the following three Lotus Challenge race meetings in which the offending driver competes.
 - 3.4.4.2. If the offending driver receives a second yellow card during this period, this will result in a red card.
 - 3.4.4.3. A red card will result in the driver being excluded from the entire event and banned from the following three Lotus Challenge race meetings.
 - 3.4.4.4. Depending on the severity of the driver misconduct, the Committee may, at its discretion, impose a red card immediately.
- 3.4.5. The Committee may appoint one or more observers to monitor driver conduct.
- 3.4.6. Any action taken by the Committee shall not derogate from any penalty imposed by the officials / organisers of the event, or vice versa.
- 3.5. **New Competitors**
 - 3.5.1. New competitors will be required to identify themselves by the attachment of a ribbon trailing behind the car. The ribbon will be red, white or yellow, 30mm wide and 1 meter in length and be supplied by the competitor
 - 3.5.2. This is a requirement for the first 2 race meetings for any new competitors and will be reviewed thereafter by the Race Committee.
 - 3.5.3. Prior to competing in their first event, competitors must present their vehicle to the series compliance officer for inspection.
- 3.6. **Disputes**
 - 3.6.1. Competitor attention is drawn to Parts IX and X of the MSA General Competition Rules & Appendixes in respect of Protests and Appeals.
 - 3.6.2. Disputes may also be referred to the Committee who may, at their sole discretion, decide on the matter or refer it to MSA.
 - 3.6.3. In the event of any deadlock in the Committee or if a Committee member is a party to the dispute, the Chairman of the TLR or his appointed alternate shall adjudicate.
- 3.7. **Technical Consultant**
 - 3.7.1. It is required that a technical consultant (TC) is appointed by the Committee for the duration of the racing season.
 - 3.7.2. The TC shall get to know and operate within the bounds of the MSA General Competition Rules and circuit racing rule books.
 - 3.7.3. Represent the TLR and act as a liaison between competitors and race officials.
 - 3.7.4. Ensure that the rules of the class are applied and adhered to by all competitors.
 - 3.7.5. Act as a consultant to the Clerk of Course (CoC) and Stewards of the Day.
 - 3.7.6. Where rules are transgressed, it is the duty of the TC to report these to the CoC for a ruling.
 - 3.7.7. Perform eligibility checks as appropriate.
 - 3.7.8. Professional technical consultants may be appointed on an ad hoc / per event basis.
- 4. **VEHICLE ELIGIBILITY, ALL CLASSES**
 - 4.1. **General**
 - 4.1.1. All vehicles of the sports car variety, with a dry weight of under 780kg are permitted. Lotus Exige and Elise vehicles will be allowed, but may only compete in Classes C or X.
 - 4.1.2. Open- wheelers, Lotus Esprits, and Lotus Cortinas are excluded for safety reasons.
 - 4.1.3. It is recorded that these Vehicle Eligibility specifications relate primarily to Lotus Seven-type vehicles and the Committee may, from time to time at its discretion or by amendment to these regulations or by Bulletin permit departures from Vehicle Eligibility requirements for non-Lotus Seven-type vehicles, to the extent that such departures serve not to materially undermine the performance parameters within a given class.
 - 4.1.4. If requested, all electronic data (Data logger and/or engine maps) must be made available to officials for investigation purposes, if no data logger is fitted, a hire unit can be requested to be temporarily fitted.
 - 4.2. **Seven Meter Rule**
 - 4.2.1. All vehicles must conform to the Seven meter rule i.e vehicles must appear as fair representations of the models upon which they are based when viewed from a distance of 7 meters.
 - 4.2.2. The placement of the engine, gearbox and differential must be consistent with the original design concept of the vehicle upon which it is based.
 - 4.3. **Vehicle Dimensions**
 - 4.3.1. The maximum track permissible for a "Lotus 7" derivative vehicle is 1780mm measured at the outside edge of the tyre including the bulge made where the tyre contacts the ground.
 - 4.3.2. The maximum length for these vehicles is 3400mm.
 - 4.3.3. No part of the power unit may protrude outside of the normal engine bay other than necessitated by certain types of carburettors and/or air filters.

4.4. **Body Work**

- 4.4.1. Except in respect of components clearly stipulated in these regulations, aerodynamic aids designed to promote down-force or whatsoever other aerodynamic advantage are not permitted on Lotus Sevens or derivatives. Such items that are factory fitted are permitted on other vehicle types.
- 4.4.2. Cladding is permitted on the underside of the vehicles.
- 4.4.3. On Lotus Sevens or derivatives, nothing is permitted on the underside of the vehicle that, as may be determined by the Committee, serves as a splitter, diffuser, or similar aerodynamic aid.
- 4.4.4. The area above the petrol tank must be completely covered by means of an aluminium cover, secured at its perimeter, to prevent fuel spillage in the event of an accident. The use of any other material shall be subject to the approval of the Committee. Should fuel tanks be positioned within the passenger compartment, they will be isolated from the driver by means of a firewall or be enclosed within a separate metal container which will prevent fuel spillage onto the driver or into the driver's compartment.
- 4.4.5. Airboxes are permitted but only as detailed in appendix B.
- 4.4.6. Air intake scoops (that supply air for combustion purposes) that are positioned on the nose or bonnet must be of similar shape and no greater size than that detailed in Appendix B. Any other option used must comply with the inlet dimensions of Appendix B.
- 4.4.7. NACA type intakes are permitted but must comply with the inlet dimensions of Appendix B.
- 4.4.8. The passenger compartment may be covered from the scuttle rearwards.
- 4.4.9. All wheels must be covered. Cycle fenders are permitted on the front wheels. Should a cycle fender mounting bracket break during an event, the damaged one may be removed for the remainder of the event, but must be repaired by the following race meeting.
- 4.4.10. No elements may be removed from any part of the chassis or bodywork if deemed to be detrimental to the structural integrity of the vehicle.
- 4.4.11. If no tail lights are fitted, a minimum of one red rain light must be fitted. The driver must be able to switch the rain light on when strapped into the seat. The light must be positioned above the lowest point of the rear body work or rear fender and not higher than the drivers shoulders.

4.5. **Engines**

- 4.5.1. Only reciprocating 4-cylinder engines are permitted.
- 4.5.2. Engine capacity limitations are detailed in each individual class's specifications.
- 4.5.3. No forced induction system or use of nitrous oxide is permitted.

4.6. **Drive-train**

- 4.6.1. No four-wheel drive is permitted.
- 4.6.2. No anti-lock braking systems are permitted.
- 4.6.3. No traction-control or similar system of electronic intervention is permitted.
- 4.6.4. Gearbox:- "Paddle shift" mechanisms are not allowed. –
 - 4.6.5.1. See Class eligibility requirements.

4.7. **Suspension**

- 4.7.1. All cars shall have a double wishbone front suspension.
- 4.7.2. Any rear suspension design is permitted.

4.8. **Racing Numbers & Logos**

- 4.8.1. All vehicles will carry Lotus Challenge backing decals and numbers as designated for the series.
- 4.8.2. The Committee may, from time-to-time, determine the positioning, size and quantity of series sponsor logos.
- 4.8.3. Transgressions may result in a loss of points for the event concerned and the withholding of sponsor product.

4.9. **Rollover Bars & Cages**

- 4.9.1. All vehicles must be fitted with an approved Rollover Cage.
- 4.9.2. Unless equipped with a Rollover Cage approved and certified by the FIA for use on that type of vehicle, vehicles must conform to the minimum specification detailed in Appendix C.
- 4.9.3. Side impact Bars are recommended for 2011, and will become mandatory for 2012.

4.10. **Other**

- 4.10.1. Use of Tyre warmers is not permitted.
- 4.10.2. All Vehicles are required to be fitted with a silencer that will ensure that the noise generated will be compliant with the MSA noise regulations.
- 4.10.3. All vehicles must be fitted with an approved fire extinguisher minimum of 1Kg. Plastic mounting brackets are not allowed. The use of Plumbed in systems is permitted.
- 4.10.4. Only unleaded fuel may be used, as detailed in each individual class's regulations.
- 4.10.5. The use of water injection is not allowed
- 4.10.6. The use of any form of intake air cooling inside or in front of the air intake system is NOT allowed. E.g. dry ice in airbox.
- 4.10.7. Only body panels and non- structural components may be manufactured from composite materials e.g. carbon fiber and fiber glass. (wheels are considered to be a structural component)

5. VEHICLE ELIGIBILITY – CLASS A

5.1. In addition to the eligibility requirements applicable to all classes, Class A shall be subject to the following:

5.2. Minimum Weight

- 5.2.1. In any racing event, the combined weight of the car, including driver, helmet, race wear, and whatsoever fluids may be in the vehicle at the time of weighing for cars must be equal or exceed 620kg.
- 5.2.2. Failure to comply will result in exclusion from the results for that heat and relegation on the grid, to a position behind the last car in the class, this includes qualifying
- 5.2.3. Any weight required to be added to attain the minimum weight may be distributed anywhere within the confines of the chassis frame in the plane of the lower tubes and must be attached in a safe and secure manner

5.3. Engines

- 5.3.1. Engine capacity shall, under no circumstances, exceed 2050 cc.
- 5.3.2. Prior to any participation in Class A, competitors are obliged to notify the series technical consultant in writing of the bore and stroke of the engine and make further notification in writing of any changes to these measurements. (Competitors can elect to have their engines Measured and/or sealed to show compliance with this requirement, subject to an inspection fee of R350.00 payable to the official doing the inspection, providing the inspection venue is within 50 Km of the officials home and will be escalated at R100.00 per additional 25km).
- 5.3.3. Unleaded Fuel with a Maximum octane rating of 98 only, may be used, - octane boosters, or other additives are NOT permitted.
- 5.3.4. Engines are not allowed to exceed 9000 RPM at any time during an event.

5.4. Drive-train

- 5.4.1. Choice of gearbox and differential is unrestricted

5.5. Wheels & Tyres

- 5.5.1. Rims restricted to a maximum diameter of 13" and maximum width of 10.5 inches.
- 5.5.2. Tyre Manufacturer – Dunlop.
- 5.5.3. Tyre Type – Radial or Cross Ply racing slick with a maximum sectional width (measured from sidewall to sidewall in a non stressed state as fitted to the rim currently being used) of 230mm.
 - 5.5.3.1. Tyre Supplier: ATS Motorsport Supplies, 20 Schoongezicht Rd, Bergbron.
 - 5.5.3.2. Tyres are limited to 2 sets per vehicle per season (i.e. 8 tyres) (or as might be determined by the race committee under abnormal circumstances, this will be communicated to competitors by means of a bulletin).
 - 5.5.3.3. Tyres shall be marked as follows:
 - Each set of tyres will be marked with two sets of numbers using the TLR branding kit.
 - Two digit Tyre Set Number e.g. "19" or "29" (set 1 or set 2 of 2009)
 - One or Two digit Car Number (1 – 99)
 - Each number shall be preceded by the TLR logo.
- 5.5.4. Tyres must be presented to the Race Committee for branding at an agreed time and place prior to competition. (Tyres thus branded but not used are still considered as part of a competitor's tyre allowance).
- 5.5.5. Competitors are to comply with the system stipulated by the Race Committee for the regulation of the tyres used. Failure to comply may result in a loss of all championship points scored up to the point of the discovery of the transgression.
- 5.5.6. Tyres damaged as a result of on-track incidents or as a result of failure (blowouts, etc.) may be replaced at the discretion of the Race Committee upon their receipt of a written request (See Lotus Challenge Bulletin 2-2006).
- 5.5.7. In circumstances where the circuit officials/organisers (and, alternatively, the Committee or the series technical consultant) have declared a qualifying or race session to be "wet", competitors are permitted to elect to run with alternative tyres/rims without restriction.

5.6. Windscreen & Lights

- 5.6.1. Vehicles may run without windscreens, headlamps, tail-lights, and brake lights.
- 5.6.2. If the windscreen is removed, use of an air deflector is permitted.

5.7. Other

- 5.7.1. Use of in-car lap timing and/or data logging equipment is permitted.

6. VEHICLE ELIGIBILITY – CLASS B

In addition to the eligibility requirements applicable to all classes, Class B shall be subject to the following:

6.1. General

- 6.1.1. Limited to Lotus Seven-type vehicles only.

6.2. Minimum Weight

- 6.2.1. In any racing event the combined weight of the car, including driver, helmet, race wear, and whatsoever fluids may be in the vehicle at the time of weighing must equal or exceed 630 kgs.
- 6.2.2. Failure to comply will result in exclusion from the results for that heat and relegation to behind the last car in the class, this includes qualifying.

- 6.2.3. Any weight required to be added to attain the minimum weight may be distributed anywhere within the confines of the chassis frame in the plane of the lower tubes and must be attached in a safe and secure manner.

6.3. **Engines**

- 6.3.1 Engines are limited to 1600cc Toyota 4AGE 20V series (Black or Silver top). Intermixing of parts from the two engine types is permitted, providing **ALL** other requirements listed below are complied with.
- 6.3.2 Save as expressly permitted or modified by this section, the engine specifications must remain as per the manufacturers standard and be consistent with the FIA Homologation document No, A-5607 dated 01 October 1999 – available upon request.
- 6.3.3 The valve train - including valves, springs, retainers and followers - must remain to manufacturer's standard specifications.
- 6.3.4 The sub- assembly must be per manufacturer's standard specifications.
- 6.3.5 The stroke shall be standard as per the manufacturer's standard specification for that specific engine block.
- 6.3.6 The Piston may not protrude above the gasket surface of the cylinder block. (Measured on the machined portion on the top outer surface of the piston crown, with that piston at TDC.)
- 6.3.7 The compression ratio shall not exceed 10.7:1 and the individual effective combustion chamber volume shall not be less than 41.0 cc, gasket & piston crown included. It is permitted to remove material from the piston crown or combustion chamber to achieve this.
- 6.3.8 Boring of cylinders is permitted to a maximum of .5mm (0.020 inch) as long as the piston is the relevant manufacturer's production component, available off the shelf, and manufactured for that specific engine block. Forged and TRD pistons are NOT permitted.
- 6.3.9 The crankshaft and conrods must be standard production components. Balancing is permitted but one conrod must remain untouched (polishing is not allowed). Manufacturer identification marks may NOT be removed. Steel crankshafts (incl Standard 4AGZ – supercharged) are NOT permitted. Material may only be removed for balancing purposes in the designated areas. The total mass of the conrod assembly is not to be less than 475 grams (measured without bearing shells and with standard bolts).
- 6.3.10 Engine and component assembly bolts are unrestricted.
- 6.3.11 The original Toyota 4AGE flywheel may be balanced and or lightened. Alluminium or remanufactured flywheels are NOT permitted.
- 6.3.12 The standard pressure plate must be retained.
- 6.3.13 Multiplate carbon fibre type clutch systems are NOT permitted. A Copper button clutch plate is permitted.
- 6.3.14 Normal induction must be by way of a single fuel injector per cylinder only. Standard throttle bodies with a butterfly size not exceeding 45mm must be used.
- 6.3.15 The fuel pressure regulator must be standard Toyota 4AGE 20v (non-adjustable) and pressure may not exceed 3.2 bar at 4000 rpm and above (no vacuum).
- 6.3.16 Fuel pump voltage during test to be equal to battery voltage.
- 6.3.17 An Adapter, obtainable from the race committee, which will facilitate the checking of fuel pressure, must be fitted to the fuel line.
- 6.3.18 Ram tubes are NOT restricted.
- 6.3.19 Fuel injectors must be Standard Toyota 4AGE 20v and capable of identification by part number.
- 6.3.20 Air intake or filtration system as per Appendix B.
- 6.3.21 Intake and exhaust port dimensions are free however metal may NOT be added to the existing port.
- 6.3.22 The exhaust system is free but must comply with MSA noise regulations.
- 6.3.23 Dry sump Lubrication is NOT permitted.
- 6.3.24 The sump pan may be modified and baffled.
- 6.3.25 A separate electric water pump is NOT permitted.
- 6.3.26 A properly functioning alternator is required to be fitted to the engine. Engine must be able to start with onboard battery. Assisted starting with secondary battery in pits, in order to save onboard battery is permitted.
- 6.3.27 Sealing tags be fitted to the sump and cylinder camshaft cover so that the bottom end and cylinder head may be sealed upon assembly. Competitors must have their engines inspected and sealed to show compliance with these requirements, an inspection fee of R350.00 will be payable to the official doing the inspection, providing the inspection venue is within 50 Km of the officials home and will be escalated at R100.00 per additional 25km
- 6.3.28 Crank pulley may be machined to a single pulley and may be balanced.
- 6.3.29 Head gasket must be standard Toyota 4AGE 20v – TRD head gasket NOT permitted.
- 6.3.30 Spark plugs are not restricted.
- 6.3.31 An oil cooler is permitted.
- 6.3.32 Type of engine management system is not restricted.
- 6.3.33 Launch control system (stand alone or built in to ECU) is NOT permitted.
- 6.3.34 Water injection is NOT permitted.

- 6.3.35 Unleaded 95 octane Fuel only may be used, - octane boosters, or other additives are NOT permitted.
- 6.3.36 Main and Big-end bearings must be standard Toyota 4AGE 20v. TRD bearings are NOT permitted. Undersize grinding is permitted to .25mm (0.010 inch) undersize.
- 6.3.37 The piston and gudgeon pin may NOT be modified save that material may be removed from the piston balance tabs for balancing purposes only. All 3 piston rings must be fitted.
- 6.3.38 Camshafts – Standard Toyota 4AGE 20v, profile and lift may NOT be reprofiled
The standard camshafts are to be fitted and may not be modified in any way. The following dimensions are applicable
The cam lobes to conform to the following dimensions.

Inlet Min Dia	32.0 mm ± 0.1mm
Inlet Max Dia	40.5 mm ± 0.1mm
Exhaust Min Dia	32.2 mm ± 0.1mm
Exhaust Max Dia	40.2 mm ± 0.1mm

Maximum lift – Inlet	8.5mm ± 0.2mm
Maximum lift – Exhaust	8.1mm ± 0.2mm

- 6.3.39 Vernier Cam pulleys and off-set dowel pins in cam pulleys are NOT permitted. Location of pulleys shall be per manufacturer's original specification and non-adjustable by any means.
- 6.3.40 Cylinder Head may be skimmed. (But the combustion chamber volume must conform to rule 6.3.7 above)
- 6.3.41 Cylinder head may be gas flowed, which includes valve guide protrusion being removed..

6.4. **Drive train**

- 6.4.1. Sequential type gearboxes are NOT permitted.
- 6.4.2. Straight cut gears and / or dog engagement are NOT permitted.
- 6.4.3. Maximum of five forward gears.
- 6.4.4. Type / manufacturer of gearbox is not restricted subject to all other provisions herein being met.
- 6.4.5. Standard synchro rings may be replaced by steel rings.
- 6.4.6. Bearings may be replaced by heavy duty items
- 6.4.7. Choice of differential is unrestricted.

6.5. **Wheels & Tyres**

- 6.5.1. Rims restricted to - 15" Diameter and a maximum width of 7J. Split rims are not permitted
- 6.5.2. Tyre Manufacturer – Dunlop.
- 6.5.3. Tyre Type – "Type R". Size: 195-55-15. Compound: H1.
- 6.5.4. Tyres must have a minimum of 1mm depth of tread measured across 80% of the tread surface at the completion of any racing event. Transgressions shall result in a loss of championship points for that heat and/or relegation to the rear of the grid as applicable for the next heat or race.
- 6.5.5. Tyre Supplier: ATS Motorsport Supplies, 20 Schoongezicht Rd, Bergbron.
- 6.5.6. Tyres are limited to 2 sets per vehicle per season (i.e. 8 tyres), (or as might be determined by the race committee under abnormal circumstances, this will be communicated to competitors by means of a bulletin).
- 6.5.7. Tyres shall be marked as follows:
Each set of tyres will be marked with two sets of numbers using the TLR branding kit.
Two digit Tyre Set Number e.g. "19" or "29" (set 1 or set 2 of 2009)
One or Two digit Car Number (1 – 99)
Each number shall be preceded by the TLR logo.
- 6.5.8. Tyres must be presented to the Committee for branding at an agreed time and place prior to competition (tyres thus branded but not used are still considered as part of a competitors tyre allowance).
- 6.5.9. Competitors are to comply with the system stipulated by the Committee for the regulation of the tyres used. Failure to comply may result in a loss of all championship points scored up to the point of the discovery of the transgression.
- 6.5.10. Tyres damaged as a result of on-track incidents or as a result of failure (blowouts, etc.) may be replaced at the discretion of the Committee upon their receipt of a written request (See Lotus Challenge Bulletin 2-2006)
- 6.5.11. In circumstances where the circuit officials / organisers (and, alternatively, the Committee or the series technical consultant) have declared a qualifying or race session to be "wet", competitors are permitted to elect to run with alternative tyres without restriction, however rim diameter restricted to 14 or 15 inch and width a maximum of 7J.

6.6. **Windscreen & Lights**

- 6.6.1. Vehicles may run without windscreens, headlamps, tail-lights, and brake lights.
- 6.6.2. If the windscreen is removed, use of an air deflector is permitted.

6.7. **Other**

- 6.7.1. Use of in-car lap timing and/or data logging equipment is permitted.

7. VEHICLE ELIGIBILITY - CLASS C

7.1. Vehicles competing in this category shall comply with the Road Traffic Ordinance and be roadworthy in all respects, as may be determined by the race committee,

7.2. Engines

7.2.1 Engine capacity shall under no circumstances exceed 2050 cc.

7.2.2 Only unleaded 95 octane fuel may be used - **octane boosters, or other additives are NOT permitted**

7.3. Drive-train

7.3.1. Choice of differential is unrestricted.

7.3.2. Sequential gearboxes are not permitted.

7.4. Wheels & Tyres

7.4.1. Rims and tyres are free from restriction subject to the points below.

7.4.2. Any road-legal tyre may be used.

7.4.3. Tyres must have a minimum of 1mm depth of tread measured across 80% of the tread surface at the completion of any racing event. Transgressions will result in a loss of championship points for that heat and relegation to the rear of the grid as applicable for the next heat.

7.5. Windscreen & Lights

7.5.1. The front windscreen may be replaced with polycarbonate (Lexan) material conforming to the stock windscreen dimensions and a minimum of 6mm thick, mounted at the correct angle.

7.5.2. In the case of the Lotus 7 or replica, a full standard type windscreen with a minimum vertical height of 300mm, and must be fitted at the correct angle. The use of Polycarbonate (Lexan) material is permitted.

7.5.3. Vehicles must have all necessary lights in working condition and facing the correct direction to comply with roadworthiness requirements.

7.6. Other

7.6.1. No straight through type exhaust systems will be permitted. (Silencers must be fitted).

7.6.2. Use of in-car lap timing, pit board and/or data logging equipment from which timing data can be viewed by the competitor on-track is not permitted. To clarify, the use of any form of lap timing is not permitted.

7.6.3. All ancillary systems with the exception of windscreen wipers and hooter, that are required by the licensing authorities must be fitted and operational

7.6.4. Competitors in class C are be required to conform to roll-over protection Appendix C 1.

7.6.5. The passenger seat may be removed.

7.7. Class C Cut-off Lap Times

7.7.1. The Class C cut-off time will be determined by the Race Committee for each circuit and may be published from time to time by MSA Bulletin and/or Lotus Challenge Bulletin.

7.7.2. Should any competitor better the circuit cut-off time in official qualifying, that competitor shall be deemed not to have recorded a qualifying time for the purposes of determining grid positions and be given a grid position behind the last car in class C.

7.7.3. Any competitor bettering the circuit cut-off time in an official race will be excluded from that heat and excluded from earning any championship points in that heat. They will also be required to start from behind the last car in class C for the second heat.

7.7.4. **If more than one car is affected the order will be determined by the margin of breakout. Largest at the back**

8. PARTICIPATION BY INVITATION (Class X)

8.1 For the purposes of accommodating as many competitors as reasonably possible, competitors may be permitted to compete by invitation at the discretion of the Committee.

8.2 Vehicles competing by invitation shall not be eligible for inclusion in the results of any championship class or for championship points but shall be classified separately. Award of trophies, if any, shall be at the discretion of the event organizers and/or the Committee.

8.3 A competitor who has competed in a championship class previously during the course of the season may not elect to compete by invitation without the written agreement of all other competitors in that championship class present at the event together with a member of the Committee or the TC.

8.4 In applying their discretion when considering permitting a vehicle to compete by invitation, the Committee shall give due regard to the following:

8.4.1 The performance potential of the vehicle – it being a principle for competing by invitation that the potential or proven performance of the vehicle shall not be such that it might be reasonably capable of bettering a time four seconds slower than the prevailing Class A lap record at the relevant circuit.

8.4.2 Vehicles must conform to the safety requirements, including roll over protection applicable to the series.

8.4.3 Permitted vehicles must comply substantially with the provisions of 4.1, 4.2.1, 4.3, 4.6.1, 4.8. 4.9. 4.10. 7.4.2

- 8.4.4 Departures from the provisions of 4.5 may be considered save that no injection of nitrous oxide or other performance enhancing additives shall be permitted. Unleaded Fuel with a Maximum octane rating of 95 may be used, - octane boosters, or other additives are NOT permitted.
- 8.5 Vehicles accepted for participation by invitation will be allocated grid positions per rule 3.3.
- 8.6 Holders of Club (and other) Competition Licenses shall be eligible for invitation and the requirements of MSA Bulletin 46(07) may be waived.
- 8.7 As might be generally applicable, participants by invitation shall comply with all of regulation 3.
- 8.8 Acceptance for participation by invitation in any instance shall not serve to commit and/or bind the Committee to permit participation by invitation in any further or future event and permission to participate by invitation may be withdrawn by the Committee at any time without notice or warning.
- 8.9 Guidelines and parameters governing eligibility for participation by invitation may be amended or supplemented at any time by issue of a Lotus Challenge Bulletin which shall then be read in conjunction with these regulations.

APPENDIX A

SAFETY LIST

1. Roll-over protection

Compulsory all Classes

6 Point Roll cage, FIA approved or to specifications described in **Appendix C item 1**

Side impact is recommended for 2011, and will be mandatory for 2012

2. Fire Extinguisher

Compulsory all Classes

Fire extinguisher of 1 kilogram minimum extinguishant capacity must be fitted. Proof of service or purchase must be furnished in accordance with MSA regulation GCR 257. (6 months if not fitted with a pressure gauge)

Fire extinguisher to be within reach of driver with harness done up.

It is permitted to remove the passenger seat to allow optimal placement of the extinguisher

A decal should be positioned to show the marshals the location of the extinguisher.

Plastic mounting brackets are not permitted.

Recommended all Classes

On closed cars, it is recommended that the extinguisher be mounted in a position where it may be reached from outside the car.

A fully plumbed in system (for driver's & engine compartment protection) is highly recommended

3. Suspension

Compulsory all Classes

Where Triumph-type uprights are used on vehicles shod with slick tyres, it is required that the trunnion be replaced with a spherical joint. This has additional benefits in terms of suspension geometry.

Suspension bushes/spherical joints to be in good condition and free of play.

Suspension should be free to travel through a full range of movement without interference.

Welds on suspension arms to be of good quality and continuous around all joints.

Bolting should be Grade 8.8 minimum throughout.

Recommended Classes B & C

Where Triumph-type uprights are used, it is recommended that the trunnion be replaced with a spherical joint. This has additional benefits in terms of suspension geometry.

4. Chassis

Compulsory all Classes

Steel hoops be fitted to restrain a broken prop shaft.

Modified / strengthened steering rack mounting bracket on all Birkins

No structural members which may be deemed to affect the integrity of the car shall be removed from a chassis for any reason whatsoever

Recommended all Classes

All tubes to be in good condition and tubes that should be straight must be straight.

Mounting points for suspension, engine, gearbox, safety belt and steering rack to be adequately supported.

All welds to be of good quality.

5. Wheel Studs

Compulsory all Classes

Wheel nuts should have at least 1.5 x diameter's engagement with studs. Where a closed nut is used, it must have a 3mm hole drilled to enable the thread engagement to be measured.

6. Brakes

Compulsory all Classes

Brake calipers to be attached to suspension using Grade 8.8 or better bolts.

Brake discs should not show evidence of structural cracking.

Brake hoses should be in good condition and must not rub against moving parts such as wheels, tires or the ground.

Brake fluid to be replaced at least yearly, and should appear clean and be uncontaminated. The level of brake fluid should be within limits before every race.

Brake pads must have at least 3mm of friction material left before every race.

Dual circuit brakes are to be fitted to all cars.

7. Fuel system

Compulsory all Classes

Fuel lines should be in good condition and well removed from moving objects and heat sources such as exhaust systems.

Fuel should not be able to drip onto exhaust or distributor.

The tank is to be partitioned in such a way that fuel cannot spill onto the driver in the event of an accident. (Firewall)

All fuel lines going through the cockpit are to be steel or steel braided.

Fuel tank to be in good condition.

Fuel tank to be adequately mounted.

Plastic tanks or fuel cells are strongly recommended.

Grommets are to be fitted where flexible hoses go through body panels.

All joins in pipes are to be supported.

8. Electrical system

Compulsory all Classes

Battery cut-off switches to be accessible to marshals from outside the car as well as being accessible to the driver when fully belted into the car.

A decal should show the position of the cut-off switch and the direction to turn the power off

Batteries to be securely mounted and covered if mounted in the driver area.

Wiring to be in good condition and connections should be insulated.

Grommets should be fitted where wiring goes through metal panels.

When the Battery cut-off is switched off, it must completely cut ALL electric power and the engine must stop.

9. Clothing

Compulsory all Classes

Fire Retardant Racing overalls to be worn by all competitors.

Fire retardant shoes and gloves to be worn by all competitors.

Helmets are to be worn by all competitors and must be in good condition.

Fire retardant Balaclava to be worn by all competitors.

Recommended all Classes

The use of a correctly fitted Hans Device is Highly recommended.

10. Seat Belts

Compulsory all Classes

Safety belts/harnesses Five or six Point, including Crotch strap shall be fitted in accordance with the requirements of the MSA safety commission. The harness must be in good condition and securely mounted to well-supported areas of the chassis. All belts must be within the expiry date

11. Other

Compulsory all Classes

All cars shall, at a minimum, have 2 mirrors, positioned such as to have an unobstructed view behind the car.

Sump, gearbox and diff drain plugs and oil filters shall be safety-wired in place.

Indicated towing points are to be provided front and rear.

No loose carpets or other items shall be present in the car.

All light glass to be taped.

Engine oil to breathe into a catch tank or inlet manifold.

Cooling system to breathe into a catch tank.

No retreaded tires allowed.

APPENDIX B

Inlet Ducts, Scoops & Air boxes.

1. Inlet Ducts or Scoops

An inlet duct or air scoop (the sole purpose of which is to supply air to the engine for combustion purposes), as detailed below is allowed to be fitted to the nose only.

1.1 Types of Duct

Types permitted are:- **NACA** type (submerged into the bodywork), protruding (above the bodywork) or concealed (taking air from within the confines of the vehicle).

1.1.2 Protruding scoop (refer Figure 1)

a) Inlet Dimensions.

The **maximum** dimensions of the opening or air inlet is 180mm wide by 45mm high.

b) Height.

The **maximum** height permitted is 57mm measured from the highest point of the scoop to the surrounding bodywork closest to the scoop.

c) Width of scoop.

The **maximum** width is not restricted as long as the aperture does not exceed the dimensions in a) above.

d) Length of scoop.

The length is limited to 350mm.

e) Quantity.

The sizes mentioned in a) above is for a single duct. If more than one duct is used, their individual areas must be added up, and that Total may not exceed 8100sq. mm

1.1.3 NACA Duct (refer Figure 2)

a) Inlet Dimensions.

The **maximum** dimensions of the opening or air inlet 180mm wide by 45mm deep

b) Depth.

The **maximum** depth allowable is 57mm

c) Length of Duct.

The length is limited to 350mm.

d) Width.

The **maximum** width of the duct is 180mm.

e) Quantity.

The sizes mentioned in a) above is for a single duct. If more than one duct is used, their individual areas must be added up, and that Total may not exceed 8100sq. mm

1.1.4 Concealed

a) Inlet Dimensions.

The **maximum** dimensions of the opening or air inlet 180mm wide by 45mm deep, or a Total area not exceeding 8100sq. mm

2. Airboxes

2.1 Should an external air box be used, it must conform to the details below (refer figure 3)

a) The air box dimensions are:

Width:- 100mm (front), 50mm(rear)

Height:- 120mm (front & rear) measured at the highest point.

Length:- 400mm including any ducting for connecting to filters or scoops.

All these dimensions are maximum and are measured using a vertical line drawn from the upper chassis tube as a datum.

b) The airbox may not protrude above a horizontal line drawn from the centre of the scuttle firewall at the bonnet seating flange when viewed from either the left or right side of the car. Should a one piece bonnet be used a reference point will be determined and used as a datum point.

c) The airbox's forward point may not extend beyond the forward edge of the bonnet.

d) The airbox must not have any openings facing into the airstream.

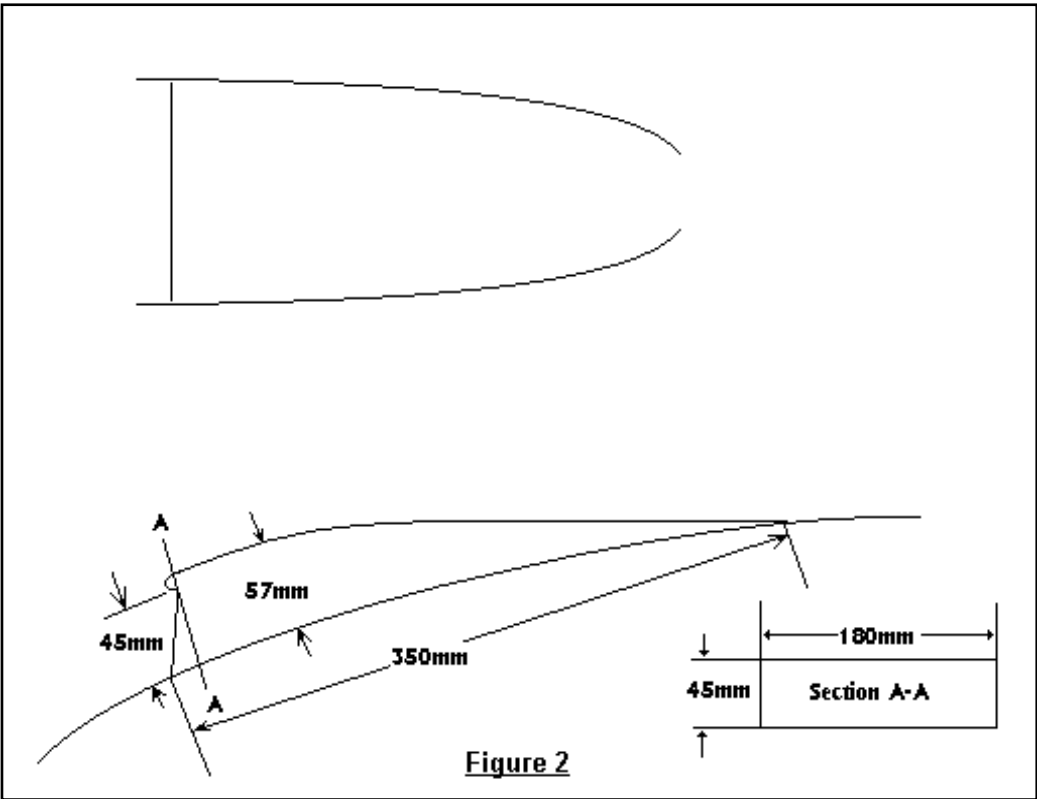
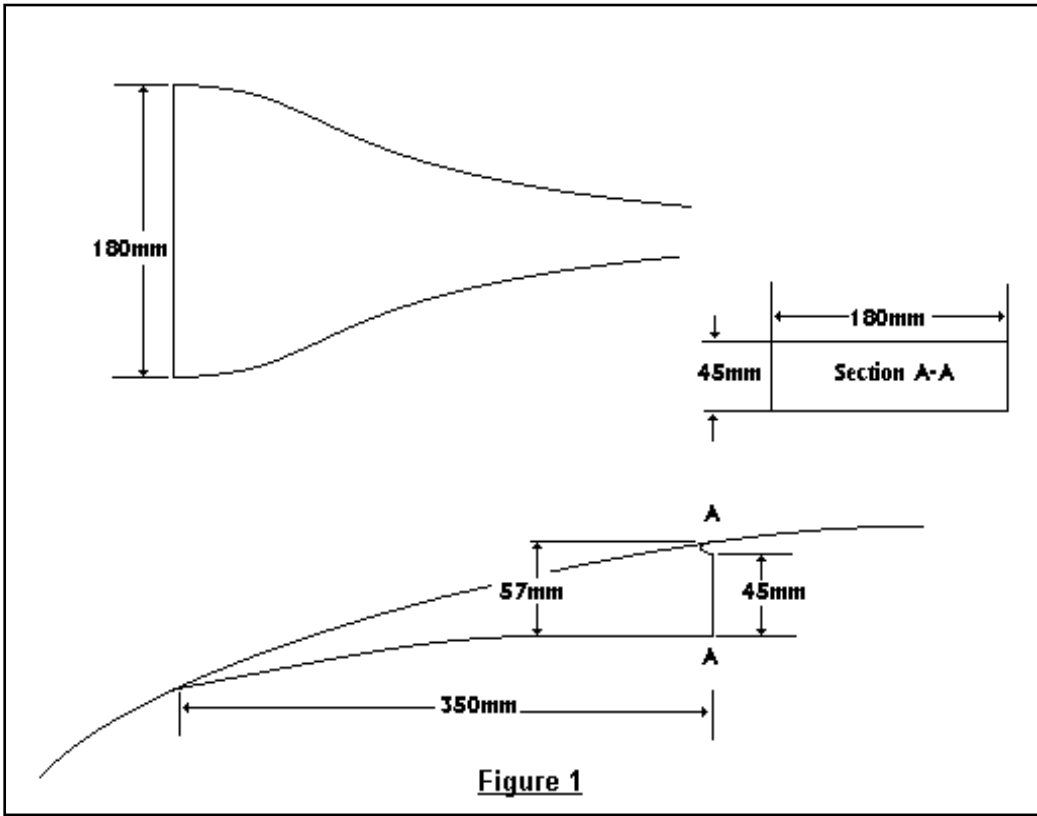
e) The airbox is permitted to be connected to either of the inlet options detailed above.

Exceptions

Should any duct, scoop or air box fall outside the definitions and sizes listed above, adequate and timely written representation requesting consideration for approval must be made to the Committee who shall determine the eligibility of the duct at their discretion.

No duct will be allowed should the area of the aperture be greater than 8100 sq. mm.

Airscoops or ducts mounted below the nose, and supplying or extracting air for cooling or other reasons may not be wider than the chassis at their at their furthestmost forward mounting point, nor extend below the chassis frame, but will fall under Items 4.1 to 4.4 of the **Regulations and Specifications for the Lotus Challenge.**



Airbox sizes

Line from top of scuttle

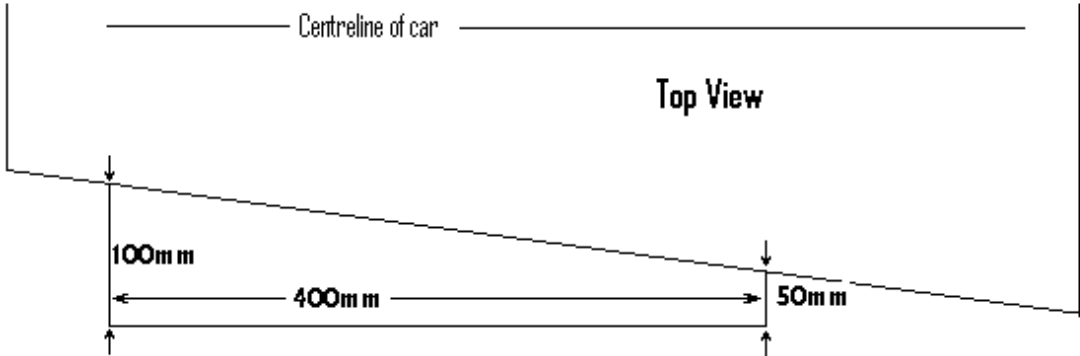
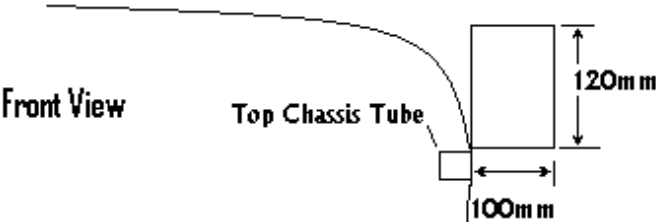
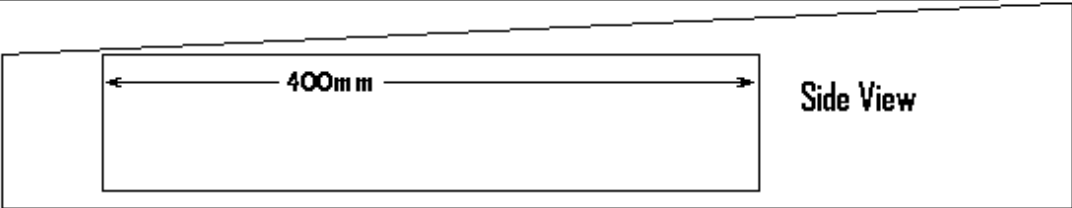


Figure 3

APPENDIX C

Roll over protection.

1. Roll cage specification applicable to all classes (Except Lotus 23 type cars)

All cars (except Lotus 23 type cars) must be equipped with a rollcage consisting, at a minimum, of a structural framework made up of:

1. a main rollbar, and
2. a front rollbar, and
3. their connecting members, and
4. one diagonal member, and
5. backstays, and
6. a minimum of 6 mounting points, and
7. all generally configured in accordance with Figure 1

Unless fitted with an FIA certified and approved Roll Cage (minimum of 6 mounting points) for use on that type of vehicle (**The original identification plate must be attached**), the following minimum specification detailed below is applicable to **ALL (Except Lotus 23 types) Class A vehicles**.

Main rollcage structure: (Refer Figure 1 below)

Two safety rollover structures (front and rear) are mandatory.

The rear structure tubing must be straight and vertical when viewed from the side, front or rear of the car. When fitted to an enclosed car (e.g. Exige), it must follow the internal contour of the bodyshell as close as possible. It must have at least 1 diagonal brace, left to right, lowest point at the base plate on the passenger side of the vehicle.

The front structure must be separated by a minimum of 600 mm from the rear structure, measured at its nearest point. It should loosely follow the profile of a standard windscreen as fitted to a road going "Seven" or the internal bodyshell if fitted to an enclosed car. The vertical tubes must be straight and can have a maximum of 1 bend on their lower part.

The front structure must be connected to the rear structure by tubes attached near the top outer bends of the forward and rear main structures on both sides of the car.

At least 1 diagonal member must connect the front & rear rollover structures, its front connection must be at the driver's side. These connections must be at the same location as the side tube joints. This member may be replaced by two curved tubes (U shaped) the legs of each "U" must attach at the attachment points of the side tubes connecting the front and rear roll structures and the base of the "U" must meet on the longitudinal centreline of the roll structure.

Two backstays must be fitted, these must meet the main rear rollover structure at the side tube joints. For certain types of enclosed cars these backstays may be omitted with the approval of the race committee and circuit scrutineers. The rear of these stays must locate on the factory mounting points for Sevens.

The base plates for the main Rollover structures must be made from at least 3mm steel plate. Mount plates for the backstays must be at least 2mm.

If not forming part of the seat construction, a head restraint must be fitted to the rollcage, of minimum dimensions 100x100mm and positioned so that the drivers head cannot move past it under rearward forces or get trapped between the rollbar and head restraint. The drivers head should be within 50mm of it when normally seated.

The fwd & rear safety rollover structures must be symmetrical about the lengthwise centre-line of the car.

The fwd & rear structures must have at least one 5mm hole drilled through to enable tubing wall thickness to be verified.

The forward and rear rollover safety structures must be made in one piece without joints. Their construction must be smooth and even, without ripples or cracks. The centreline bend radius must be a minimum of 3 times the tube Dia.

The areas within the roll cage structure shall remain entirely open and shall not, when viewed from any angle, be covered with, or supplemented by, any additional material which, as might be determined by the race committee, might serve, or be intended to serve, as an aerodynamic aid.

The top of the driver's helmet may not be less than 50mm below the top edges of the two roll over structures. Any extension added to the main structure to facilitate this, may not be higher than 100mm above the main roll hoop.

It is recommended that rollcage tubes within 150mm of the driver's helmet are covered with a suitable energy absorbing material.

The tubes may not carry fluids.

2. Tubing Specifications

1. All compulsory elements of the rollcage structures shall be - Cold drawn unalloyed carbon steel
2. Minimum dia. 38mm
3. Min wall thickness x 2mm

All bolts securing the roll cage must be at least grade 8.8"

Optional reinforcing members may be fitted (shaded items in fig. 1) but none may extend forward of the front roll hoop although an additional diagonal brace within the top of the rollcage is recommended; Side-intrusion bars may be fitted external to the chassis and/or incorporated into the rollcage structure but may not extend further forward than the front of the driver foot well.

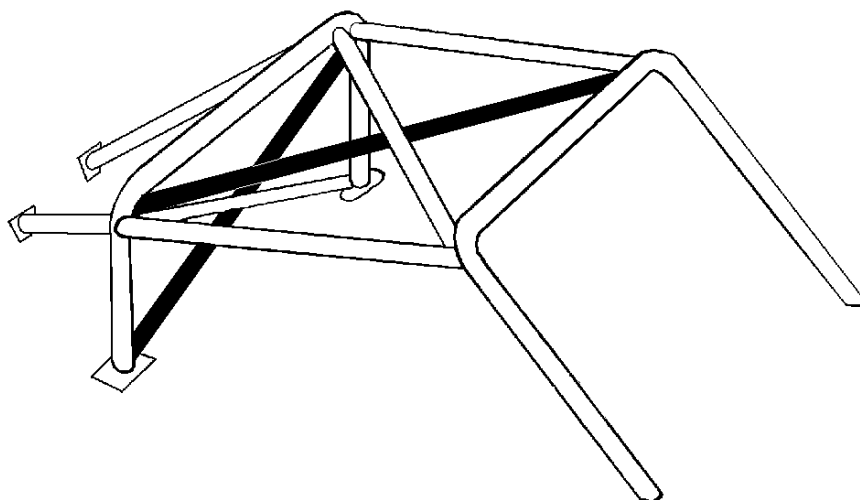


Figure 1

3. Lotus23 type cars

Lotus 23 type cars must be equipped with a roll bar consisting, at minimum, of a structural framework made up of:

1. a main rollbar, and
2. two forward diagonal members with mounting points on either side of the driver's compartment footwell area.

All other class A specifications will be applicable.

Lotus Challenge Bulletin 2-2006

Two Tyre Rule *Interpretation and Application*

The following represents the Race Committee's interpretation of the so-called "two-tyre" rule and its application in the context of the permitted number of tyres that a competitor may use during the course of a single season.

1. Intent of Rule
 - a. The rule was introduced (for Class A and, by extension, A-1600) for the purpose of containing costs and, by implication, to require that competitors 'manage' the longevity of their tyres through considered and disciplined husbandry of their tyre allocation through appropriate driving and set-up practices.
 - b. The race committee believes these principles must guide their interpretation and application of the rule.
2. Number of permitted tyres:
 - a. The so-called "two-tyre" or "two-set" rule might be more properly described as the "eight-tyre" rule as competitors are permitted to use up to eight branded tyres during the course of the season.
 - b. Four tyres are branded as "set-one" and Four as "set-two", but there is no limitation upon the combination of tyres from within these two "sets" that may be used during the season which therefore allows competitors to mix-and-match their branded tyres irrespective of the "set" from within which each of the tyres may be drawn.
 - c. This interpretation would permit, for example, the utilization during the season of six front tyres and two rear tyres rather than the more 'conventional' four / four split.
3. Branded tyres are allocated **by driver** and not *by car*:
 - a. Our championships are for drivers and not for vehicles.
 - b. If a competitor changes vehicles during the course of a season for whatever reason (temporarily or permanently), the driver remains 'tied' to the tyres that might have already been branded and must use those (or those of the remaining permitted allocation) on the replacement vehicle in order to remain eligible for classification in the race results and championship points.
4. Replacement of Damaged Tyres:
 - a. Under certain circumstances and upon written request, the race committee has the discretion to permit the replacement of a 'damaged' tyre with one of fundamentally similar remaining life.
 - b. This discretion is interpreted as being for the purpose of dealing solely with extraordinary tyre damage caused in circumstances that are clearly distinct from those that might relate to driver or set-up error (e.g., sidewall damage from impact or accident might justify discretionary replacement)
 - c. Therefore, this discretionary replacement is not available in circumstances where a tyre has sustained an uneven pattern of wear (e.g. through poor set-up) or has been flat-spotted (e.g. through poor driving).
 - d. While it might be conceivably claimed that a flat-spot has resulted in consequence to the conduct of another driver (e.g. in reaction to someone else's accident), this will be viewed by the race-committee as (to use a golfing analogy) "rub-of-the-green" and, therefore, not good grounds for replacement.
 - e. By example, and for the purposes of clarity, a tyre which has sustained accidental and extraordinary damage as described above may be replaced at the discretion of the race committee with one of fundamentally similar remaining life. But, if the damaged tyre for which replacement is sought has also been flat-spotted (say, to the extent that canvas is exposed rendering it unsafe on those grounds alone) replacement of that tyre becomes impossible on the grounds that the replacement tyre (in order to have fundamentally similar remaining life) would also carry the same flat-spot damage and, therefore, be unsafe for racing.
 - f. If, by the preceding example, replacement of the damaged tyre becomes impossible and the driver has exhausted his full allocation of eight tyres for the season, the driver may continue to race on substitute tyres but will have become ineligible for classification within the results and for championship points.
 - g. By reference to the foregoing intent of the so-called "two-tyre" rule, the committee believes this interpretation and application of the damaged tyre provision to be consistent with the objective of promoting prudent tyre use in a manner that is fair to all competitors.