

# **Swaffham Raceway Superstock Specifications**

## **2012**

**Unless the rules state that you can do it, you CANNOT DO IT**

Drivers are reminded that scrutineer checks can be carried out at any time throughout meetings

**Grading denoted by a 2 inch stripe on the roof**

### **1. THE FORMULA**

The object of the race is to complete the specified number of laps in the shortest time. You may only push a car from behind if necessary. You must not lean or spin a car into the Safety fence or deliberately follow a car into the safety fence on the entry to a bend (whether from the Rear or side of the car). Unnecessary baulking of a faster car or attacking the car from the safety Infield is not permitted. Actions deemed to be deliberate or dangerous will carry several different Types of penalties, this may be being loaded up, a three month ban, banned for a year or even a life Time ban.

Racing is in an anti-clockwise direction on a clearly defined circuit with a separate infield. Any wheels Passing over the demarcation lines or entering on to the grassed infield areas will mean that the Driver will be penalised.

Any Driver that wins the first 2 heats will automatically be moved to the next Grade for the Final

### **2. TYPE OF RACE CAR.**

The Race car must be of an open wheeled chassis design, with a front longitudinally mounted engine, driving the Rear wheels. The driver's cockpit must be behind the engine, but in front of the rear axle and be central to the Main chassis rails.

### **3. COMPETITION DRIVERS SEAT WITH HEAD RESTRAINT**

Competition Seats only with a head restraint. The seat should occupy its original position where Possible and be suitably supported at shoulder height and on Both of the sides and back, with a suitable framework or seat Stiffeners.

### **4. SAFETY HARNESS**

The lap belt/straps and crotch straps should not pass over The sides of the seat, but through it, in order to wrap and hold the pelvic region over the Greatest possible surface

It is mandatory to have a 5 point Safety harness with 3" shoulder straps, the lap & crutch Straps can be either 2" or 3" in width.

All seatbelt connection points must be visible and no belts must pass through any firewall.

***The safety of your seat will be judged by the Scrutineers and you will only be permitted to Race when they are satisfied that you will be as safe as possible in any event.***

### **5. VEHICLE WEIGHT & BALLAST**

1. The Race car must not weigh less than 650kg.

2. The Race car must not weigh more than 715kg.

**3. Ballast must be welded on in equal proportions and must not exceed 6mm in thickness**

**4. Cars will be weighed at random times off the year**

### **6. CHASSIS IRONWORK & ROLL CAGE.**

**Key:** SHS - Square Hollow Section

CHS – Circular Hollow Section

#### **Chassis**

1. The Chassis must be constructed of mild steel with a wall thickness of 3mm. No molychrome Or T45 steel to be used anywhere on the Race car.

2. The Chassis must consist of two main chassis rails made from minimum of 40x40mm or 1 1/2"x1 1/2" SHS mild steel. An 8mm hole must be drilled approximately 300mm or 12" back from the front Wishbones, rear mounting in the side of the left-hand chassis rail for Scrutineering purposes.

(The hole may be plugged by a plastic insert).

3. The *maximum* width the main Chassis rails can be are 737mm or 29" apart.
4. Bracing of the under chassis may be of any thickness or size.
5. The main Chassis rails when viewed from the side must be positioned above the horizontal Centre line, drawn between the front & rear wheel centres.
6. Bumper height from the floor to the centre of the bumper must be min 16" max 17"
7. The Chassis rails must terminate past & above the front & rear axle centres, when viewed From the side.
8. At no point can the main chassis rails drop below the horizontal centre line drawn between the front & rear wheel centres.
9. The Race car must have a welded steel under-chassis, minimum size 25x25x3mm SHS or 25mm CHS, whose wall thickness must be a min 2.5mm & maximum thickness of 3mm.
10. 3mm thick steel plates must be securely welded in to the driver's Lower cab/floor area. These must run from the Bulkhead to the front part off the driver's seat.

#### **Bumpers**

1. Front & Rear bumpers must be fitted & consist of a vertical flat surface 100mm or 4" deep.
2. The bumper must cover the wheel/tyre for protection.
3. All bumpers must have rounded edges.
4. Both front & rear bumpers must measure at their centres, min 16" max 17" from the centre of the bumpers flat vertical surface to the ground, without the driver being in the car and as it is presented. At no time can any other liquids be added to the Race car to bring it within the weight..
5. The bumper may be welded or bolted to the main chassis rails. If the Rear Bumper is bolted on it must be welded on 2 sides.
6. The front bumper must have a hoop fitted to the fence side of the bumper which must be Between 152mm or 6" & 381mm or 15" measured above the top of the bumper iron.
7. The driver's left-hand rear bumper to the chassis may be strengthened by a piece of 3mm Wall thickness tube or box.
8. This rear corner must also have an upright post or hoop added, as per the front bumpers Dimensions.
9. Bumpers must be made from 3mm thick mild steel only. The use of 3mm wall thickness tube is permitted but only on the bumper hoops & support.
10. Bumper chains must be fitted to the front bumper and a minimum thickness of 6mm

#### **Roll Cage.**

The minimum roll cage requirements appear below, but it must be constructed as an integral part of The chassis.

1. The cage minimum requirement is 1 ¼" or 35mm CHS or SHS, with a wall thickness of 3mm.
2. The front pillars must be raked a minimum of 15° to a maximum of 50°, back from the vertical.
3. Two roll cage hoops, either running from front to rear or side to side.
4. Two roll cage hoop connecting bars.
5. There must be at least a 100mm or 4" of clearance between the drivers head and the roll Bars.
6. Gusset plates are strongly recommended on all joints but not compulsory.
7. A 3mm thick plate must fill in the top of the roll cage roof & extend to the top edge of the Radius of the roll hoop pillar. The plate must be welded on all its sides.
8. Two chicken bars (one each side) must be fitted between the front & rear pillars.
9. The chicken bars must be 304mm or 12" above the main chassis rails or 737mm, 29" from the ground to the top of the chicken bar.
10. The chicken bars must have a minimum of two down connecting bars made from tube or box Using either 25x25x3mm, 32x32x2.5mm or 38x38x2.5mm.
11. Steel mesh up the front off the roll cage is not compulsory but advisable

#### **Cab Specifications.**

19. The Cab must be at least 711mm or 28" wide between the chicken bars at the driver's seat. Height.
20. The Cab floor must be completely filled in up to the seat with metal. *See also point 7.*
21. If the Cab floor is below the chassis, the sides must be filled in & braced to prevent the Driver's legs or feet going outside of the Cab.

22. A metal firewall must exist between the front of the Cab & the Engine Bay and must fit tight around the bell housing.
23. A metal fire wall must exist between the rear of the seat and the fuel tank, including the Filler cap. The bottom of the tank must be left open for spillage purposes.
24. A 3mm plate must be welded directly behind the fuel tank to protect it from rear impact, if the tank is positioned in that area. If the Fuel Tank is located next to the side rails, this rear plate can then be down graded to 2.5mm thick  
Damage. The plate must be welded on all four sides & be a *minimum* of 304mm or 12" high, Above the main chassis rails.
25. The driver's seat must be of a competition type with suitable side supports and a headrest. The seat base must not be less than 305mm or 12" from ground level.
26. The seat must be securely fitted to the chassis & attached to the roll cage at shoulder Height.
27. A steel plate, minimum thickness 3mm, must be fitted below the seat, and a minimum of 2 bolts fitted. The plate is to mount the propshaft hoop and to protect the driver's posterior from the prop-shaft, should it break!
28. Any part of the prop-shaft not covered by the seat plate must be covered by a suitable Metal covering.
29. A steel hoop must be fitted around the prop-shaft to catch it in the event of either end of the Prop-shaft breaking.
30. The only part of the underside of the Race car that may be covered in metal is the area Between the firewall & the front of the driver's seat, to a width of the main chassis rails.
31. A sump guard of 3mm ally or steel may be fitted but it must not overlap the width & length of the sump by more than 76mm.

#### **Side Irons**

1. These must be constructed of 2.5 oval tube or 3mm thick mild steel tube, box or channel section & Be of equal proportion in construction on both sides of the Race car.
2. The side irons must be level with the outside edge of the tyres  $\pm$  38mm.
3. The side irons must be 4" deep bottom rail 18" long.
4. A *minimum* of two supports with a 3mm wall thickness is allowed from off of the main chassis to the side irons. Any other supports may be of any size or gauge.
5. The side irons must not terminate more than 203mm or 8" from the tyres outer circumference.
6. The style or shape of the side irons is free. but must be identical both sides

#### **Rear Wheel Guards**

1. Offside and Nearside rear wheels must have sufficient Spring Guards fitted. So as to prevent the wheel becoming detached
2. A piece of spring steel is the ideal material, and it must be mounted so that the front facing section of the leaf is located inside of the side iron and the rear of the leaf is attached to the rear bumper.
3. **Heating, cutting and** Bending of the spring is permitted.
4. High tensile fixing bolts must be used either end with a *minimum* diameter of 12mm.

#### **7. AEROFOIL – single fin**

1. A single fin plate mounted centrally on the roof with the racing number on it is permitted.
2. Must have a 2 inch strip of roof colour on fin
2. Two fin plates positioned either side of the roof with the racing number on them is permitted.
3. Fin plate numbers must be 229mm or 9" high by 38mm or 1½" in width, black numbers on a white background.
4. An aerofoil made from aluminium or fibreglass can also be used, but its maximum dimensions must not exceed 1219mm or 48" in breadth and 457mm or 18" in depth.
5. Side fin plates must be located horizontally on the aerofoil & be identical in position.
6. The maximum size of the fin plates is 660mm or 26" in width by 305mm or 12" in height.

#### **Big Wing**

F2 wings are also permitted.

## 8. FRONT SUSPENSION

### **RACE CARS WITH IN BOARD SUSPENSION WILL NOT BE PERMITTED TO RACE**

1. Each corner of the car is only allowed one shock-absorber.
2. The maximum front track width, which is measured on the centre line of the front axle, at the lower outer edge of the tyre is 1727mm or 68".
3. The wishbones and the front / rear track, may be checked by the Scrutineers at anytime.
4. The foot valve may be modified with parts from the original manufacturers unit.
5. Shock-absorber oil may be changed to a different type.
6. Double adjustable shock-absorbers are not permitted.
7. Any type of suspension is allowed, but suspension arms must be made of steel.
8. When a beam axle is used 1" offset is permitted.
9. When Independent front suspension is used it must be symmetrical to the chassis rails. To alter the steering geometry you may use one of two methods.
  - a. Method 1. You must have equal length top suspension arms but re-locate the upper chassis mounting, in or out by a maximum of 25mm or 1". With the lower arms, they must both be the same length either side, but the lower chassis mounting point may be relocated in or out by a maximum of 38mm or 1½".
  - b. Method 2. Keep the pick-up points symmetrical to the chassis but have un-equal length top & bottom suspension arms. The tolerances are the same i.e. a maximum of 25mm or 1" difference at the top & a maximum of 38mm or 1½" at the bottom.

**The Inside weight must not exceed 53%**

## 10. REAR SUSPENSION

### **RACE CARS WITH IN BOARD SUSPENSION WILL NOT BE PERMITTED TO RACE**

1. The only rear axle permitted is the Ford unit as fitted to the Cortina, Capri or Escort.
  2. The half-shafts must be the semi-floating bearing type as fitted to the axle, in their original position & with the bearing retaining collars welded.
  3. The axle casing must be fitted centrally in the Race car chassis  $\pm 25\text{mm}$  or 1". On the occasion that a bent axle tube is replaced, it must be to the original specification with the exception of the material thickness.
- Inside weight must not exceed 53%**
4. The axle casing must not be modified in any way to achieve Camber change or rear steer. Although cuts to straighten are permitted, no rose jointed links to alter the axle track are permitted
  5. All axle link bars must be made out of mild steel tube or box, not aluminium
  6. Any type of fixed adapter or spacer fitted to the hubs, shafts or wheels must be securely bolted on to either the Halfshaft or wheel
  7. Any type of spacer to alter the rear track is allowed.
  8. The maximum rear track width, which is measured on the centre line of the rear axle, at the lower outer edge of the tyre, is 1727mm or 68".
  9. Differentials may be locked by welding or remain un-locked. **NO L.S.D's or powerlock differentials**

## 11. FRONT HUBS & STUB AXLES

1. Cortina and Sierra front hubs are permitted, also is the fabricated hub assembly from H.C.D and Randall Motorsport.
2. Both front hubs must be *identical*. i.e. whatever is on the NSF must be a mirror image on the OSF.

## 12. WHEEL RIMS

1. Any FORD/PEUGOT/CITROEN steel or alloy wheel is permitted and must be in good condition. Weller, Compomotive, Revolution, etc and other competition wheels are permitted
2. The wheel off-set must be equal on the same axle, but they can be different on the axle's front to rear.

3. The maximum rim width on the rear is 10".
4. **Fabricated hubs can only use a max width off 5 ½" rim on the front. Standard hubs - Cortina/Sierra with No Modifications carried out, such as re-drilling off steering arm/positions, can use up to 8" wide front wheels**
5. Steel strengthening plates are permitted but must be off the same type wheel centre.
6. Wheel spacers are permitted, These must be bolted on to either the Wheel rim or Half shaft Flange

### **13. TYRES**

1. **A drive/Kingpin Pacer/Nova Technic 175/70/13 & Falken SN 828. From 1st August 2012 all cars must run 2 Falken's on the rear axle. Visiting drivers may race on Yokohama tyres for one meeting only.**
2. Tyre side wall identification marks must not be removed.
3. Tyre softener is not permitted.
4. Tyre cutting is not permitted.
5. Tyre side wall protection(flappers cut from other tyres are optional)
6. New visiting drivers will be permitted to run the F2 spec Yokohama tyre for a period off 1 meeting only, drivers must start at the rear off the grid and will receive no prize money or points for that meeting.

### **14. ENGINE**

The engine must be fitted between the two parallel chassis rails whereby the carburettor / inlet manifold, must not protrude past the outer edge of the chassis rail.

F2 Spec and Super/s spec only permitted

#### **Block / Crankcase**

1. Ford 2 litre SOHC Pinto, whose bore is 90.84 mm & stroke is 77mm.
2. The block maybe re-bored to a maximum of 1.5mm.
3. Sleeving back to 90.84mm is permitted, as well as re-boring the sleeve, to the maximum of 1.5mm oversize.
4. The bore size racing tolerance of 0.005" is permitted, when in-line measured with the crank.
5. The Cylinder block maybe decked, but the pistons must not protrude above the blocks face.
6. Core plugs maybe secured with a secondary fixing.
7. The inside of the crankcase may be painted
8. Standard Ford, Payen & including the standard American Gaskets, are the only ones to be used anywhere on the engine.
9. No competition gaskets are allowed on the engine or ancillaries.

#### **Pistons**

1. Pistons must be standard or standard replacements e.g. Schmidt, Mahle, Hepolite, Wellworthy & Associated Engineering ( Federal Mogul )..
2. Piston crowns must not be skimmed & markings must remain on the crown for identification purposes.
3. Pistons must not protrude above the block face.
4. Three Pistons may be balanced by spot machining, the fourth piston must be original & untouched.
5. Pistons and or Gudgeon pins must not be modified in anyway, apart from the spot machining of the piston.
6. Any make of Piston Ring may be used, providing there is no machining of the pistons or rings.

#### **Connecting Rods**

1. No forged steel rods are allowed.
  2. Three Con-rods may be spot machined on their counter weight balance pad area, at the big & small ends, but the fourth rod must remain original and untouched.
- Con-rod bolts may be changed but the rods must not be modified in anyway to accept them

#### **Crankshafts**

1. The standard Crank must be used.
2. Cross-drilled shafts are not permitted.
3. Oil way holes on each journal can be .relieved.
4. You cannot alter the number of bearings, or fit bearings of less than the minimum width.
5. Over-size shell bearings of standard or heavy duty materials are allowed.

6. Tuftriding & Nitriding of the shaft is permitted, but polishing is not.
7. No forged steel cranks are permitted
8. Cranks may be balanced, but by spot machining only. N.B. Spot machining means either, hand grind, drill or machine.
9. The Standard pulleys on the crank & auxiliary shaft must be used.

#### **Flywheel**

1. Only the 2 litre flywheel can be used, no 1600cc ones are to be used after the end of May 2008.
2. Flywheels must be dowelled to the crankshaft.
3. The 2 litre flywheel may be lightened, NO HOLES or SLOTS its minimum weight is 12.7kg, this includes the clutch assembly, dowels & bolts. **Spiders web flywheels are not permitted**
4. The flywheel may be balanced by spot machining only.
5. No competition clutches are allowed.

#### **Cylinder Head**

1. Any 2 litre casting is allowed
2. The head face may be skimmed.
3. Material must not be added or removed from the ports or combustion chamber, it should remain as standard.
4. Valve guides may be fitted but they must be the Ford replacement type, but not the bronze or competition types.
5. The use of thin wall bronze inserts in existing guides is permitted.
6. Inlet Valves must be standard; their length must be 110.10 – 121.60mm. with a head diameter of 42mm. **N.B On standard Ford Inlet Valves only, where the back of the valve meets the valve seat, there may be a slight lip, this may be ground away at a 30° angle, to a maximum width of 2.5mm.**
7. Exhaust Valves must be standard; their length must be 110.65 – 111.65mm. with a head diameter of 36mm.
8. Any single or double valve spring may be used & the head modified to allow the springs to fit.
9. You must use the standard valve spring caps & collets
10. You may replace the ball studs for a complete set of the extended type.
11. When valve seat inserts have been fitted, the lower edge of the insert, where it meets the throat of the port, can have this sharp edge only blended in.
12. Three angle valve seats are permitted.

#### **Camshafts**

1. Camshafts are free & may also be of the centre drilled type.
2. The spray bar may be removed & a splash shield may be fitted.
3. An adjustable type cam wheel or off-set keys are allowed.
4. The standard length 2 litre cam belt & its tensioner must be used, which must not be modified in any way.
5. Roller cam bearing are not allowed.
6. Rocker arms are free, but no roller rockers are allowed.
7. Rocker arms may have the ends nipped.
8. Heavy duty rocker finger retaining springs are allowed.

#### **Lubrication System**

1. A High pressure oil pump may be used but not be a high capacity type pump.
2. Dry or semi-dry sumps are not allowed.
3. Oil galleries in the block & head must remain un-modified.
4. The oil pick-up pipe must terminate within the sump.
5. Sumps may be modified to hold more or less oil & may be baffled to prevent surge.
6. The oil filter must have a secondary fixing & the filter must occupy its original position.
7. Oil coolers may be fitted in the engine compartment only, using the sandwich plate between the filter & the block.

### **15. OIL CATCH TANK**

1. A 1 litre metal oil catch tank must be fitted in the engine bay.  
**A Secondary Bottle must be fitted to catch the over flow from the first breather bottle/box**
2. The tank may have a minimum of 2 breather pipes connected to it: one from the rocker box & one from the crankcase.
3. Ineffective tanks during racing or practice will mean the car being withdrawn from the event.

## **16. INLET MANIFOLD**

1. Must remain as standard, the faces cannot be faced to alter the angle of the manifold or the carburettor. **Facing allowed to clean surface only**
2. No inlet port matching from the Carburettor flanged face will be permitted or from the manifold ports to the head.
3. No material may be added or removed from the gas-flow area.
4. Water holes may be blanked off.
5. A stabiliser bar may be fitted to support the manifold.

## **17. CARBURETTOR**

1. Only the Weber 32/36 DGV or DGVA carburettor may be used **with a maximum sized chokes of 26mm and 27mm.**
2. **No polishing or re-profiling is allowed.**
3. No modifications to the carburettor body or the original design.
4. Gaskets must be the original or pattern replacement, with no modifications made to them
5. The Insulation block & two gaskets must be fitted between the carburettor and manifold. Max thickness 5mm.
6. All jets, emulsion tubes and Venturi's may be replaced with different ones of the same type.
7. Accelerator pump jets may be changed, but the outlet of spray beak must face down towards the throttle butterflies.
8. Throttles may be modified to open together
9. Cold starting devices may be removed & the holes blanked off.
10. Air & fuel galleries may not be enlarged or modified.
11. Floats may not be modified or weighted and must control fuel flow.
12. Float chamber needle valves may not modified or be larger than 250.
13. The calibrated brass bush which controls the high speed enrichment, fitted on the Secondary choke side of the carburettor between the top and the carburettor base, may be sealed off or enlarged, but it must be fitted.
14. The power valve in the base of the float chamber may be sealed off & the diaphragm removed.
15. A grub screw or similar device may be used to secure the auxiliary venturi to the carburettor body.
16. A secondary fixing is required on the fuel feed to the carburettor.
17. Sealing wire holes must be drilled in the appropriate places.
18. No trumpets are allowed.

## **18. FUEL SYSTEM**

7. All fuel tanks must be made of steel or aluminium & have a positive means of fixing.
8. The tank must be mounted behind the driver, or on the nearside of the car below the nerf rails and must be protected from impact with a minimum 3mm thickness plate.
9. Fuel tank caps must be of the metal screw on type, no push fit caps are allowed.
10. The fuel tank & cap must be covered by a complete metal fire wall if inside the cab.
11. The fuel outlet must be from the top of the tank.
12. A breather pipe; which should incorporate a one-way valve, must be fitted or a vent pipe terminating below the tank.
13. All fuel pipes must be inside the race car.
14. If a floor exists under the tank, there must be four 50mm drain holes in case of spillage. It is advised that the bottom area of the tank be left open.
15. A fuel shut off tap must be within easy reach of the driver.
16. A single electric pump may replace a mechanical one.
17. Fuel regulators are permitted.

## **19. EXHAUST**

1. Exhaust manifolds are free, but they must be positioned outside the main chassis rails on the offside of the car.
2. A silencer must be fitted outside of the main chassis of the car.
3. The silencer as well as reducing noise must have the original pipe work protruding from each end of the box
4. The length of the silencer tail pipe, from the end of the box to the end of the tail pipe, has a maximum length of 75mm or 3"
5. Silencers must be in accordance with either F2 and super/s spec

### **Covers over the rear silencer are optional**

7. Where the exhaust passes through the cockpit or cab, the exhaust system must be covered with a metal heat shield

## **20. COOLING SYSTEM**

1. Radiators are free.
2. The Cooling system must be contained within the engine compartment i.e. between the chassis rails, with the radiator positioned in front of the engine.
3. The water flow circuit must terminate forward of the drivers cab, 152mm from the floor.
4. Crankshaft / water pump drive belt is free.
5. there must also be a secondary catchment bottle to contain any water/antifreeze from the system overflow

## **21. THE DISTRIBUTOR & IGNITION SYSTEM.**

1. The standard 2 litre Pinto distributor Bosch or Motorcraft must be used.
2. The standard Ford points or electronic ignition using a conventional coil should be used, but as an alternative the Lumination system may be used with the standard ignition coil..
3. No engine management systems are allowed.
4. No multi-spark ignition systems are permitted.
5. The mechanical & vacuum advance may be altered.
6. The vacuum unit may be removed from the distributor.

## **22. BATTERIES & ELECTRICAL SYSTEM**

1. Batteries must be securely mounted in trays, not battery boxes & covered with a rot proof material, if they are not of the sealed type.
2. Battery position is free if fitted between the chassis rails.
3. Batteries fitted outside the main chassis rails, **must be fitted against the side of the main chassis rails.**
4. **BATTERY SIZE if using 2 battery's max size 038 if using a single Battery then max size 063**
4. Oversized batteries must not be used as ballast.
5. A batter master switch must be mounted on the dashboard & clearly marked ON & OFF.
6. If an electric fuel pump is used a cut off switch must be positioned within easy reach of the driver so as to isolate the pump.
7. A starter motor must be fitted & working at all times.
8. Contact between the battery & safety harness must not be possible.

## **23. MIRRORS**

1. A rear view mirror is allowed but is not compulsory.
2. Door mirrors if fitted, must not be more than 76mm from the cab.

## **24 GEARBOX**

1. 4 or 5 Speed gearboxes can be used.
2. **All gearboxes must have fully operational gears and must not have any gears removed.**
3. Trans x type gearboxes are permitted.
4. Alloy bell housings are permitted. But must be in good condition.
5. Quickshift gearsticks are permitted. Either bolt on type (sierra) or screw in type (cortina)

If there are any concerns regarding the rules for 2012 please post your concerns on the Swaffham Forum, and contact your drivers reps

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Kelven Nichols 13.2.2012