

SPEEDWAY SEDANS AUSTRALIA INC. SPECIFICATIONS . 3

SECTION 1 – POLICY, PROCEDURES AND DEFINITIONS.....	3
1. <i>INTERPRETATION:</i>	3
2. <i>AUTHORITY TO EXCLUDE:</i>	3
3. <i>GENERAL:</i>	4
4. <i>CONSTRUCTION:</i>	4
5. <i>DECLARATION OF COMPLIANCE:</i>	5
6. <i>REGISTRATION:</i>	5
7. <i>MEASURING OF CARS:</i>	6
8. <i>PENALTIES:</i>	7
9. <i>GLOSSARY OF TERMS & DEFINITIONS:</i>	8
SECTION 2 – SAFETY EQUIPMENT.....	8
1. <i>SAFETY EQUIPMENT:</i>	8
2. <i>INSTALLATION OF DRIVER RESTRAINT SYSTEMS:</i> <i>Fig 3</i>	11
3. <i>WINDOW NET:</i>	14
4. <i>PADDING:</i>	16
5. <i>FIRE EXTINGUISHER:</i>	16
6. <i>SEAT:</i>	16
SECTION 3. – CLASS SPECIFICATIONS – NATIONAL 4 CYLINDER SEDAN.....	18
1. <i>BODY/ROLLING SHELL:</i>	18
2. <i>ROOF NUMBER:</i>	20
3. <i>GENERAL CONSTRUCTION:</i>	20
4. <i>ROLLCAGE:</i>	21
5. <i>ADDITIONAL MINIMUM BARWORK:</i>	24
6. <i>FUEL TANK PROTECTION:</i>	26
7. <i>BUMPER BARS & OPTIONAL EXTERNAL BARWORK:</i>	27
8. <i>TOWING ATTACHMENTS:</i>	29
9. <i>WINDSCREEN MESH:</i>	29
10. <i>DOOR PLATES:</i>	30
11. <i>HEAD PLATE:</i>	30
12. <i>TRACK:</i>	31
13. <i>WHEELBASE:</i>	31
14. <i>RUB STRIP (optional):</i>	32
15. <i>ENGINE:</i>	34

16. BATTERY AND ELECTRICAL SYSTEM:.....	35
17. EXHAUST SYSTEM:	36
18. COOLING SYSTEM:.....	37
19. TRANSMISSION:.....	38
20. STEERING:	39
21. SUSPENSION:	40
22. WHEELS:.....	40
23. TYRES:.....	41
24. BRAKES:	41
25. FUEL:.....	42
26. FUEL TANK AND FUEL SYSTEM:.....	42

SPEEDWAY SEDANS AUSTRALIA Inc. SPECIFICATIONS

SECTION 1 – Policy, Procedure s and Definitions

1. INTERPRETATION:

The Speedway Sedans Australia Inc. (SSA Inc.) shall direct the enforcement of these specifications in all aspects. The SSA Technical Committee shall be the sole authority for the interpretation of the specifications as contained in this book and any circularised amendments.

AMENDMENTS to this Manual may be made during the life of this Manual for the reasons as set down in SSA Inc. Policy governing such amendments: The amendments will be approved by the SSA Inc. Board and circularized to all Clubs and competitors by way of a Media Release and/or in Tek Torque. A stick-in advising this amendment will be provided in the front of all Manuals purchased after the amendment becomes law. Amendments circularized in such manner, shall be deemed to be as valid as the contents of this manual and must be adhered to by all Competitors and Scrutineers.

Specific decisions made by Federal/State/Zone Officers shall be subject to ratification by the Federal Technical Committee, after due notice of the decision and reasons have been given. All enquiries must be directed to your local Club Scrutineer.

SSA Inc. cars must only race with SSA Inc. Registered cars, with SSA/NASR Licenced drivers with SSA Inc. approved Insurance

2. AUTHORITY TO EXCLUDE:

If an SSA Inc Official determines prior to the race that the Race Car does not meet the applicable specifications, the car will not

be allowed to compete unless, in the discretion of the official, the deficiency:-

- A) Will not adversely affect the orderly conduct of the race.
- B) Will not provide the competitor with a significant competitive advantage over other competitors.
- C) Is so insubstantial as not to warrant a determination that the car is ineligible to race.

If the Official permits the car to compete under these circumstances, the Official will advise the competitor in writing of the deficiency, and if the deficiency has not been corrected within the allotted timeframe, the car will be prohibited from competing in any future event.

3. GENERAL:

Specifications listed in this book are a guide to building race cars unless otherwise stated. If "IT" is not in the book, then it cannot be used.

Before constructing cars of unusual or unconventional design, full details are to be submitted in writing to the SSA Inc Technical Committee via Club and State Secretary. If requested, this submission shall be handled "CONFIDENTIALLY", and approval or required modification before approval shall be given in writing to the applicant. A fee applies.

4. CONSTRUCTION:

Workmanship on race cars is to be of a professional standard.

All materials used must be of good quality.

Bolts are not to be used through structural tubing in the rollcage cabin area unless a welded sleeve is provided.

No tek screws or self tappers to be used.

No pop rivets in roll cage tubing.

All material sizes quoted are minimum unless a maximum is stated.

TRANSPONDERS are to be mounted no more than 450mm forward of the front axle centreline.

Reshelling of a currently registered race car is permitted if same make and model and no fee is payable.

One Way Communicators are mandatory for all race meetings.

5. DECLARATION OF COMPLIANCE:

The PERSON RESPONSIBLE for the LEGALITY of the car, will complete a SSA Inc DECLARATION OF COMPLIANCE ANNUALLY.

Declaration will cover ELIGIBILITY for class and ALL points of SAFETY including material specification and sizes. Details of the declaration are to be placed in the log book.

REGISTRATION IS NOT COMPLETE UNTIL Pages 3 to 6 of the LOG BOOK are completed and signed by both the Owner/Driver AND the Scrutineer/Machine Examiner or Registrar.

Structural or other specification changes made during the year MUST be notified to the respective Officials and adjustments will be made to the Log Book if required.

The Driver must have a SSA/NASR licence and a SSA Inc. Infringement Card.

6. REGISTRATION:

A SSA Inc new registration can only be issued for a race car provided that the car conforms to the SSA Inc. Specification Book for the Class in which the car is to be registered.

The car must pass an annual registration examination and a registration decal will be issued and must be attached to a prominent location on the car. A car being re-registered must

have the log book from the immediate previous season otherwise the chassis area and roll cage will be subject to new car specifications. A complete metal body shell including roll cage is the basis for the registration of a race car.

The **DRIVER** is responsible for having the log book further endorsed before participation in each official practice session or race meeting.

A log book without endorsement by the Machine Examiner is equivalent to a no-race ticket.

7. MEASURING OF CARS:

All cars are subject to engine and general measurement at any time by a Scrutineer, State or Federal Technical Committee OR at the direction of the Federal Technical Advisor, or the Federal Technical Committee, or the Steward or the Racing Disputes Committee.

The SSA Inc. reserves the right to impound and inspect any race car at any time.

Cars can be selected and ordered to the impounded area for dismantling. This may include removal of any seals for inspection and if found non compliant, registration may be revoked. The entrants of the cars must deliver them immediately upon request and supply the necessary manpower and hand tools to accomplish dismantling.

Only persons actually involved in dismantling the car will be allowed in the immediate area of a vehicle being checked. Persons associated with other cars being checked are to remain with their own car.

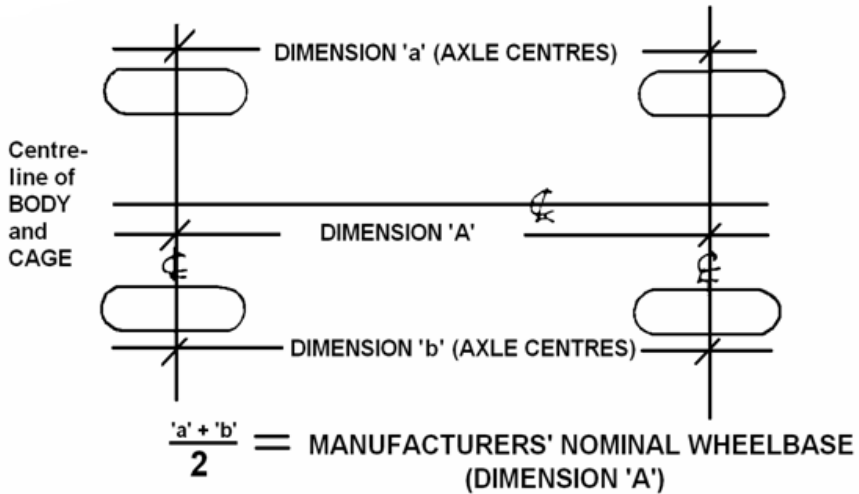
Any persons not having cars in the impound area and gaining entry without authorisation, will be ejected.

If there are no facilities for ready check of any parts of a vehicle, sealing of parts under question can be carried out and

vehicle taken to a mutually agreed venue for examination at another time, but within fourteen (14) days.

Impounded cars will be stored at the owner's risk. Although every reasonable precaution will be taken, no responsibility for fire, theft or damage will be assumed by the SSA Inc. and/or affiliated clubs or members.

Fig 1



Method of measuring wheelbase shall be:- With each front wheel pointing straight ahead, measure distance from front axle centre to rear axle centre on each side of vehicle. Add dimensions for left and right, divide by 2. Allowable tolerance +/- 1%. **Fig 1**

8. PENALTIES:

This Manual must be read in conjunction with the Australian Speedway Racing Rules and Regulations and/or notices issued by the SSA Inc. from time to time. Ignorance of these Regulations and Specifications and notices shall be deemed as no defence in regard to breaches and/or appeals of same.

9. GLOSSARY OF TERMS & DEFINITIONS:

Material:-

CHS—Circular Hollow Section.

RHS—Rectangular Hollow Section.

w.t.—Wall thickness.

AS1163 Gr300— Australian Standard 1163 for structural steel tubing Grade 300

FMS—Flat Mild Steel

O.D.—Outer Diameter

OEM—Original Equipment Manufacture; used to indicate parts used, or the complete vehicle as it left the production line from the original manufacturer and means for make and model unless otherwise stated.

SECTION 2 – Safety Equipment

All protective clothing and safety equipment must be used and/or worn in the approved and accepted manner whilst competing, or testing and/or practice.

All race wear/equipment to be inspected at each practice/race meeting.

1. SAFETY EQUIPMENT:

The following are minimum safety standards:-

RACE SUIT: Minimum standard of either SFI 3.2A/1 or the higher standard of apparel, a snug fit at ankles, collar and cuffs, and must be fully fastened at all times whilst in the car.

UNDERWEAR: Comply with SFI 3.3, FIA 8856-2000 and must be worn. Drivers must only wear cotton socks and undergarments e.g. No synthetic boxer shorts and no under wires on bras. No synthetic attire and no jewellery to be worn by a competitor whilst completing.

BALACLAVAS: Comply with SFI 3.3 or FIA 8856-2000 and must be worn

BOOTS: Comply with SFI 3.3 or FIA 8856-2000

GLOVES: Comply with SFI 3.3 or FIA 8856-2000 and must NOT be modified in any way.

HELMET: Full faced and complies with the AS1698 standard and must be no older than 5 years from the manufacturer date. The higher Snell standard helmet can be used and is recommended. However, if helmet is misused, neglected, or damaged, it may be rejected and impounded by Machine Examiner or Technical Committee at any time, and if considered to be unsafe, scrutineers log book entry to be completed along with drivers log book and helmet cannot be used again for any speedway event. Chin cup on helmet not permitted. Spectacles, visor or sunglasses, when worn, must have lenses of non-splinter able material.

HORSE COLLAR: Compulsory, if the driver is not using a Head and Neck Restraint.

HEAD AND NECK RESTRAINT: Recommended but not mandatory, If worn a Head and Neck Restraint must conform to SFI 38.1. An AS1698 helmet must not be modified in any way. Only a SNELL SA-2005 or Snell SA-2010 helmet can be modified to wear a head and neck restraint device.

SEAT BELTS: Five or six mounting point restraints are mandatory. Shoulder and Hip Belt width 50mm minimum. 75mm highly recommended.

SEAT BELT LIFE:- MAXIMUM OF FIVE YEARS FROM DATE OF MANUFACTURE

Only belts with over centre lever lock buckle to be used.

An approved type racing harness must be fitted, using a minimum of four major belts and four mounting points, plus one

or two anti-submarine/crotch straps. Anchor bolts to be 10mm steel minimum

Shoulder belts to have separate anchor points/adjusters. **Fig 2 (i)**

Shoulder belt mounting points shall be positioned to the rear and below the point at which the shoulder belts come through the seat and be not more than 300mm from that point, attached to 38mm x 3mm tube. **Fig 2 (ii)**

Lower seat belt mounting brackets (anchor points) must be on roll cage and chassis or substantial bar-work using a minimum construction of 25x25x3mm RHS or 25mm OD CHS. Seat belt attachment tag to be 3mm minimum mild steel.

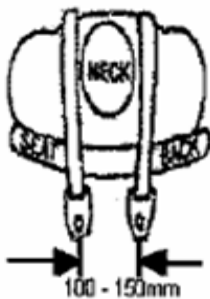


Fig 2 (i)

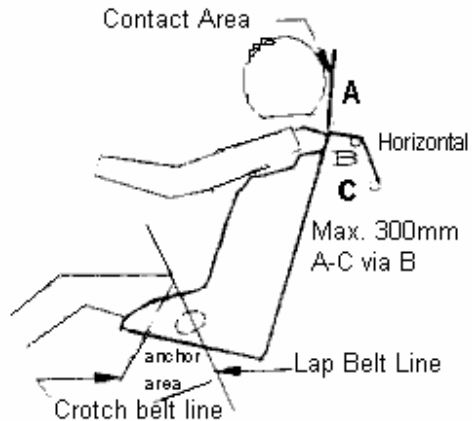


Fig 2 (ii)

Lower seat belt mounting brackets (anchor points) must be on roll cage and chassis or substantial bar work using a minimum construction of 25x25x3mm RHS or 25mm OD CHS. Seat belt attachment tag to be 3mm minimum mild steel.

2. INSTALLATION OF DRIVER RESTRAINT SYSTEMS: Fig 3

In order for the driver restraint system to be fully effective, considerable thought must be given to the location of mounting points, and to proper installation.

With the seat, roll cage and belt anchors all part of the same structure, deformation of the remainder of the car does not put driver at serious risk.

The mounting points must be solid and should remain so even if the vehicle is deformed due to an accident. The mounting points should also not put undue strain or twist on the belt system hardware.

The lap belt should be positioned so it rides across the solid pelvic area and not the soft stomach area or down on the thighs. The shock absorbing ability of the pelvic area and its ability to protect internal organs make it the preferred location for the lap belt. **See Fig 3 (i) & 3 (iii).**

The shoulder harness should be mounted to prevent driver's shoulders from moving forward (upward if semi-reclining), out of the seat, in the event of a rollover.

The required minimum 50mm from the top of the driver's helmet to the roll cage roof & head plate/hoop bar. Anti-submarine straps serve two purposes.

To secure the lap strap down across the driver's hips, so in the event of an accident, it is not pulled up across the stomach by the shoulder straps.

To prevent the driver from sliding forward and out of the harness, when the driver is seated in an upright position, as in most sedans, a five point system (a single anti-submarine or crotch strap) is considered adequate **Fig 3(ii)**. For extra assurance a double strap anti-submarine belt can be used **Fig 3 (iv)**.

When the driver is seated in a semi-reclining position a six point system (two anti-submarine or crotch straps) is preferable. Most drivers find the two anti-submarine strap system more comfortable.

In many instances, the anti-submarine straps are mounted much too far forward on the seat. This practice could cause unnecessary injury as the body can slide partially out of the seat before being restrained when the strap contacts the groin. It is much more practical to cut a slot in the seat bottom so the anti-submarine strap can be anchored in line with the chest.

Fig 3 (i).

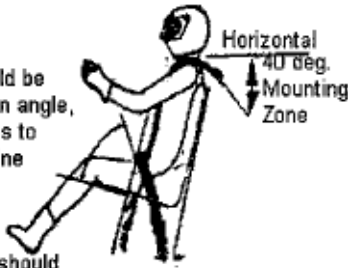
Because of the differences (often vast) in competition vehicles, a 'standard' method of mounting is impractical. Good judgement and common sense in inspecting restraint system mounts is needed.

Safety equipment is often neglected in favour of performance equipment, but its proper operation when the need arises is essential to survival.

Fig 3(i)

(ii)

Lapbelt should be installed at an angle, 45-55 degrees to the tangent line of the thigh.



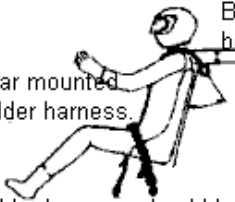
Crotch strap should be anchored in-line with the chest.



Seat belts should be anchored apart the same distance as the driver is wide. Mounting brackets should be angled the same direction as belts pull and not tilted in or out.

(iii)

Rollbar mounted shoulder harness.

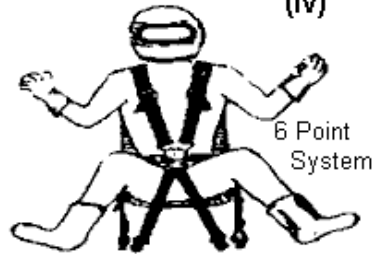


Belts anchored 100mm below shoulder line.

Fig. 3

Shoulder harness should be anchored at a 45 degree angle from the seat. If mounted to a roll bar cross brace, located 100mm below the shoulder line.

(iv)



Crotch strap mounts as far apart as comfortable.

ADJUSTMENT OF DRIVER RESTRAINTS:

With the driver fully kitted out in 'long johns and driving suit', check that, with the driver seated, belt slots in the seat line up with natural line of the belt from anchor to buckle when just the lap belt is tensioned. Ensure that the lap adjusters do not foul the seat and that they are readily accessible. Some belts adjust by pressure downward others by pull up.

Check that the driver can manipulate belt adjusters with gloves ON. Check also that anchor hardware is aligned and that it is not possible to have a hitch in the anchor area without detection (sudden release of the belts to 50mm slack can put the driver off-line). Now check if the belt is holding the seat or the driver, it should be the latter.

Adjust the anti-submarine strap/s to ensure that the buckle is held flat and close to the body over the pelvis. When satisfied that the lap belt is OK, put on the helmet and check just how far the helmet (with visor) can reach, head plate clearance, helmet net etc.

Slacken the seat belt, engage the shoulder belts into the buckle and tension the seat belts again, checking position of the buckle and adjusters. Tension each shoulder belt, checking that the adjustment range is suitable to the driver, that the belts and hardware don't foul the seat and that the natural line of the belts hold the driver as with the lap belts.

Note also any change in the buckle location and lay. If there is too much variation with the buckle it would appear that lap anchors are not in optimum position.

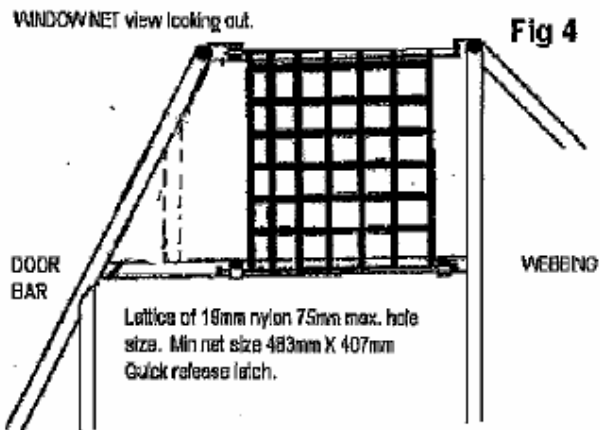
Before drivers releases the buckle he should slacken shoulder belts with the adjusters, keeping the area of the adjuster supple, accessible for cleaning and making entry to the car a simple routine.

While lining up for restarts, it becomes a simple exercise to tug the adjusters to snug up the belts and stay in control of the car.

3. WINDOW NET:

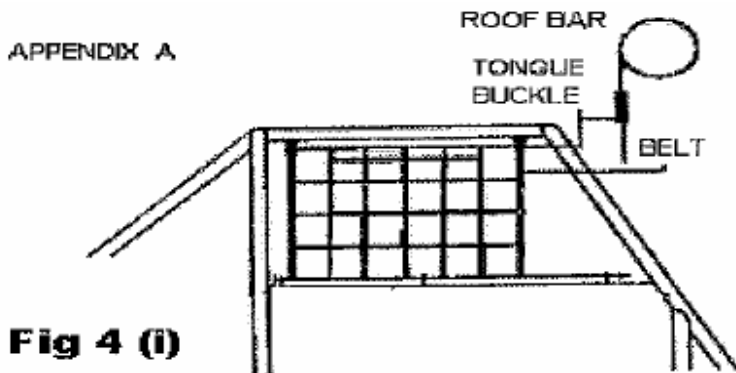
Window net is mandatory.

Net to be a minimum 19mm woven webbing with 75mm maximum hole size. **(Fig 4)** Window net minimum rod thickness ¼" (6mm)



It is recommended that the window net be hinged from the bottom.

Window net must be mounted directly to the roll cage bar (top) and NASCAR bar (bottom). Window net – lattice of 19mm woven webbing. **Fig 4(i)**



This design uses two push button seat belt buckles and belts. Tongues are welded to side of roof bar. 25x3mm FMS welded to rear of buckles. Tubing at base of net fixed with bonnet lock pins.

4. PADDING:

The driver must be protected in the race car, from all sharp edges and projections or bar work which could cause injury in an accident.

5. FIRE EXTINGUISHER:

On board fire extinguisher permitted. It must be securely mounted and be of the correct type for the fuel being used.

6. SEAT:

Minimum 50mm clearance helmet to the roll cage roof & head plate/hoop bar.

Seat to be mounted totally on the right hand side of the vehicle centreline measured at waist line of body.

Seat base to be mounted to roll cage chassis at a minimum of two points using 8mm bolts and minimum of 40mm diameter body washers. Four points recommended.

Seat back to be braced to, and attached to, the roll cage approx 75mm below shoulder height using a minimum of two 8mm bolts and 40mm body washers.

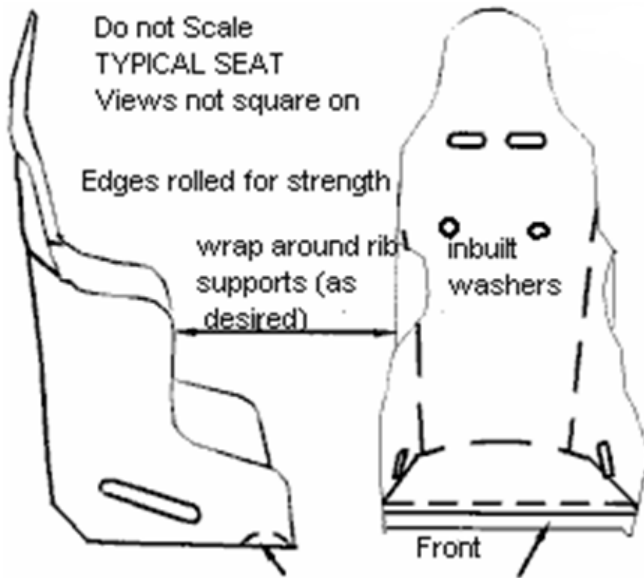
A "Purpose Built" one piece, solid (i.e. no lightening holes), steel, aluminium, or fibreglass bucket type seat incorporating a substantial head rest must be used. Plastic seats are not permitted. Minimum thickness of aluminium and steel seats is 3mm. The minimum thickness of a fibreglass seat is 5mm.

Approved proprietary line competition seats and mounts permitted, e.g. Kirkey/Butler/Genesis/United Speedway Accessories/Bratpack

Spring upholstered or magnesium alloy seats not permitted.

Recommend full containment seat or at least head and shoulder support.

Fig 5



Lateral (sideways) support must be given to hips and above waist.

Concave seat to support back to minimum of TOP of shoulder height and width.

Top of head rest to be at least 50mm above helmet contact point. Head rest must be padded. At the discretion of the Scrutineers the head rest will need a form of support, if it is deemed too flexible and/or the area between seat and roll cage is too great. Upper support (mounting bolts) should not exceed 75mm below shoulder height.

Cut-outs for belts to be suitably grommeted and have adequate clearance.

All seats may be padded and covered, the covering being securely attached. Maximum padding thickness 50mm.

SECTION 3. – Class Specifications – National 4 Cylinder Sedan

The specifications contained in this document have been selected to encourage and foster the racing of 4 cylinder mono passenger cars, both standard and modified. All cars are to be based on a passenger car and the silhouette of that model must be maintained and although the modification permitted are variable and could be used to take the construction away from being based on a mono sedan. This is not the intention of these specifications.

A National Four Cylinder Sedan is built from a hard-top 4 cylinder mono passenger road car. If unsure of model options refer to Glasses Dealers Guide or a car park check if required. Utilities, panel vans, station wagons and four wheel/all wheel drive not permitted. All controls for the vehicles operation must remain on the right hand side.

Silhouette of the model must be retained.

Passengers:Optional as per state ruling.

1. BODY/ROLLING SHELL:

- a) All vehicles must be post 1963 and have been available with a four cylinder engine.
- b) Cars manufactured with three cylinder engines allowed.
- c) Race car is to use an original turret, front firewall and front floor pan must be retained. No modifications to engine firewall to allow engine block positioning. Floor pan behind the rear main hoop may be modified or replaced. Rear firewall may be removed and a fabricated one fitted. Maximum thickness of material 2mm, minimum thickness 1mm. All holes in the firewall for fuel line must be fitted with grommets. All holes in the firewall for power cables must be grommetted. Holes in front floor must be covered.

- d) All fittings such as door handles, visors, ornamental mouldings, body trim strips; wheel trims etc. must be removed.
- e) All unnecessary flammable material must be removed, e.g. door trims, floor coverings; attached sound deadening material permitted except near exhaust system.
- f) All window glass and lights must be removed. (Window Glass apertures must not be covered with fibreglass or other material)
- g) Instrument glass permitted.
- h) Replacement panels must be securely fastened; self drilling (TEK) screws are not to be used. All headlight and grill opening must be filled in with a suitable body material
- i) Front wheel drive cars with transverse engine may modify the engine cradle assembly to strengthen the engine mount (Maximum allowable material 38 x 3 mm CHS)
- j) Front and rear under bumper stone trays to be in place;
- k) Spoiler or Aerofoil fitments not permitted to be above half rear window height, not wider than waistline of the car at that point nor further to the rear than the back of an original rear bumper.
- l) Other aerodynamic aids will be considered by submission only.
- m) All Bodywork, including any subsequent repair of race day damage, shall be to a Tradesman-like standard and must permit the vehicle to be presented in as near to original condition as possible.
- n) Paintwork and Sign Writing: All paintwork, sign writing and numbers to be neat, attractive and of a professional standard. All vehicles must carry the identification number, as issued by their club. This number may be displayed on each side of car and on the roof.
- o) Club prefix, if required, to precede number. The name of the driver will appear on the roof over RH door or on visor strip, in letters of a minimum of 75mm high.

2. ROOF NUMBER:

The use of a roof number is mandatory for all race meetings. It shall be a metal plate, 30cm square with a 5 cm right angle fold at the bottom, where 2 holes, at 20cm centres shall be drilled to take 6mm bolts. The number on the plate shall be painted using a black background & white number/s. The Number to be minimum 250mm high in block font.

Standard grade cars to have a yellow triangle (75mm x 75mm x75mm) attached to the roof number for Identification.

3. GENERAL CONSTRUCTION:

- a) Fuel Tap lever or switch to be marked, indicating FUEL and the positions ON/OFF.
- b) Kill Switch to be clearly marked, in contrast colour, for method of operation e.g. DOWN/OFF.
- c) Bonnet to be securely fastened. Four bonnet pins (5 for fibreglass) to be 12mm minimum to 15 mm maximum mild steel, or approved equivalent.
- d) Bonnet pins are to be in the bonnet, not sides of mudguards. No mounting pins in side of panels, i.e. mud guards.
- e) Bonnet lock pins 3mm minimum to 6mm maximum Heavy duty large reinforcing washers (min 30mm O.D.) to be fitted to all bonnets pin holes.
- f) Similarly, boot lid to be securely fitted, using pins and large washers as for bonnet. A removable boot lid to be securely mounted at four points.
- g) Hinged bonnet and boot lid permitted, using minimum of two pins. Skeletonising not permitted on hinged panels within 50mm of hinges.
- h) The hinged panel to be welded to the bonnet or boot skin.

- i) Fuel tank area must be accessible for scrutineering, 300mm x 300mm (access panel may be in rear parcel shelf, deck panel or be the boot lid).
- j) Grille may be fabricated, 3mm maximum FMS, but is to resemble the original. Multi-piece sheet metal, brittle plastic, or die cast grille and/or fittings not permitted.
- k) Flares to be of body material only.
- l) Flare edges and/or guard edges are not to be reinforced.
- m) Light apertures may be filled using maximum 1.6mm metal sheet, fibreglass or plastic.
- n) Rear vision mirror not permitted.
- o) Data logging dashes are not permitted.(no “car to pit “electronic transmission)
- p) Dash panel is not to continue past the forward most point of the steering wheel across the width of the car.

NON ORIGINAL BODY FIREWALL:

Driver must be protected and isolated from mechanical, fuel, electrical including battery, (marine type plastic or similar box accepted) and exhaust components, by metal firewalls, minimum 1mm thick.

4. ROLL CAGE:

The roll cage is to prevent the collapse of cabin area under impact.

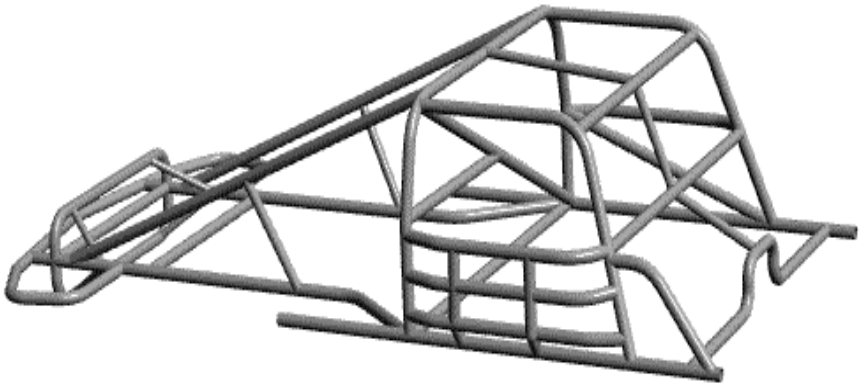


Fig 6

- a) Roll cage to enclose the driver, to be full width and full height of the cabin area.
- b) The roll bars are to constitute a cage type framework, braced fore and aft. The cage must extend from behind driver's seat forward to the windscreen area and incorporate protection for the driver's feet.
- c) All roll bar material must be of good quality mild steel, AS 1163, minimum Gr300. MINIMUM 38mm O.D. x 3.0mm w.t. CHS. (Sonic test at not less than 2.70mm ABSOLUTE).
- d) Aluminium based materials not permitted.
- e) All bends to be made using a pipe bender with the correct size former. Galvanised tubing or welding over threaded tubing is not permitted in any structural bar work.
- f) Water pipe fittings or malleable fittings are not permitted.
- g) Roll cages built using other than fusion welding techniques will not be accepted.
- h) Gussets on welded joints may be required at daylight inspection of weld quality.
- i) The rear main hoop will be made of one continuous length of tubing with smooth continuous bends and no evidence of crimping, wall failure or significant weakening. **(Fig 6).**

Fig 7(i) Cage Details

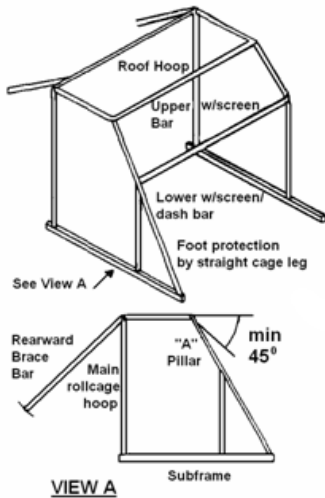
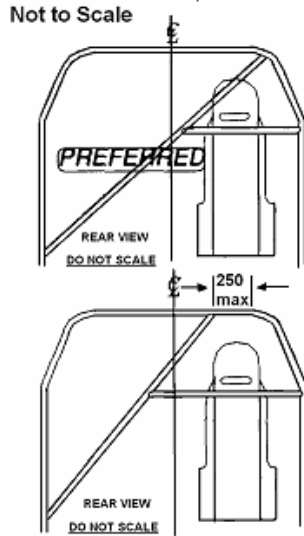


Fig 7(ii) Cage Details



Main roll cage hoop to be full width of the cabin area within 50mm of sides of roof at narrowest point. Bars are to be inside body.

Top windscreen bar to be as near as practical to windscreen at front roll cage leg on side elevation.

Front roll cage leg is to follow the "A" pillar line; exception being cars with severe rake of the windscreen.

Angle of roll cage "A" pillar bar is to be of not less than 45 degrees down from roof bar. **Fig 7(i).**

If a pillar bar does not follow "A" Pillar line and is 45 degrees, additional sub-frame cross brace from front of foot protection to LHS may be required.

Roll cage legs shall be welded to the top of a sub-frame of tubular or angle section running fore and aft.

Sub-frame to be securely welded or bolted to the floor pan/sills using at least four 12mm steel bolts through the sub-frame and using 100mm x 100mm plates under the floor.

Sub-frame Material Size:

Tubular minimum 38mm x 3.0mm w.t. CHS or 50mm x 50mm x 3mm w.t. RHS.

Angle minimum 50mm x 50mm x 5mm.

NASCAR BARS On driver's (Right) side: three horizontal side bars, curved out to the door skin, are to be placed between front and rear cage legs, evenly spaced between window sill and cage sub-frame.

A minimum of two spacer bars, spaced evenly between front and rear roll cage legs are to be fitted within each opening from the cage sub-frame and top NASCAR bar with a minimum of 6 bars fitted between the cage sub frame and top horizontal bar .

Fig 6.

On the drivers side one of the 3 horizontal door bars may run straight through e.g. From front wheel arch to rear wheel arch and have two pieces of 38mmx3mm turning at 90 degrees to the NASCAR bar connecting onto the rollcage A and B pillar bars.

The top NASCAR bar, lower windscreen bar and the passenger top bar maybe formed in one continuous bar. This entails the A pillar to be formed in 2 pieces.

A one piece diagonal brace - 38mm O.D. x 3.0mm w.t. CHS will be fitted in the main roll cage hoop behind the driver's head, (within 250mm. of the bend), top right to bottom left. **Fig 7 (ii).**

A second brace may be fitted in cruciform.

The diagonal brace, top right to bottom left, must be one piece. If a cruciform type bracing is used a minimum of 32mm O.D. x 3.0mm w.t. CHS may be used.

5. ADDITIONAL MINIMUM BARWORK:

- a) 38mm O.D. x 3.0mm w.t. CHS (.unless otherwise specified)
- b) Top windscreen bar. Lower windscreen/dash bar.
- c) Passenger's (Left) side: Two bars between front and rear roll cage legs. One must be horizontal at window sill

height. Other may be diagonal. Both bars must attach to front and rear roll cage legs.

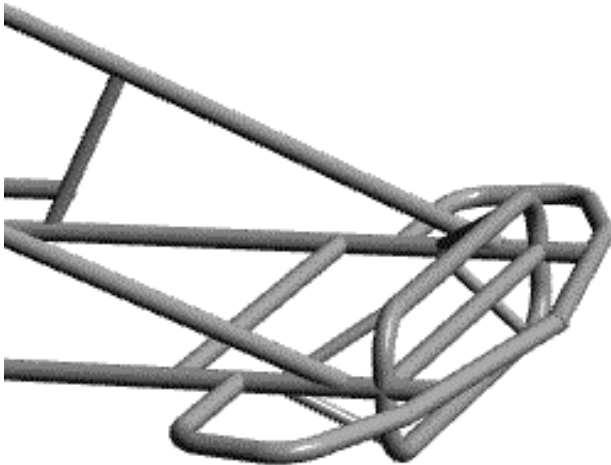
- d) Minimum of two sub-frame cross braces at roll cage legs, either 38mm O.D. x 3.0mm w.t. CHS or 40mmx40mm x 3mm w.t. RHS. Maximum 200mm from roll cage legs. Centre roof bar 32mm O.D. x 3.0mm w.t. CHS.
- e) Centre windscreen bar, 25mm O.D. X 3.0mm w.t. CHS.
- f) Passengers must face forward

Chassis bar Material Size:

- A) 38mm by 3mm
 - B) B.40mm by 40mm x 3mm RHS
 - C) C 50mm by 50mm x 3mm RHS
-
- h) Rear chassis bars to follow contour of the floor to rear of boot area, from foot of main roll cage hoop or to be a maximum of 300mm from foot of main hoop (may require gusset) these must attach to rear bumper. A rear radiator may be mounted to these chassis bars.
 - i) Rearward brace bars min 34mm CHS from the top rear of main hoop within 100mm of centre radius down onto rear chassis bars. (Approx 45 degrees). May be crucifix.
 - j) A quarter window bar, if required because of excessive rake or a long roll cage, be fitted to both sides and installed from the top NASCAR bar to top half of A pillar bar using minimum 25x3mm CHS
 - k) Seat back support/shoulder belt mounting bar.) On driver's (Right) side: 38mmx3mm CHS
 - l) Passengers optional, but all bar work, NASCAR, roof plate etc. to be mirrored from right hand side. Passenger option only if state legislation allows.
 - m) Ballast may be carried. MAXIMUM 20kgs. This must be identified with the car race no and be secured to the 38.00mm bar work by bolts passing through the weight and attaching to the bar.

6. FUEL TANK PROTECTION:

Fuel tank protector bar must attach to the rear chassis bars and be constructed of 38mm x 3 mm CHS to be braced forward with 25mm x 25mm RHS or 20mm NB> with 25mm clearance all around the tank and filter. Bar is to prevent side entry to tank. This bar must be 50mm wider than both sides of the tank and min. height of 150mm or 75% of the height of the tank, which ever is greatest. (See diagram)



- a) Under slung fuel tank is a fuel tank that has some portion below the bumper tube or chassis rails and therefore is to have a fuel tank protector bar fitted.
- b) Protector bar must be 25mm lower than an under slung tank. **Fig 8**
- c) Fuel tank protector bar must have radius formed corners.

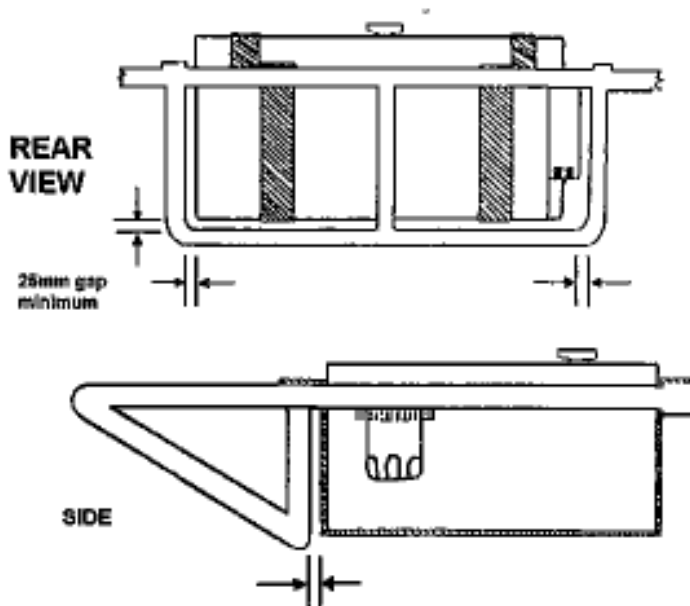


Fig 8

7. BUMPER BARS & OPTIONAL EXTERNAL BARWORK:

OEM type Steel bumper bars **NOT** permitted but may be replaced with maximum 42mm x 3mm CHS Front chassis bars may mount to sub frame rail or may be mounted through the centre of the sub frame rail and extend to either roll cage leg or sub frame cross brace at floor level and mounted back to the sub frame.

Front bumper may be mounted to 2 front chassis bars.

Strut support bars may attach to chassis bars.

Rear bumper must be mounted to rear chassis bars. Returns of rear bumper bar may be extended as a skid rail within 50mm of the outside of body between bumper and wheel arch, and then extend inward to the chassis bar.

Bumper bars may extend maximum 50mm from inside edge to existing body line. Bumpers may be maximum 42mm CHS bumper corners minimum 100mm radius and have a maximum of 4 mounting points.

A crumple zone (light tube) may be used beyond the intersection of the rear brace bars and fuel tank protection bar, to attach the bumper bars to the chassis bars.

Anti-hook-up bars from returns of Front and Rear bumpers to be extended onto the chassis bars.

Corner plates on top edges of either bumper not permitted.

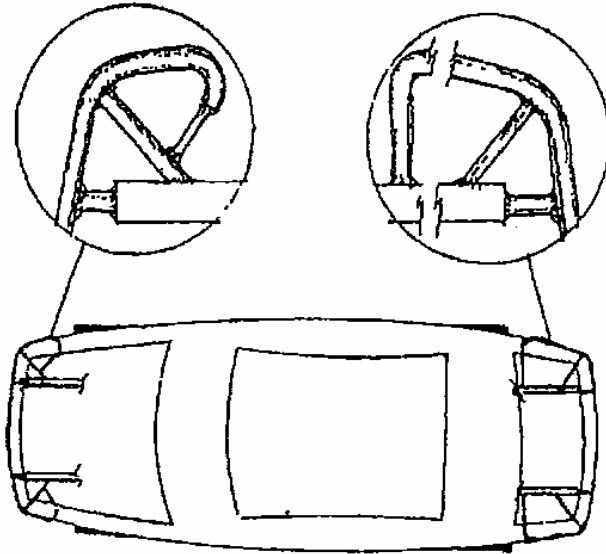


Fig 9

FRONT & REAR BUMPER BAR:

May be covered with a plastic road car bumper. Optional copy of fibre glass bumpers front & rear be allowed. To be exact copy of O.E.M Bumper for model. Plastic bumper cover must be fitted with round head bolts. Aluminium rubbing strips optional. 40mm x 3mm maximum aluminium strip may be fitted between bolts to support bumper cover.

8. TOWING ATTACHMENTS:

Will be via the override bar or a hole cut through the bumper panel to which a suitable strap, cable or chain is recommended to be attached to the bumper bar, suitable for lifting and towing purposes. This prevents the bonnet, boot removal before recovery from the track and the subsequent damage to the inner (boot bonnet) area when chains are attached to internal bars.

9. WINDSCREEN MESH:

Mesh screen to cover entire area from “A” pillar to centre bar and from dash to roof bar. Maximum effective mesh size 50mm x 50mm. Mesh gauge 3mm. Windscreen mesh to be attached to the roll cage. Recommended that the mesh be attached in such a manner as to enable quick removal i.e. (r-clipped, pinned or clamped). Minimum of five attachments points.

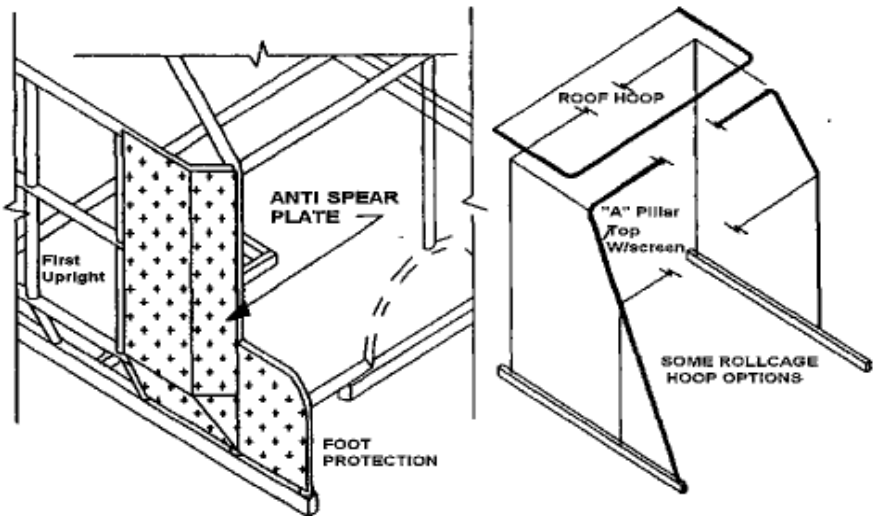


Fig 10

10. DOOR PLATES:

One piece anti spear external door plate 3mm steel or 5mm alloy, (NOT to be lightened by drilling). Recommended 1/3 length between roll cage legs, to be fitted on drivers side, from floor line to window sill bar, forward of the first vertical door bar, to the front leg of the roll cage: **Fig10**. If not welded, one piece external door plate to be bolted on, using a minimum of 6–50mm x 50mm x 3mm MS tags and bolted to either 8mm or 5/16th high tensile bolts with no protrusions. If individual pieces are used then a minimum of 4–50mm x 50mm x 3mm MS tags and bolted to either 8mm or 5/16th high tensile bolts to each piece with no protrusions.

Minimum requirement for foot protection be a minimum of roll cage material. A plate may also be required. **Fig 10**

Foot protection bar support 25mm x 3mm support from foot protection bar must attach to protector bar at one end and the other attached to bar work to the left.

Foot protection bar and brace bar is mandatory if drivers feet are past the “A” pillar bar whilst the driver is seated in the car in race position.

The bar providing the anchor points for the shoulder belts is to be positioned so that the belts are anchored a maximum of 300mm from the point at which the shoulder belt comes through the back of seat.

11. HEAD PLATE:

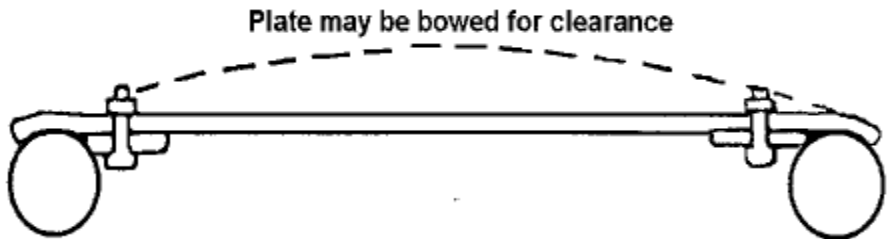
To simplify the removal of an injured driver it is highly recommended that a removable full size head plate be used: **Fig 11**.

- a) Head plate to be of 5mm ALUMINIUM ALLOY or 3mm STEEL. 25mm x 3mm FMS strip to be welded to main hoop, top windscreen bar, centre roof bar and side roof bar. 10 of 50mm x 50mm x 3mm MS tags acceptable.

Plate to be mounted, from above, with 10 x 8mm diameter. High Tensile bolts, 3 each side, 2 front, 2 rear. Heads of bolts to be downwards, i.e. no projections.

- b) ALTERNATIVE head plate minimum 3mm steel must extend from rear roll bar to top windscreen bar and from driver's side outer roof bar to centre roof bar. This plate must be securely welded to these bars with intermittent welding procedure.

Fig 11 Head Plate



12. TRACK:

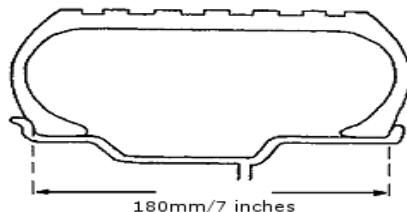
Original plus 75 mm maximum. Centre-line, refer **Fig 12**. (Wheel/tyre measured at stub axle height and averaged front and back)

13. WHEELBASE:

Original, within 1% ABSOLUTE.

Fig 12 Track and Rim Measurement

Manufacturers track + 75mm

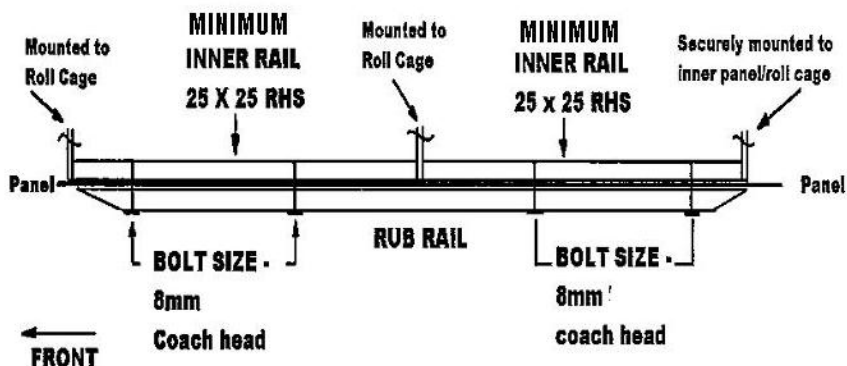


14. RUB STRIP (optional):

Mild steel rubbing strip between wheel arches to be 25x25x3mm MS RHS or alternately, nylon (urethane, nolathane) 50mm x 12mm thick. Be securely mounted against body at a minimum of four points. Bolts to be evenly spaced.

Bolts must be minimum of 8mm coach-head (cup head) bolts and be bolted horizontally to bar work.

Fig 13 Rub Strip Mounting



Bolts at each end must be no more than 50mm from the end of rub rail.

Inner mounting bar, **minimum** 25 x 25 x 3mm, is to be returned to the chassis or roll cage at each end.

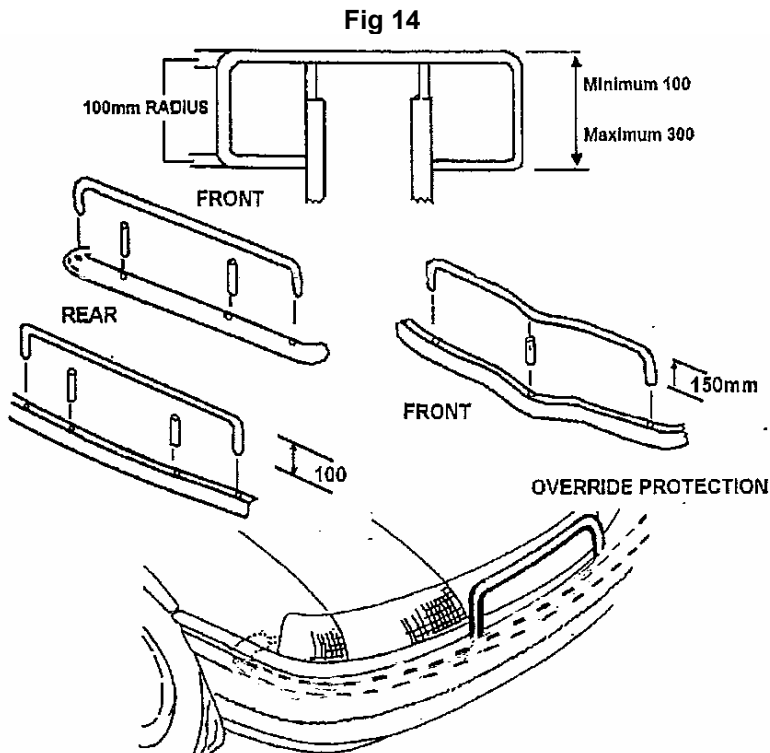
Rubbing rail ends to be closed and taper to 45 degrees as not to become a “spear”. **Fig 13.** Rub strips not to be used on quarter panel behind rear wheel.

Technical Committee will continue to monitor rub rails and if competitors are not adhering to the correct mounting procedure, rub rails will be removed from all Sections.

FRONT & REAR OVER-RIDER BARS

Rear override bar: An override bar may be used. Constructed of maximum 25mm OD x 3mm CHS. It shall be no wider than the boot panel and shall be mounted centrally on the bumper bar at no more than four points, be vertical and be maximum 100mm high. Brace bars are not to be used.

Front override bar: An override bar may be used. Constructed of CHS maximum 25mm x 3mm CHS, maximum 600 mm long, 150mm high and mounted centrally on top of the bumper at three points only, i.e. it may have a centre support.



Pipe may be behind plastic bumper cover

15. ENGINE:

- a) No forced induction
- b) No rotary engine
- c) Four cylinders maximum

STANDARD OEM Engine

- a) Engine capacity to be capped at 2 litre maximum.
- b) Cars must use standard carburettor or maximum 2/36 Webber (e.g. Escort or Cortina (downdraft only))
- c) Extractor may be used
- d) Injected cars to use standard single throttle body only.
- e) No after market computers.

MODIFIED

- a) Engine capacity open four cylinder. Engines may be changed to any parent manufacturer's model (eg Nissan to Nissan, Ford to Ford, Honda to Honda etc).
- b) Multiple carburetors allowed.
- c) Rotary, turbo or supercharged engines not permitted.
- d) FUEL INJECTION.
 - I. After market computers allowed.
 - II. Engine capacity open four cylinder.
 - III. Multiple throttle bodies allowed.
 - IV. Inlet manifold open.
 - V. One injector per cylinder only.
 - VI. Radio telemetry TO or FROM a car or cars will not be permitted.
 - VII. Ignition open
- e) Engine changes permitted if parent manufacture.
- f) Race engine to be based on car engine only. Verification will be required.
- g) Manufactures markings to remain on engine block castings.
- h) Engine to be mounted in original position, .Mid and rear engine cars by submission only
- i) If resilient engine mountings are used, a wire cable or chain restraint must be fitted

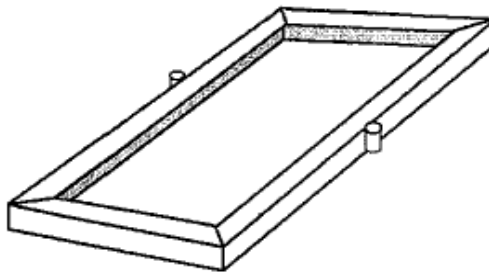
- j) Remote filters coolers, etc. to be isolated from driver by a 1mm firewall, mounted securely below door height, as to not impair vision through cabin.
- k) All connecting hoses, couplings etc to be correct class of fittings for that purpose.
- l) Remote oil pump permitted. External oil feeds to bearings permitted.
- m) Return springs must be fitted to each butterfly shaft (in-built springs accepted), and one spring to accelerator pedal linkage. Protective wire gauge or air cleaner to be fitted over air intake to prevent entry of foreign objects to the throttle body and also to act as a flame trap.

16. BATTERY AND ELECTRICAL SYSTEM:

- a) Battery to be securely mounted in a box or metal frame secured to roll cage or bar work. **Fig 15.** A non-conductive covering be placed over the battery and the exposed metal of the cable terminals to reduce acid spillage and to reduce chance of arcing if metal contacts battery in any incident if in cabin area. The maximum size battery that can be used is N70ZZ. Cabin mounted battery, must be secured by an angle iron frame(25mm x 25mm) both top and bottom with 8mm bolts or rods.

Fig 15

BATTERY CLAMP/HOLD DOWN FRAME



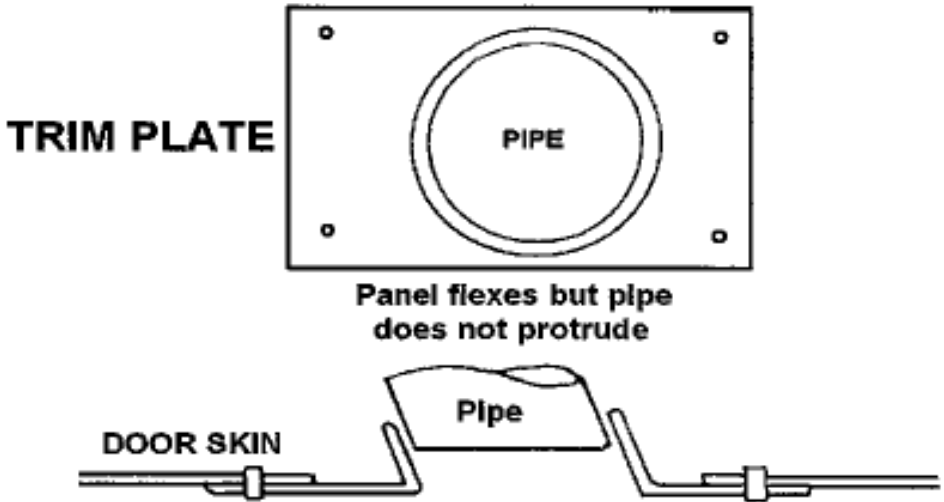
FRAME: 25 X 25 X 3mm ANGLE IRON

- b) Suitable grommets must be fitted where battery cable passes through metal firewalls.
- c) At the commencement of a meeting, car must be capable of starting with starter motor
- d) Switches: Ignition switch and electric fuel pump switch, if fitted, must be grouped together and be clearly marked.
- e) An engine "KILL" switch, suitably marked with a contrasting colour, must be fitted in the centre of "cowl panel".
- f) Electrical switches NOT to be mounted through the floor.

17. EXHAUST SYSTEM:

- a) Exhausts must be within local noise level requirements. Recommend 95dB.A.
- b) All exhaust gases are to be directed away from all drivers, fuel tanks and tyres.
- c) Internally ducted exhaust system shall vent through the body not higher than 100mm above the door sill panel, using a slip joint as in **Fig 16**. Driver to be suitably insulated from exhaust system. Insulation and firewall sheeting not to exceed 150mm above drive shaft tunnel.
- d) Exhaust systems to have not more than two outlet pipes, and not protrude beyond body line.
- e) If exhaust system is under floor, safety chains will be fitted to front and rear of pipes and secured to floor pan or sub-frame.
- f) Pipes and mufflers must be securely attached to the vehicle.
- g) Sheeting to cover exhaust to be within 50mm of exhaust.

Fig 16



Any car exhausting excessive unburned fumes while on dummy grid, or being formed up on the track, may be excluded as this constitutes a health hazard.

18. COOLING SYSTEM:

- a) Cooling system may be modified.
- b) All radiator hoses to be of fabric reinforced material, no plain rubber hoses permitted.
- c) Radiators may be mounted inside cabin provided that they are mounted as low as possible in the rear of the vehicle rearward of the roll cage main hoop. The upper half of rear window opening **MUST NOT** be obscured by the rear radiator. Radiator ducting shroud must not be more than half the rear window height.
- d) Cabin mounted radiators must have **BOTH** tanks and cap covered to protect the driver (and passenger if applicable) in the event of the rad cap blowing off or tank splitting.
- e) All internal pipes to be ducted or lagged with suitable material.

- f) Hoses to be as short as possible and fitted to radiator from rear side.
- g) Exposed hoses or joints not permitted in cabin area.
- h) Cabin mounted fans to have shroud or suitable guard.
- i) Cabin mounted water pumps must be lagged or covered by suitable guard.
- j) Electric water pumps allowed.
- k) Radiator water spray systems are not allowed.
- l) Cooling system to have a manual pressure relief tap/cap fitted. Lever vent type may be used.
- m) Tap to be fitted with a hose to direct steam to the ground.
- n) The use of radiator expansion tanks is limited.
MAXIMUM 2ltrs.

19. TRANSMISSION:

ELECTRONIC TRACTION CONTROL NOT PERMITTED.

Every race car must be able to be started and then the vehicle can be put into gear and moved off in a forward or reverse direction as required.

STANDARD

OEM for model being used

MODIFIED

- a) Gearbox must have a minimum of two forward gears and a reverse gear.
- b) All drive-line components must be derived from mass produced passenger vehicles and remain visibly standard.
- c) Aluminium banjo centre allowed.
- d) Ratios are free.
- e) USE of A 9' DIFF permitted.
- f) All drive line components must be derived from mass produced vehicles.
- g) Tail shaft may be of one piece or two piece types, conversion is optional.
- h) No carbon fibre tail shafts allowed.

- i) Tail shaft/s must be fitted with 360 degree hoops at front and rear.
- j) Tail Shaft Loops - Steel strap minimum. 40mm x 5mm or 6mm chain or 6mm wire rope to be SECURELY fitted around the front and the rear of the tail-shaft within 150mm of universal joints to prevent the tail-shaft and/or shafts from dropping in an event of breakage.
- k) Tailshaft/s must have fully operational constant velocity/universal joints, be suitable for the application and be correctly phased.

REAR AXLE BEARING RETAINING RINGS

If using assembly not fitted with floating axles, a new retaining ring must be fitted at replacement of bearing or axle. Ring must be an interference fit with the axle, when in place the retaining ring is to be tack welded using MIG or a small diameter low hydrogen rod on low amperage.

**FAILURE TO OBSERVE THIS PROCEDURE WILL INCUR A PENALTY ESPECIALLY IF AN AXLE IS DISLODGED.
(SAFETY DECLARATION)**

20. STEERING:

Must be in sound condition. Steering joints to be split pinned as required.

Wire spoke or wood rim steering wheels not permitted. Steering column to be securely mounted to the roll cage dash bar.

Hub of steering wheel to be padded with dense resilient foam and covered.

To reduce thumb and wrist injuries, the use of "PAW SAVER" type disc steering Wheel is permitted.

STANDARD

- a) OEM only.
- b) Quick release wheels allowed.
- c) Wheel centre pad must be fitted.

MODIFIED

- a) Modifications are permitted.
- b) Quick release wheels allowed.
- c) Wheel centre pad must be fitted.
- d) Steering quickener permitted.

21. SUSPENSION:

STANDARD:

- a) Springs and shocks may be replaced.
- b) No adjustable suspension. No coil overs.
- c) Mounting points must be retained and used as manufactured.

MODIFIED:

Open: Hubs and/or axles to be derived from mono constructed passenger vehicle.

22. WHEELS:

- a) Wheel rims free to be up to a maximum of 7 inches. **Fig 12**
- b) Wheels must be in good condition and free from cracks.
- c) Bead locks allowed.
- d) Wire wheels and/or dual wheels not permitted.
- e) Balance weights to be securely fastened or taped.
- f) Rim edges to be rolled or rounded off if rim protrudes past the tyre side wall.
- g) Covering not to be welded to outer section of rim.
- h) Wheels may be reinforced provided they meet with the approval of the State Technical Committee or the Chief Scrutineer.

"Mag" Wheels:-

Correct matching nuts and washers must be used. Wheel studs not to protrude further than ½ inch (12mm) past the outer face of the wheel nut.

Composite type wheels NOT acceptable.

Composite wheel means wheels made of different materials e.g. 3 piece alloy wheels are not classed as composite wheels.

23. TYRES:

- a) Tyre dimensions maximum of 235.wall marking. Tyres to be Australian road legal radial rated tyre, recaps permitted.
- b) Tyre casings to have speed, size and load ratings indicated.
- c) Each tyre to have a maximum retail value of \$180.00 (GST inclusive).
- d) The retail price is determined by State tech reps for the State concerned. A list of three major tyre retailers is compiled in the State in which the car is registered. From these outlets a retail price including GST .is obtained for the tyre brand and size in question. These prices are added together and divided by three. If this amount is less than \$180 then the tyre is compliant.
- e) No performance tyres permitted – e.g. Hoosier, American Racer, McCreary etc.
- f) Road legal re-tread tyres permitted.
- g) Safety inner air tube is allowed.
- h) Tyres will be reviewed annually.
- i) Retread tyres must have the correct re moulders speed rating etc. and be legible as per AS 1973– 1985

24. BRAKES:

Any car model produced where ABS brake system is available then that option may be used.

STANDARD

OEM for model being used

MODIFIED

- a) Foot operated hydraulic brakes to be fitted and be effective at race speeds.
- b) Brakes to be fitted to a minimum of three (3) wheels
- c) Only right front brake may be removed
- d) Adjustable braking allowed.

- e) Disc rotors may not be altered by drilling of rotor surface (**Note:** some discs are supplied from the factory as drilled disc(i.e. DBA,Willwood)

25. FUEL:

NITRO; The introduction into the combustion chamber/s of nitro fuels and/or additives, either in solid, liquid or gaseous form (e.g., nitrous oxide) by any means is expressly forbidden.

STANDARD

- a) ULP ONLY
- b) GAS: e.g. LPG or CNG is NOT PERMITTED PETROLEUM; No additives, maximum specific gravity 0.780, maximum 98 octane. Must be supplied by a commercial outlet through a multi-volume network via bowser pump Fuel may be tested by any means brand names deleted
- c) Use of cooling systems for fuel is not allowed

MODIFIED

- a) Unleaded, E85, avgas, or methanol only permitted.
- b) Use of cooling system for fuel is not permitted.
- c) Multi fuel pumps allowed.

26. FUEL TANK AND FUEL SYSTEM:

- a) Original fuel tank must be removed and replaced by a tank/s of up to 50 litres for fuel. Fuel tank not to be mounted using brackets welded to tank or cell.
- b) Area beneath tank to be cut out, giving adequate ventilation and ensuring that spillage cannot remain in vehicle.
- c) Pressurised fuel tank/s NOT permitted.
- d) Filler cap to be a positive seal, behind a firewall and inside body. Levers on cam locked caps to be clipped.
- e) Metal fuel tanks over 25 litres must be baffled. All joints to be welded to a professional standard

- f) Fuel tanks to be constructed of minimum 1.0mm steel or 3.0mm aluminium alloy.
- g) Competition type "plastic" tank and receptacle highly recommended.
- h) If pump is placed in an existing tank, then low outlets are to be blanked off and outlet moved to the top.
- i) A flexible fuel line section must be fitted within 75mm of fuel tank and all fuel lines to be securely fixed in position
- j) Barbed fittings of the correct size must be used in conjunction with screw type clamps when connecting flexible fuel line. (Genuine SAE R6 fittings and hose exempted).
- k) Neoprene, reinforced plastic or "Black Fuel Line" may be used. OEM type Bundy steel tubing may be used through the car or under the car.
- l) Flexible fuel lines can pass through the cabin area.
- m) High pressure lines are to use high pressure hose and fittings.
- n) The fuel line to a carburettor engine must be fitted with a quick action NON - LEAK fuel tap or valve, in working order.
- o) The actuator or switch is to be mounted within easy reach of driver and crash crew, and clearly marked "FUEL" ON/OFF
- p) Solenoid valves or remote mounted fuel taps are permitted.
- q) If a return line is used, it must be fitted with a one-way valve.
- r) Electric fuel pumps must be wired with an independent earth. The pump **MUST** be controlled by the 'KILL' switch **AND** by an engine monitoring relay—this device is highly recommended.
- s) Fuel lines **MUST BE ISOLATED** from electrical wiring

- t) Tank/s to be securely mounted in the boot area of the car, in a suitable metal cradle (to restrict movement in any direction) which is attached to the rear chassis bars, with a minimum clearance of 150mm forward of the boot panel and 300mm minimum from side of vehicle, and isolated from driver by a firewall.
- u) Tank vents to be fitted with an anti-spill device.
- v) EFI cars are not permitted to have a fuel tap in the cabin area.

Notes: