

**UKRRA 2020**

**UK Retro Racing Association**



Technical and Construction Regulations for Saloon, F1 and Canam

(If it's not in these regulations, it's not allowed!)

**A – Chassis**

1. Built from scratch or from commercially available kits or parts
2. Allowed materials – Brass: sheet ,rod and tube. Steel: wire, pin tube and commercially available guide tongues
3. Chassis parts cut using laser or EDM methods are only allowed if these are commercially available.

**B. - Chassis construction**

1. Inline motor chassis construction only
2. The chassis must use a one piece, 3 sided brass rear bracket with each side having a Minimum width or height of 5.08mm (0.2”).
3. The motor bracket must support the motor and the axle tube(s) and or bearings.
4. The motor is fixed to the bracket using screws or solder or both.
5. Round wire or tubing rails must connect the front and rear sections of the chassis. Metal strip is not permitted. A rail is defined as that which connects the motor bracket, or the plate to which it is soldered, to the front of the chassis.
6. Steel or brass wire chassis rails may be sanded flat on the bottom but no more than 20% of the diameter may be removed.
7. Commercially available steel guide tongues which are, or have been, commercially available may be added to brass front pieces.
8. Floating pin tubes are allowed.
9. Other than a drop arm all hinges must be orientated either transverse (plumber or iso-fulcrum) across the chassis or longitudinal along its length (pan hinges). (but not both). There is no restriction on number.
10. Centre line hinges are not allowed. If a centre line torsion bar or tuning fork arrangement is used the wire ends must be visibly soldered solidly either into slots or tubes that are slotted crosswise and soldered. There must be at least 4mm free wire between tubes and it must be clear it is a torsion set up and not a pivot.

11. . 'Rattle Pan' designs are permitted. Any such design must consist of only two parts: 1) The main chassis, comprising rear bracket and axle, motor, front section and connecting rails. 2) The 'rattle pan' to which the body must be mounted. The 2 sides must be connected together and move in unison, as one piece. Front wheels may be mounted on main chassis or on the 'rattle pan'.

12. The bottom surface of the whole chassis including the motor must be flat and straight in all directions with no parts drooping below a line defined by applying a straight edge to the underside of the car along its length and across its width.

#### **C - Axles**

1. There must be a front and rear axle, both 3/32 or 1/8" diameter, one piece of solid steel. The front axle does not have to rotate, both wheels can rotate independently. Axles must not protrude beyond the outside of the wheels. Axles may be flattened in the area for gear and wheel securing.
2. Touch and roll – the front wheels must touch and roll when the car is pushed forward.

#### **D - Bushings – free choice**

**E - Drive Type** – inline only with the motor shaft at 90degrees to the back axle and on the longitudinal centerline of the chassis.

**F - Gears** – free choice

**G - Minimum weights** – Saloon – 120g; F1 and Canam – 100g

#### **H - Guide**

1. A single commercially available guide is allowed.
2. The guide must be centered on the longitudinal axis of the chassis
3. Guide lead from the centre of the front axle to the centre of the flag pivot for Saloon is 19.05mm. For F1 and Canam it is unspecified but the body must cover the guide when viewed from above.

#### **I- Weight and the use of tape**

1. Weight can be glued, taped or soldered to the top side of the chassis.
2. Tape that is used to modify the movement of the chassis may only be used on the top side of the chassis.
3. Tape applied to the bottom of the chassis to prevent tarnishing is allowed but must not modify the movement of any chassis component.
4. A body damaged during a race may be taped to the chassis to finish the race, however, the repair must be made during race time.

#### **J - Motors**

1. Eligible motors: One motor only from: Falcon 7, TSR D3, Slick 7 mini brute, JK Hawk 7, JK Hawk retro, Trinity Evil 9, Fast ones Demon.

**Please note;-** Due to the plethora of different specification FK motors and the fact that many of the current motors are now not "Commercially available", 2020 will be the last year that the following motors will be legal in UKRRA FK motor classes;- **Falcon 7, TSR D3, Slick 7 mini brute, Trinity Evil 9, Fast ones Demon.** JK Hawk 7 and JK Hawk retro which are laser engraved are the preferred option. No other makes / models of FK motor will be legal or allowed.

2. From the start of the 2021 season, to ensure simplicity of Tech control and fairness, only JK Hawk 7 and JK Hawk retro which are laser engraved will be legal for FK motor classes. It should be noted that if any other FK motors become Commercially available before 2021 which have the identical specification to the current preferred option which are laser engraved, these may be adopted subject to testing and specification tests.

2. Permitted Modifications: Shortening of armature shaft

## **K – Body**

1. Body type: any vacuum formed (Lexan etc.) clear body, 1/24 scale replica of a real car that was built and raced. Photographic evidence can be presented.

Saloon – four plus seat saloon/sedan/touring car closed top built and raced before 31 December 1975. Reasonable representations of cars that raced in Transam, Nascar stock cars or any touring saloon car series in Britain, Europe or Australasia.

F1 – Formula 1 cars built and raced before 31 December 1969

Can-Am – Two seat open cockpit sports cars built and raced before 31 December 1969.

2. Moulded in spoilers or wings must have been present on the real car and not exceed the allowed width specification.
3. Bodies must be made from 0.010", or greater, material and may not be less than 0.007" on the sides. Any body with thinner sides, or a detriment to marshalling, must be reinforced with tape or body armour.  
  
Bodies must not be wedged or raked and must be mounted as level as possible. (dimensions are specified for 2018 onwards)
4. Body finishing – racers are encouraged to prepare cars with scale realism. Two tone fades, hand written numbers and undetailed interiors are not acceptable.
5. Front and rear arches must be cut out to match the moulded wheel arch lines (if present on the body moulding). Rear arches may be left closed if the full size car ran with closed arches. All wheels must be located centrally in the wheel arches as on the real car.
6. Bodies may not be trimmed above the lower door line.
7. Saloon– The guide flag may be seen when viewed from above but must comply with the dimensions specified.
8. Bodies to be reasonably painted and carry at least three racing numbers, one on each side and one on the front or roof.
9. All bodies to be opaque on all surfaces except windscreens, side or rear windows. (it should not be possible to see a finger through an area of the body meant to be painted)
10. Openings such as air intakes or vents should be cut out or painted.
11. Windscreens or windows must be transparent as on the real car, but not cut out.
12. All bodies must carry a moulded 3-dimensional cockpit interior, including a correctly positioned driver comprising at least helmet/head, shoulders, arms, hands and upper part of a steering wheel.
13. The interior should be reasonably painted and detailed. Paper interiors are not allowed.
14. No part of the chassis including the guide, wheels or running gear, may be seen when looking down on the car either outside the body or through the windscreen, windows or cockpit/cabin area. The exceptions are saloon where the guide flag may be visible and F1 where the axles and wheels/tyres may be visible.

## **L - Add on air control**

1. In Saloon and F1 no add on air control is allowed
2. In Can-Am a single flat plastic spoiler can be added to the rearmost edge of the body. The spoiler height is limited to a maximum of an additional 12.7mm above the top edge of the body. It must be no wider than the outer edges of the body.
3. The spoiler cannot have any notches, holes or cut outs.

**L - Add on air control**

4. Additional wings such as high mounted wings may only be added if used on the original car. Such wings must be securely attached to the body.

**M – Banned bodies**

1. Banned bodies lists will be maintained by the organisers if deemed necessary.



Betta TI22 banned for Can-am

**Technical Specifications Chart**

Class	Max Overall width	width over front and rear axles	Max Chassis width	Min wheel base	max wheel base	Max guide lead	min rear tyre diameter	max rear tyre width	min front tyre diameter	min front tyre width	chassis clearance front	chassis clearance rear	max body height rear	min weight	add on aero yes/no
Saloon	79.37	79.37	76.02	n/a	n/a	19.05	19.05	20.57	19.05	9.53	0.38	1.27	rear - 28 roof - 34 front - 23 r skirt - 12	120	No
F1	82.55	82.55	41.28	98.43	107.95	n/a	20.64	20.57	19.05	9.53	0.38	1.27	34.93	100	No
Canam	82.55	79.38	79.38	n/a	n/a	n/a	20.64	20.57	19.05	5.72	0.38	1.27	34.93	100	Yes
Tottenham and retro sports	82.55	82.55	82.55	n/a	n/a	n/a	19.05	20.57	15.88	4.76	0.508	1.59	38.1 o/a	100 i/l 120 s/w	Max rear wing height 50mm from track

# UKRRA 2019

## Rules - Tottenham Sports and Retro Sports

Tottenham Sports and Retro Sports are two similar classes which run together during races.

Tottenham sports chassis are intended to represent cars which were originally raced in Tottenham in the late 60's & early 1970's. The Retro Sports class allows racers to be a little more "creative" in regard to chassis design while still utilising the same materials and dimensions as the original Tottenham class. The following is a preamble which describes the ethics and design of car in the Tottenham Class. Any other chassis design outside the following description is classified as a Retro Sports Chassis.

Retro Sports cars raced side by side with Tottenham but with a separate Points championship. Racers may race only one of the 2 classes and stick with that class throughout the full year's series. Championship points may not be swapped between Tottenham and Retro Sports.

### Tottenham Sports Cars Technical Regulations

The intention of these rules is to provide a class of 1/24<sup>th</sup> scale scratch built slot cars which replicates the kind of cars that raced on Britain's Raceways in their heyday of the late 1960s and early 1970s.

These rules are based on those of the Association of Raceway Centres (ARC) as published in The April 1970 edition of Model Cars Magazine and interpreted for current use by UKRRA.

Please remember this is a 'Vintage' class and, although modern parts are permitted in the interests of reliability and availability, the use of genuine period parts is encouraged whenever possible.

1. Inline chassis do not have to have straight or one piece front axles but they must be fixed rigidly to the chassis. Sprung 'L' arms are not permitted.
2. *Drive Gears*: Free choice, but period items such as Taylormade, Cox, Cobra etc are Preferred.
3. *Guide Lead*: No maximum is specified but the body must completely cover the guide flag when viewed from above unless the front of the body is less than 1¼" (31.75mm) in front of the front axle centreline. In which case no part of the guide flag may be more than 1¼" (31.75mm) in front of the front axle centreline.

**Note:** For **examples of period chassis designs** look in the pages of period magazines. There are many race reports from events at Tottenham and Nordic in particular and there were several chassis builders who described their chassis construction methods. Another place to look is [scratchbuilt.com](http://scratchbuilt.com) where there are many examples of well known, Mainly American, period chassis designs.

**COMMON RULES For Tottenham and Retro Sports Classes** (if it's not in these regulations, it's not allowed!)

4.

Note;-If at any time the dimensional, motor or body rules change in the Tottenham Sports Class, the same changes will come into effect automatically in the Retro Sports Class to ensure parity.

## 5. Front Wheels and Tyres

- A. Minimum Front Tyre Width: 3/16" (4.76mm).
- B. Minimum Front Tyre Diameter: 5/8" (15.88mm)
- C. One piece front wheels/tyres are permitted.
- D. Front Wheels can be made from any material and be of any diameter.
- E. Front Tyres must be made from rubber or plastic and coloured black.
- F. Tyres made from, containing, or coated with, silicone, urethane or other similar compounds must not be used.
- G. Tyres may be coated with cyanoacrylate adhesive ("Super Glue") or nail polish.

## 6. Minimum Chassis Clearance:

Measured with the car sitting on its tyres on a flat tech block with a 0.020" recess in which the guide, complete with braids, is positioned with the braids flat.

- A. Rear: 0.0625" (1.59mm). Measured under the rear axle. (\*Clearance as per Tottenham rules).
- B. The drive gear may project below the level of the bottom of the chassis but must be clear of the track. It is advisable that the gear should be no lower than the chassis. Any car which has the gear lower than the chassis will be removed from the track during a race if the gear is seen to damage or contact the track.
- C. Front: 0.020" (0.508mm). Measured under the most forward part of the chassis with the guide in free air, unsupported by the tech block. (\*Clearance dimension as per Tottenham rules).
- D. No intermediate part shall be lower than the front limit.
- E. All four tyres must touch and roll on a level track surface at all times.
- F. Touch and Roll Check. Scrutineers are instructed to ensure that all cars are checked, in the slot on the track being used for the event, to ensure that the Front Wheels touch the track surface and roll when the car is pushed forward.

## 7. Axles (Front & Rear):

- A. Minimum diameter as specified :-

Front axles;- May be made from 3/32" wire/steel only) The front axle should be one piece and soldered to the chassis in a manner to ensure it will not detach during the race. Front wheels may independently rotate on the axle. The Axle may be soldered directly to the chassis or rotate freely in a cross tube. (Detached front wheels and or axles / axle tubes must be repaired in race time)

- B. Rear Axles ;- Solid steel axles only, 3/32" or 1/8" diameter only.
- C. Hollow axles are not permitted.
- D. Front axles may have side play but at no time can the wheels or tyres extend out past the body.
- E. Axles must not protrude beyond the outside face of any wheel or tyre.

## 8. Bushings and Bearings: Free choice.

**9. Drive Type:** Free choice.

**10. Drive Gears:** Free choice.

**11. Minimum Weight:** Complete car, presented at Technical control, Ready to race.

A. Inline Chassis: 100 grams.

B. Sidewinder and Anglewinder Chassis: 120 grams.

**12. Body Height:**

Measured with the car sitting on its tyres on a flat tech block.

A. Maximum: Must not exceed 1 ½" (38.1mm) including any add on air control devices.

B. Minimum: The top of the front wheel arches must not be less than 25/32"

(20mm) measured across the front of the car above the centre line of the front wheels.

**13. Guide Lead:** No maximum is specified but the body must completely cover the guide flag when viewed from above.

**14.** All chassis parts, including the guide flag, wheels, tyres and all other running gear, must be covered by the unmodified body, without any add on aero devices, when viewed from above.

**15.** All wheels must be located centrally in relation to the wheel arches in the body.

**B. Chassis.**

**1. Chassis Type;**

A. Chassis should be Scratch built from Piano Wire and Brass sheet and brass tube only, with the permitted exception of a Spring Steel Guide plate (Maximum length 1 1/4" from the centre of the guide pivot to the rear of the bracket. The addition of up to 2 "ear ring back" lead wire retainers is permitted.

B. Motor orientation may be inline, sidewinder or anglewinder.

C. Commercially available cut brass components and a spring steel guide plate may be used

D. Irrespective of motor orientation, the rear axle must be supported in a brass tube or tubes (which may contain ballraces/bushings). The axle tube (or tubes) must be supported in position by connection to the chassis rails. In Sidewinder and Anglewinder designs the Rear axle tube may not be soldered directly to the rear of the motor to provide a single assembly, however, the axle tube may be braced to the motor can to maintain gear mesh. Solid material "pillar blocks" may not be used to connect the axle tube to the chassis rails.

**2. Guide**

A. Only one slot guide is permitted per car.

B. The guide must be a commercially available type but can be from any period.

C. Centre line Torsion Bars will only be legal if they are solidly and visibly soldered at both ends either to pockets in the main chassis components or if soldered into tubes at either or both ends have a "free wire" distance of 4mm minimum between the tubes, additionally the tubes to be slotted crosswise and soldered, to openly display to scrutineers that it is a Torsion Bar and not a pivot.

**Exclusions applying to all chassis.**

A. 'Flexiboard' designs (i.e. Chassis with a longitudinal centre line hinge) are not permitted. The definition of "flexiboard" includes any pivot (either enclosed in a tube or free mounted and resting on another chassis component) where the pivot may be seen to be on the centre line of the chassis design and longitudinal in orientation, providing a central pivot point around which the front and rear of the chassis may be seen to pivot.

- B. Spring Steel Sheet may not be used, except as a guide tongue.
- C. Track Skids are not permitted.
- D. Lead ballast may be added to the top surface of the chassis, but should not modify the movement of the chassis components. Other materials not specified in these rules may not be added to the chassis. Only Clear Sellotape may be applied to the Bottom of the Chassis to prevent Tarnishing of Brass. This must not modify the movement of any chassis component.

C. Motor.

1. Period Motors:

Any complete motor, or motor assembled from parts, intended for slot racing and manufactured and sold in 1972 or earlier may be used.

2. 'C' Cans Motors:

A. Any Mura or Champion 'C' can of the type without lightening cut outs around the end bell mounting may be used. Two hole type cans are the preferred option.

The can must be 0.030" (0.76mm) minimum thickness material and of standard length with no lightening.

B. Magnets must be a one piece type with a minimum length of 0.500" (12.7mm).

C. Armatures for these motors must have a minimum diameter of 0.500" (12.7mm),

a maximum diameter of 0.530" (13.5mm) and a minimum stack length of 0.440"

(11.18mm). Windings and comm timing is free.

3. End bells:

A. In the interests of reliability modern end bells of plastic based material may be used in any motor.

5. Hardware:

A. Any type of bearings, brushes, brush hoods, brush springs, spring posts and screws may be used in any motor.

B. Elephant ears for cooling are permitted.

D. Body.

1. *Body Type.*

A. Any vac' formed (Lexan, PETG etc) 1/24<sup>th</sup> scale replica of a real, two seat, Sports Racing or GT car built and raced before the end of 1972 and not included on the 'Banned Bodies' list (see regulation D4) can be used.

B. Bodies must be realistic and reasonably to scale. Aerodynamically improved or generic bodies in the spirit of racing in the specified period may be used providing they meet the Guidelines laid out in the Banned List (see Rule D4A).

2. *Body Finishing.*

A. To remain within the spirit of this class of racing the lower edge of the body should be cut close to the marked cut line on commercially available body shells.

B. Front wheel arches need not be cut out, but if not, must then be left transparent so that the full front wheel and tyre is visible.

C. Rear wheel arches must be cut out so that the full rear wheel and tyre is visible unless the real car had closed rear wheel arches.

D. The body must be fully painted and detailed, including all engine and mechanical detail where shown on the body shell. Authentic real car liveries or paint schemes 'in the style of the period' are preferred. Simple 2 tone fades, numbers drawn on with a pen and un-detailed interiors are not acceptable.



- E. Openings, such as air vents and intakes, must be cut out or painted to look realistic.
  - F. The body must display at least two sets of racing numbers.
  - G. The body must have transparent windows and windscreens in all locations as on the real car.
  - H. Open top cars must have the cockpit opening fully cut out along the upper edge of the windscreen and cockpit sides.
  - I. The body must have a realistic three dimensional interior which includes a correctly positioned and painted driver figure consisting of at least a helmet, shoulders, arms, hands and the upper part of a steering wheel.
  - J. The body must be securely mounted to the chassis. Tape alone is not permitted except as a temporary repair during a race.
  - K. The body must cover the tread of all tyres when viewed from above.
  - L. The chassis, motor and all other running gear must not be visible through the cockpit opening, cabin area or engine bay.
3. *Add on Spoilers and Air Control Devices.*
- A. All add on air control devices must be in a flat plastic material.'
  - B. Rear Spoiler.
    - a. One rear spoiler only.
    - b. Must not lengthen the car by more than 1/8" (3.18mm).
    - c. Rearbody height may not exceed 38.1mm
    - d. Addition rear wing must not increase the overall height of the car to exceed 50mm (1.97") from the track surface.
    - e. Must not extend beyond the widest part of the moulded body shell.
  - C. Rear Side Dams.
    - a. Must not extend further forward than 1" (25.4mm) from the centre line of the rear axle.
    - b. Must not exceed the height of the rear spoiler.
    - c. Must taper in a straight line so that they are level with the body at their forward end.
    - d. Monolithic wing - Rear and side wings may be made from one piece of lexan, however, the final wing section must comply with the dimensional requirements as above.
  - D. Diaplane – Front Splitter.
    - a. One front diaplane only.
    - b. Must not lengthen the car by more than ½" (12.7mm).
    - c. Must not extend beyond the widest part of the moulded body shell.
  - E. Front Trim Tabs.
    - Either
      - a. One trim tab measuring no more than ½" (12.7mm) high by 1"•(25.4mm) wide may be mounted on the centre line of the body, in front of the windscreen.
    - Or
      - b. Two trim tabs measuring no more than ½" (12.7mm) high by ½" (12.7mm) wide may be mounted on the front wheel arches (fenders).

4. *The Tottenham Sports / Retro Sports 'BANNED BODIES' List:*

A. Guidelines for acceptable bodies.

The Body shape must be a reasonable 1/24<sup>th</sup> scale representation of the real car, within the logical limits of vacuum formed production, and not grossly lowered in profile. Bodies of cars raced and/or produced prior to 1973 and modified in terms of aerodynamics or flattening, including bodies which were made as 'generics', but excluding 'thingies' or 'wing car' bodies, should be allowed as being 'in the spirit of the class', provided that any such aerodynamic changes are no more extreme

than that of the most extreme body approved by the IRRRA for the Can-Am class.

See also rules D3Da and D3Db above with regard to bodies with a moulded on Splitter.

B. BANNED BODIES = There are currently no Bodies on this list.