2nd Quarter 2008 Formula Vee Rule Changes

The second part of the rationalisation of F Vee rules has been approved by CAMS and will appeared in the 2nd quarter 2008 CAMS Manual due out in the first week in April.
These rules will apply from the 1st April 2008, Competitors should make themselves acquainted with them. The submission for the rule changes can be found at the end of this note. The submission was accepted in full, however some of the wording may change slightly when CAMS releases it in the Manual, but the intent will be the same as proposed.
The new wording is underlined and the rational is in blue.
In general the changes are intended to make the F Vee rules more "user friendly" and any existing cars or their sealed components should not be made ineligible provided they meet current regulations.
Minimum weights have been introduced based on realistic weights and balancing of commercially available mass production components, (note the 1600cc piston + gudgeon weight has been increased).
One item that may affect some is the introduction of a maximum valve lift, it will be measured at the completion of competition "As Found" in parc ferme, i.e. at what ever temperature and valve lash at the time of measuring.
Another point competitors should remember is that if there is any conflict between CAMS and FVAA Technical Manuals, then the CAMS Manual takes precedence over the Technical Manual.
The FVAA Technical Manual is currently under review and a new issue, along with a F Vee Parts Recognition Document will be out towards the end of the year.

A Sealing Card system has be introduced which will provide permanent record of the sealing history of an engine or gearbox. Sealing record cards will be assigned to each engine and gearbox rather than the vehicle as many competitors now have spares of each and they are quite often lent, leased or sold. As a national category it is hard for Eligibility Scrutineers to keep track of an engine or gearbox that was sealed in one State, it's owner living in another State and some times competing in a third State. The intent of the new system is to allow greater transparent and accountability in the tracking of a engine or gearboxes sealing history. The Sealing Card must be produced on demand at any Eligibility Scrutineering at any Event.
Each State should by now have a system in place to deal with currently sealed engines and gearboxes.
A detailed explanation of the system can be found in the Rules and Technical section of this web site.

Greg Hepburn
FVAA NTD

Proposed changes to Formula Vee Regulations in the Quarter 2 / 2008 CAMS Manual

Category Association:
Formula Vee Association of Australia
10 Hod Way, Malaga, WA 6090
President: Mr Scott Wythe
Website: *www.fvee.org.au*

Note change of address

Change 2.2(iv) Bodywork to read:
(iv) Air ducting may be used provided that it is **not capable of pressurising the induction system.**

Rationale: Regulation was intended to prevent "ram air" induction systems or pressurising the system with the cooling fan. Existing wording is causing difficulties with fitting of legitimate carburettor cool air boxes or engine cooling ducting.

Change 2.3 (iii) to read:

• removal of front shock towers – permitted only if vehicle complies with upgraded forward roll over protection requirements as specified for cars first issued with log books on or after 1 January 2003**.** Each shock tower in its entirety may be removed provided it is replaced by a tubular strut of minimum section **50mm x 20mm** x 1.6mm wall thickness, fully welded between the tubes of the H-beam;

Rational: The intent here is to allow ERW tube of either rectangle or oval section.

(iii) On the link pin front suspension derived from the Australian Type 1 1200 Sedan the reinforcement of the LH stub axle by the fitment of an 8mm high tensile bolt (Grade 8.8 min) is compulsory. **Such bolt shall pass from end to end through the hole originally provided for the fitment of the speedometer cable, and is to be held in place by a nyloc nut fitted to the inner end.**

Rationale: It is considered that this will provide a more secure reinforcement than the current regulation.

Change 2.3(v) to read:

(v) The fitment of a ride height adjustment device to the H-beam tube containing the torsion spring pack is permitted.

Rationale: Previous requirement that ride height adjustment be achieved by the torsion bars was intended to ensure that the torsion bars were the sole springing medium but was open to interpretation. This requirement is now covered by the newly introduced rule 2.3(ii) in Quarter 1/ 2008

Change 2.3(viii) to read:

(viii) The following deviations from standard are permitted:
• the use of a Type 3 steering box and pitman arm;

• the use of any steering column and steering wheel;
• re-drilling of the pitman arm tie rod attachment holes;
• removal of the steering damper and bracket;
• the use of any tie rods, tie rod ends and fitting attachments;
• relocation of the steering box or removal when rack and pinion steering is used;
• **the use of a rack and pinion assembly**. ~~refer FVAA Technical Manual~~)

Rationale: Original intention for FVAA to specify suitable steering racks proved to be impractical

Change 2.4.2 Disc Brakes to read:

(i) The use of four-wheel disc brakes is permitted, and is compulsory on cars with log books first issued on or after 1 January 2003, and cars fitted with a 1600cc engine.

The following are permitted:

• the use of any disc rotor/hub assembly. Disc brake rotor/hub assemblies must be made from predominantly ferrous material. The disc rotor/hub assembly may only be of one or two-piece construction, and must comply with specifications as detailed in art. 3 - Weights and Dimensions;
• the use of any callipers for front and rear provided the number of pistons per calliper is not more than two, and the number of callipers per wheel is not more than one. Callipers must comply with specifications as detailed in art. 3 - Weights and Dimensions;
• the fitment of calliper mounting brackets and removal of ~~drum~~ backing plates;

Rationale: Allows removal of backing plates from all axles including front disc brake axle. Already common practice.

Change 2.5(iii)(a) Wheels and tyres to read:

(iii)

(a) Where front and rear tyres are not common, it is not permissible to fit front tyres to the rear axle or rear tyres to the front axle positions. **All four tyres fitted to the car must be the same brand**.

Rationale: Prevents running different brand of tyres front to rear.

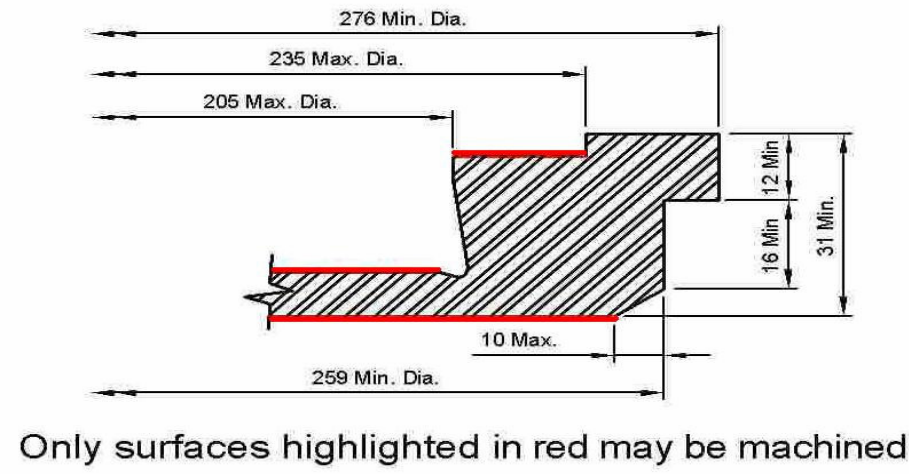
Change 2.6(vi) Connecting Rods to read:

• Re-sizing of connecting rod big end tunnels and replacement of gudgeon bushes is permitted;
• **For 1200cc engines** the connecting rods must comply with the minimum weight specified in art. 3 - Weights and Dimensions;
• **For 1600cc engines** **Lightening of the connecting rods is permitted. No metal may be removed from the beam of the connecting rod. The minimum weight shall be as specified in Art. 3 - Weights and measures**

Rationale: Allowance for lightening will obviate the need for selective sourcing of parts. Nominal weight of a VW rod is 580 gms, allow a couple of close and hone and balance hence minimum weight of 570 gms.

Change 2.6(vii) Flywheel & clutch assembly to read:

• **For 1200cc engines** machining of all flywheel surfaces is permitted. The flywheel must comply with the minimum weight specified in art. 3 - Weights and Dimensions. The use of any flywheel, as used on a Type1 or Type 3 VW originally fitted with a six volt or 12 volt electrical system, is permitted:
• **For 1600cc engines** **Lightening of the flywheel is permitted by machining of the clutch plate and pressure plate contact surfaces and the back face only. The lightened flywheel shall respect the dimensions in the diagram below. Balancing of the flywheel may only be achieved by localised spot facing. The minimum weight shall be as specified in Art.3 – Weights and measures.**



Only surfaces highlighted in red may be machined

Rationale: Standardises flywheel weight and weight distribution.

Lightening of the pressure plate is permitted. The minimum weight shall be as specified in Art.3 – weights and measures.
A conventional solid centre full circle friction face clutch driven plate shall be used. The facings shall be of conventional friction material. Ceramic, metallic and carbon fibre facings are excluded.

Rationale: Standardises weight of pressure plate, lightest replacement clutch has nominal weight of 3.4 Kg. less balancing.
Prevents use of puck type clutch driven plates and racing type friction materials which have been known to contribute to gearbox problems.

Change 2.6 (x) **Cylinders, Pistons, Rings and Gudgeon Pins to read:**

- Removal of metal from pistons for balancing purposes is permitted. The removal of metal from gudgeon pins is permitted for the 1200cc engine only. Metal removal must be confined to the inner surfaces of the piston so that the skirt perimeter is not modified in any way;
- **For 1200cc engines** the pistons and gudgeon pins must comply with the minimum weight specified in art. 3 - Weights and Dimensions.
- **For 1600cc engines** **Pistons may be lightened**. Gudgeon pins are not to be lightened. Pistons shall be cast aluminium alloy with a steel insert and the profile of the bottom of the piston skirt shall be as manufactured. Piston and gudgeon pin shall comply with the minimum weight and dimensions specified in art. 3 - Weights and Dimensions. **A piston ring, functioning in the normal manner shall be fitted in each groove of the piston.**

Rationale: Standardises piston weights and obviates the need for selective sourcing of components. The original weight of 496 was based on a piston and gudgeon set that has been out of production for some years, the commonly available CoFab and Mahl piston set of today have a nominal weight of 520 gms. New proposed weight of 510 gms will be introduced from the 1st June 2008, and any existing sealed engines with the light weight gudgeons will be phased out as they come up for rebuild. Note front runners normally freshen up their top end every 6 months.
Confirms that a ring must be fitted to each ring groove.

Change 2.6(xi)(b) to read;

(a) Replacement of **valve seat inserts** is permitted. The throat diameter may be enlarged All valve seat cuts must be confined to the insert. Top cut shall be 15 deg. Throat cut shall be 75 deg. Valve seat angle 45deg _+ 1.5 deg.

Rationale: For clarity, includes in CAMS Manual the provision that is already in FV Technical Manual

Change 2.6(xi)(d) to read:

(b) **Valve springs** are free provided that **parallel** single springs only are used and are fitted without unauthorised modification to another component.

Rationale: Prevents he use of expensive conical wound springs.

Change 2.6(xii)(a) and (b) Valve Train to read:

(a)Shimming of the rocker shaft posts to the cylinder head is permitted**. Machining of the side of the rocker shaft post to facilitate alignment of the tappet with the valve centreline is permitted**

Rationale: Minimises tappet and valve stem wear. Already common practice.

(b)The valve rockers must be of genuine VW manufacture and of a type supplied on Australian VW 1200 or 1600 Type 1 sedans. No modification of the rocker is permitted save for the removal of metal on the underside of the tappet lever arm and tappet screw boss. Tappet adjusting screws shall be 8mm diameter. The rocker arm ratio shall not exceed 1.18:1 (refer Formula Vee Technical Manual for details). Wave washers may be replaced with flat washers or spacers, and the spring clips that locate the rockers may be replaced by spacers held by bolts or pins inserted into the end of the rocker shafts. **The maximum valve lift measured at any time during or at the completion of competition shall be 9.6mm on the inlet valves and 9.2mm on the exhaust valves. The valve lift will be measured "as found" in Parc ferme.**

Rationale: Ensures parity of valve lift and eliminates problems of massive wear of valve guides and valve stems associated with the extreme rocker geometry required to get greater lift. The proposed lifts are relatively easily achievable, yet they would require some effort to exceeded them. The lift is to be measured at what ever temperature and tappet clearance is found at the time of measuring. Note:- normal tappet clearance on a Formula Vee engine is 1½ thou" inlet, 3 thou" exhaust, set cold.

Change 2.6(xiii) Lubrication System to read:

The following is permitted:

- the use of any standard VW Type 1 oil pump;
- the fitting of an external oil cooler.
- removal of the standard oil cooler;
- the fitting of an external oil filter;
- the use of a non-standard oil pump cover plate. The standard oil pump outlet port may be blocked when such a cover plate is used;
- the use of a sump extension. Any such extensions must be fitted without modification of the crankcase and conform with the specified dimensions. The oil pickup pipe may be extended. The sump plate is free;
- the installation of baffles completely within the crankcase;
- the standard crankcase oil filter/breather outlets may be modified.
- **Any oil filler neck extension and cap may be fitted.**

Rationale: This is a cheap aftermarket new part which obviates the need for de-sludging the original, provides a more secure cap and gives better access for filling.

Change 2.6(xiv)(a)& (b) Engine Assembly to read: remove-

(a) ~~Camshaft and crankshaft endplay must be maintained within specified dimensions~~.

Rationale: No longer relevant as camshaft to crankshaft timing is free.

(b) The use of an offset key or an adjustable cam gear to adjust valve timing is permitted. **A standard VW genuine or non- genuine (as per Rule 4) camshaft gear may be modified to provide the adjustment. The gear mounting holes on the camshaft may be drilled and tapped to secure the gear to the camshaft.**

Rationale: Clarifies that, aside from the adjustment provisions, the camshaft gear must be to VW specification. Wording as submitted for Quarter 1/2008.

Change 2.6(xv) to read:

(xv) Any previously machined surface may be re-machined provided that the total surface is machined to a plane parallel to the original machined surface, and that such machined component respects all relevant dimensions after machining. **The intent of the machining must be to render second hand parts serviceable and not to gain a performance advantage**

Rationale: For clarity, includes in the CAMS manual the provision already in the FV Technical Manual.

Change 2.7 Engine Ancillaries to read:

Only standard VW Type 1 1200cc ancillaries shall be used with the 1200cc engine and only standard VW Type 1 1600cc ancillaries shall be used with the1600cc engine unless specifically stated otherwise in these regulations.

Rationale: Wording the same as before, relocated into relevant section.

(i) Carburettor:

For 1600cc engines:

(f) The carburettor shall be a standard Solex 34PICT**-3** or BoCar equivalent.

(g) Modification of the carburettor is not permitted apart from removal of the automatic choke and plugging of the choke butterfly shaft holes. Any such plugs must be flush with the inner surface of the carburettor top. Plugging of the throttle butterfly air bleed hole is permitted. **Plugging of the gallery to the high speed power fuel spray bar tubes is permitted.** The venturi is considered to be an integral part of the carburettor and may not be modified. A brace may be fitted between the carburettor and engine to prevent movement.

(h) The use of any jet as below, which may be fitted without alteration of the carburettor, is permitted.

The following are defined as jets:

- main jet
- pilot jet
- pilot air bleed jet
- air correction jet
- pump discharge nozzle
- float needle and seat
- **Auxiliary air jet**
- **Auxiliary fuel jet**

A fibre gasket must be placed either side of the restrictor plate; the gasket shall have a minimum inside diameter of 34mm and a maximum thickness of 1.6mm. Carburettor mounting stud/bolts shall be such as to securely locate the restrictor plate with the orifice centred in the carburettor throat. All air and fuel in the air/fuel mixture supplied to the engine shall pass through the restrictor plate.

Rationale:

34 PICT-3 correctly identifies required carburettor. There is also a 34PICT–5 carburettor available that has a larger 27mm venturi.

The carburettor was designed to operate below 4,000 RPM and the 1600cc Formula Vees run between 4,000 and 6,000 RPM, the metering of fuel at high speed is erratic and it is common practise to block the circuitry to the high speed power fuel spray bar tubes (a piece of 2.4mm welding rod is dropped down the circuit hole before the top is put on). It is not uncommon to find the spray bar tubes "gummed up" on old second hand carburettors i.e. not operational anyway.

Add two jets, not noted before, that vary in size.

(ii) **Inlet Manifold:**

For 1200cc engines:

The inlet manifold must be supplied by, and bearing the mark of, the Formula Vee Association of Australia. The inlet

manifold must be fitted in the standard manner. No modifications to any part of the inlet manifold are permitted including coating of the internal and external surfaces.

For 1600cc engines:

(f) The inlet manifold shall be standard VW Type 1 1600 twin port unless stated otherwise in these regulations.

(g) The heat riser tube and alloy heat sink must be removed.

(h) The standard 1600 manifold end castings shall be used. **Each competitor whose automobile is fitted with a manifold that has been cut down for valid chassis clearance reasons may apply to the FVAA for a temporary exemption, valid until the 31 December 2008, to enable chassis modifications to be made.**

(i) Match porting to a depth of 40mm in the manifold casting at the manifold/head joining face is permitted **until the 31 December 2008, after that date it must be stock standard.**

Rational: returning to stock standard manifold i.e. no modifications permitted.
Date puts a limit on the exemption.

Change 2.7(iii) Aircleaner to read:

(a) Removal of the standard aircleaner is permitted.

(c) The aircleaner shall have a horizontal interior surface located no higher than 10mm above the uppermost edge of the carburettor air inlet. The interior of the air cleaner, to a minimum dia. of 70mm centred on the carburettor air inlet and to a minimum height of 40mm above the horizontal surface, shall be free space.

Rationale: Original stipulation of an air cleaner dimension envelope was to prevent fitting of ram tube devices. New wording prevents the fitting of these devices but allows flexibility of air cleaner dimensions.

Change2.7(viii) to read:

(viii) Crankshaft Pulley: The use of an aluminium alloy replacement for the standard steel crankshaft pulley is permitted. Such replacement pulley shall have an OD of not less than 146mm.**with a vee groove width of 12mm**

max. and a groove depth of 13mm max.

Rationale: Prevents re-machining of the groove to obtain an effectively smaller pulley.

Change 2.7(ix) to read:

(ix) A "Vee" section fan belt with a minimum nominal top width of 9.5mm must be fitted. It must pass over the crankshaft and generator pulleys, **but not be in contact with any other device**. The belt length is free.

Rationale: Prevents the fitment of automatic or driver controlled variable belt tensioning devices. Note:- normal belt tensioning is by means of a series of shims between the two side plates of the top pulley, also the fan that the belt drive uses 4 hp at 5,000 rpm.

Change2.8(ii) Transmission to read:

(i) The transmission shall be standard VW, as defined in Section 1 "Definition", unless specifically stated otherwise. The transmission shall be located behind the rear axle.

(ii) **Gear selection mechanism must be mechanical in operation. Electronic, sequential, hydraulic or pneumatic systems are prohibited**. Synchromesh shall be in place and operating on at least three gears.

Rationale: Prevents fitment of unnecessarily complicated shift mechanisms which are not appropriate to the category.

Change 3.1 Vehicle to read:

• Minimum Racing Weight (see "Definitions"):	
1200cc engine	**475kg**
1600cc engine	**490kg**
• Wheelbase**: Pre-2003**	**2095 ± 25mm**
1/1/03 on	**2220mm max.**
• Front overall width:	**1585 max.**
• Rear overall width	**1610 max.**
• Overall length (Note 1):	
Pre-2003	**3425mm max**
1/1/03 on	**3525mm max.**

Note 1: Measured between vertical planes at the vehicle foremost point and the rearmost point of the gear selector housing.

Rationale: Overall width is easier to define and measure than track width with zero camber and toe.

Change 3.3 Engine to read:

(i)	**Crankcase:**	
	• Cam follower bore face to crankcase joint face:	**31mm max.**
(ii)	**Crankshaft:**	
	• Stroke:	
	1200cc engine	**64.1mm max.**
	1600cc engine	**69.1mm max.**
	• Weight:	
	1200cc engine	**8.1kg min. ~~(refer FVAA Technical Manual)~~**
	1600cc engine	**040 105 101.5: 7.95kg minimum**
		all others: 8.8kg minimum
		Note:- all crank weights includes flywheel dowels, camshaft drive gear and key, spacer, distributor drive gear, circlip, No. 3 main bearing.
(iii)	**Flywheel Weight:**	
	1200cc engine	**5.4kg min.**
	1600cc engine	**7.0 Kg min.**
	Clutch pressure plate weight	3.3 kg min.
(iv)	**~~• End float:~~**	**~~0.20mmm max.~~**
	• Inlet and exhaust phase angle:	**107° ± 15'**
	* Cam Follower Wt. 1600 engine	80 gm. Minimum for engines sealed after 1st July 2008.

Rationale: Specifies how the minimum crank weights are achieved.

Nominates minimum weights for lightened flywheel and lightened clutch pressure plate.
Nominates minimum weight for cam followers to prevent use of light weight aftermarket components.
End float dimension not required as cam timing is free.

(v) **Pistons/Cylinders/Connecting Rods:**

• Cylinder bore:

1200cc engine	**77.21mm max.**
1600cc engine	**85.70mm max.**

• Piston top to cylinder seal face:

1200cc engine	**1.0mm min.**
1600cc engine	**Refer to table below**

• Weight and Dimensions:
piston/gudgeon pin (less gudgeon clips and piston rings):

1200cc engine	**330g min. ~~(less gudgeon clips & piston rings)~~**
1600cc engine	**510g min. For engine top ends sealed after the 1st July 2008**
1600cc engine only	**Minimum length from crown to bottom of skirt at gudgeon pin axis 62.5mm Minimum length from crown to bottom of skirt at 90 deg. to gudgeon pin axis 80.5mm**

• Weight: connecting rods:

1200cc engine	**440g min. (incl. little end bush, cap, bolts but not big end shells)**
1600cc engine	**570g min. (incl. little end bush, cap, nuts but not big end shells)**

Rationale: Nominates minimum weight of lightened piston and is more realistic than previous 496 Gms.
Nominates minimum weight of lightened connecting rod (nominal weight 580 gms.)

(vi) **Cylinder Head:**

1600cc engine

• Intake port diameter at flange face:	**31.0mm max.**
• Exhaust port diameter at flange face:	**32.0mm max.**
• Combustion chamber volume:	**Refer to table below**
• Valve guide length:	**62.5mm ± 2.5mm**
• Cylinder head secondary cut OD:	**85.0mm ± 0.5mm**
Outside diameter of inlet and exhaust seat inserts	**38.5mm inlet** **35.5 exhaust**

Deck height table – 1600 engine

Combustion Chamber Capacity		Deck Height
From	To	
48cc	And above	1.00mm
47cc	48cc	1.15mm
46cc	47cc	1.35mm
45cc	46cc	1.50mm
44cc	45cc	1.70mm
43cc	44cc	1.85mm
42cc	43cc	2.05mm
41cc	42cc	2.20mm
40cc	41cc	2.40mm

Rationale: Moves table in FV Tech Manual to CAMS manual for clarity and accessibility. Corrects calculation discrepancies in existing table.

(ii) Inlet manifold Dimensions

1200cc engine

FVAA Manifold	**As standard**
~~OD horizontal tube~~	~~**25.25mm max.**~~
~~OD vertical tube~~	~~**28.75mm max.**~~
~~Weight~~	~~**680g min.**~~

1600cc engine

• ID Horizontal tube:	**32.00mm max.**
• Casting diameter at flange:	**31.00mm max.**

Rationale: Updates specifications to allow for 1200 FVAA Manifold as per rule 2.7 (ii). Old dimensions referred to VW 1200 manifold.

~~**(iii)Air Cleaner**~~

~~Maximum envelope Diameter:~~ ~~**150.0mm max.**~~
~~Height above carburettor top:~~ ~~**80.0 mm max.**~~

Rationale: Air cleaner dimensions not required with new regulation 2.7(iii)

Change 4. NON-GENUINE PARTS to read;

The use of the following non-genuine VW replacement parts is permitted. The parts must be standard replacement parts in terms of configuration and functional dimensions and **for all practical purposes replicate the original VW component. Their fitment** shall not result in unauthorised modification of any other component.

Rationale: Strengthens intent of current regulation.

a	gaskets and seals	**j**	brake shoes	**s**	Rocker covers
b	cylinders and pistons	**k**	wheel cylinders	**t**	air correction jet carrier
c	bearings	**l**	clutch plate and pressure plate	**u**	valve seat inserts
d	valve guides	**m**	**king pins**	**v**	brake drums
e	engine valves	**n**	torsion arm link pins	**w**	cam followers
f	valve springs	**o**	axle boots & axle tubes	**x**	valve push rods
g	fuel pump	**p**	Camshaft & gear	**y**	crank cases
h	voltage regulator	**q**	steering box	**z**	ball joints
I	fan, fan housing		Oil pump		

Any external surface of the crank case, gearbox, front H beam, rear axle tubes or fan housing and tinware may be painted or plated.

Rationale: Confirms surface finish of external surfaces need not be to VW specification.

7. SCRUTINY AND SEALING

(i) All engines and transmissions shall be scrutinised and sealed in accordance with the procedures detailed in the FVAA Technical Manual.

(ii) A record of all sealing must be entered **on the FVAA Sealing Record Card** and detailed on the standard FVAA Record Sealing Sheet (Certificate of Compliance). After 1 July 2008, Sealing Record Cards for engine and gearbox must be available for inspection at any competition for which the vehicle is entered. Vehicles without, or unable to produce on demand, valid Sealing Record Cards for engine and gearbox are ineligible for Formula Vee competition.

(iii) Scrutiny for sealing purposes must be conducted by accredited FVAA Sealing officers. No Sealing Officer may seal the same sections of an engine or a gearbox on consecutive occasions (which shall be deemed to be an

invalid sealing procedure) except under emergency circumstances in the course of an event for which the vehicle is entered, in which instance the sealing is valid for the duration of the event only.
(iv) Scrutineers are to be allocated in accordance with the procedures in the FVAA Technical Manual.

Rational: Engine and gearboxes are lent, sold and leased on a regular bases and the old system of entries in log books was impractical. The new system gives a much better (traceable) sealing history of the engine or gearbox.

Change 8. ELECTRONIC SYSTEMS to read:

8.1 Electronic communication systems designed to provide communication between driver and other persons during competition (eg, radio, mobile phone etc) are not permitted. **No electronic systems capable of controlling a function of the car are permitted unless specifically authorised in these regulations.**

Rationale: Prevents the use traction control, ABS, electronic management systems, active suspension, etc., which may otherwise be allowable under the regulations.