

# MAMS International Open BAJA CHAMPIONSHIP



2017

## Technical Regulations

## **ART. 1 DEFINITION:**

**QUAD** is an off-road vehicle equipped with four wheels and driven by a motorcycle engine.

A vehicle is also considered as quad if equipped with a 4x4 universal joint drive. The rear wheel drive is controlled by chain and ring gear on a fixed axle connecting to the rear wheels or by mechanical transmission and differential for two/four-wheel-drive, this is a standard drive for 4x4 vehicles, whereas it is optional for 2x4 ones.

Steering is controlled by handlebar.

**MOTO: see MAMS-FIM/FIM Europe Enduro Technical Rules**

**SBS/UTV or Side by Side (not under FIM/FIM Europe Enduro Technical Rules):**

is an all-terrain vehicle with four wheels at each end diagonal, consisting of a complete integral unit with one or two seats (side by side) for one or two rider-competitors, led by a steering wheel and powered by a motorcycle engine.

Only SBS/UTV with homologation as quadricycle are authorised.

All vehicles must be duly registered for road traffic and relevant papers must be available. Sbs vehicles and their equipments must comply with the national legal requirements for Road Traffic of the country in which the vehicle is registered and with any other rules specified and in the Supplementary Regulations.

Temporary registration plates permitted, subject to compliance with the law.

## **ART. 2 ADMITTED CLASSES AND VEHICLES:**

**Motorcycles: Overall**

**Quads: Overall**

**SBS/UTV: Overall and two classes** (Super Buggy an Extreme Buggy)

- **Super Buggy: SBS – up to 1.050 cc and/or FIA T3 buggies** (2x4, 4x4, manual or automatic/ CVT gearshift as list compiled by the person/promoter in charge)

- **Extreme Buggy: SBS – up to 1.000 cc with turbocharger** (the cylinder capacity multiplying coefficient is modified to 1.5) **or up to 1400 cc without turbocharger** (2x4, 4x4, manual or automatic/ CVT gearshift as list compiled by the person/promoter in charge)

All vehicles must be duly registered for road traffic and relevant papers must be available.

**Temporary plates are not admitted.**

## **ART. 3 WHEELS (Motorcycles-Quad):**

Quad: max diameter 15”.

Quad: no binding measure as for front rim’s width is requested.

Motorcycles: the mudguards must be made of plastic or similar flexible material

and the inclination of the inner part of the mudguards must be 30°.

Quad: front and rear mudguards must be made of plastic and similar materials, respecting- in shape and measures- the original equipment mounted by the manufacturer and/or original and/or main manufacturer. It is forbidden cut or modify the front and rear mudguards compared to the original shape and measures of the OEM parts (original equipment manufacturer).

#### **ART. 4 TYRES (Motorcycles-Quad):**

Tyres with spatula shaped pattern, spikes or any anti-skid system are forbidden, except for races on ice or sand.

It is compulsory to use homologated tyres.

Quad+Moto (not SBS): homologation E + numbers of made Country, D.O.T., (Motorcycles see also Enduro Cross Country Technical Rules).

#### **ART. 5 BRAKES (Quad):**

The front wheels must be provided with a braking system, driven by a single lever on the handlebar.

The rear wheels may have one or two single brake(s) on the transmission axle, driven either by a lever on the handlebar or by pedal control.

The pedal brake may be coaxial with the footboard, but it must be built in a way to be working even if the footboard is broken.

#### **ART. 6 SIZES (Quad):**

The maximum width of the vehicle is mm. 1300, whereas mm. 1320 for utility class.

The maximum height of the saddle is mm. 950, whereas mm. 1000 for utility class.

#### **ART. 7 HANDLEBAR AND LEVERS (Motorcycles-Quad):**

The width must be between mm. 600 and mm. 850.

The ends of the handles must be equipped with plugs.

The handlebar must be equipped with stop limiters, which avoid its complete turning around and provide a 20 mm. minimum distance between the handlebar and the fuel tank.

It is permitted to fit handle guards made of strong material but their size must allow free movement of the hands and they may not be connected to the end of the handle itself.

Handlebars made of alloy material may not be repaired.

Levers must end with a ball with 16 mm. minimum diameter.

#### **ART. 8 ACCELERATOR DRIVE (Quad):**

This drive may be operated by a handle or by a lever, but it must in any case return automatically to idle position, when released.

## **ART. 9 EXHAUSTING SYSTEM (Motorcycles-Quad-SBS):**

It may not be over the rear outline of the vehicle.

The end of the silencer must be in level position for at least 30 mm, as provided with rounded rims of minimum 4 mm. radius.

## **ART. 10 PROTECTIONS AND SAFETY MEASURES (Quad):**

Quad: a shock- resistant bar must be set behind the rider's seat, being at least as wide as the saddle. The number holder shall be set on that bar.

Quad: a shock- proof protection is deputed to shield at least the lower and back parts both of the chain ring and the brake plate/s.

Quad: some safety bars or bumpers must be fitted on the front part of the quad between the wheels, provided rounded (not angular) rims. Similar protection device must be fitted on the side parts of the quad, between the front and rear wheels; that device must have a rounded profile (mm. 25 minimum diameter).

Projections are not admitted.

Quad: a grid (made of interlaced belts) must be fitted between the chassis and the side safety bar to avoid the racer may touch the ground except for utility where there is already an original equipment mounted by manufacturer. Any additional fuel tanks may be mounted on such grids, provided a mm. 25 minimum distance from the bar.

Quad: it is compulsory to fit a safety device going from the rear mudguard to the side grid.

Quad and Bike: a switch to stop the engine must be fitted on the handlebar.

Quad: it is also compulsory to set a pull safety device, linked to the racer's body and breaking the circuit and the injection system (if any).

## **ART. 11 NOISE CONTROL (Motorcycles-Quad-SBS):**

### **Noise limit is fixed by FIM.**

Motorcycles and Quad must pass the noise control test, carried out according to the Rules of FIM Europe (2 METRE MAX METHOD), during the preliminary examination and marked by the organiser.

### **115 dB/A Target**

#### **Checks before the race**

**117 dB/A 115 dB/A, + For all engine types**

**2 dB/A for the precision of the method.**

#### **Checks during and after the race**

**118 dB/A 117 + 1 dB/A for degradation of the silencer.**

For this test, the intakes of the air- filter box of the machine must not be obstructed and material (sponges, cloths, foams, etc.) must not be placed inside the air filter box, with the exception of the air filter element.

Any type of valve in the exhaust system is forbidden.

During the whole event (including before entering the Park Fermé at the end of

each day), the Technical Steward, under the direction of the Jury President or a Jury Member, can check any motorcycle. The time spent for this test will be granted to the rider.

If, during the test, the machine exceeds the maximum level allowed by 2 dB/A, the rider will be penalised with 60 seconds the first time and excluded from the day's competition the second time.

If a motorcycle does not pass the noise control test, the rider must immediately solve the problem before the next noise control test.

For repairs, control, etc. the followings are to be applied:

A rider wishing to repair or replace the silencer of his machine can do so at the end of the first day, after the last time check and before entering the Parc Fermé. The work must be carried out under the supervision of an official. The rider will be allowed an extra time of 30 minutes for this work. The same applies to riders who for any reason have been told by the Clerk of the Course to have their machines tested.

The rider may request as many noise controls as he wishes during the 30-minute- allowance.

After 30 minutes have elapsed, the rider will be required to present his machine for testing to the noise control test official.

After the 30 minutes, if the noise level is above the required standard, he will not be allowed to start the next day.

If the silencer is changed during the day, the rider must present it to be marked with a different paint or sticker at the next time check.

At the end of the day, a noise control test will be carried out during the 30-minute- allowance. If the test is passed, the silencer will be marked with the official paint. If not, the rider will be excluded.

#### **ART. 12 NUMBER PLATE (Motorcycles-Quad-SBS):**

All vehicles must be provided with one front number plate (or equivalent space), as well as two number plates for motorcycles and one double sided rear number plate set on the safety bar behind the saddle of the quad and in the rear for SBS. The size of the number plates must be: (Motorcycles-Quads 20x20cm x3 times) (SBS 30x30cm x4 times)

#### **ART.13 (Motorcycles-Quad-SBS):**

Power of all electrical equipments must be generated by the engine of the machine.

#### **ART. 14 CLOTHING (Motorcycles-Quad):**

In accordance with off-road rules and standards.

It is always compulsory to wear back and arm protections.

IT IS COMPULSORY TO RACE WITH SUCH PROTECTIONS COVERED BY A SHIRT OR A JACKET.

## **ART. 15 COMPULSORY DEVICES (Motorcycles-Quad):**

Beside the standard rear lights, it is compulsory to fit an additional red led light (minimum 5 leds) which must be always switched on during the special stages.

## **ART. 16 SBS Technical Regulations**

### **Admitted classes**

**SBS/UTV: Overall and two classes** (Super Buggy an Extreme Buggy)

- **Super Buggy: SBS – up to 1.050 cc and/or FIA T3 buggies** (2x4, 4x4, manual or automatic/ CVT gearshift as list compiled by the person/promoter in charge)
- **Extreme Buggy: SBS – up to 1.000 cc with turbocharger** (the cylinder capacity multiplying coefficient is modified to 1.5) **or up to 1400 cc without turbocharger** (2x4, 4x4, manual or automatic/ CVT gearshift as list compiled by the person/promoter in charge)

### **Dimensions**

The minimum weight is set at 650 kg.

The maximum overall length is 3550 mm.

The maximum width of the bodywork is 2100 mm without rear view mirrors.

### **Engine and transmission**

- **Engine Super Buggy:** The location of the engine must be fixed in the original position. The maximum cylinder capacity is set at 1050 cc; only original/stock engines in terms of main specifications are authorised.

- **Engine Extreme Buggy:** The location of the engine is free outside of the cockpit. The maximum cylinder capacity is set at 1000 cc with turbocharger (x1.5) or up to 1400 cc without turbocharger; only original/stock engines in terms of main specifications are authorised.

A differential coming from a commercial catalogue of competition parts may be used.

All the parts must be available, as spare parts, through a commercial network.

Only CVT type (*continuously variable transmission*) or manual transmissions are authorised.

### **CVT Type:**

The belt is free provided that it is available as a spare part (reinforced or not) through a commercial network.

### **Manual:**

It must come from the same vehicle/motorcycle as the engine and must be coupled to the engine in the same manner as in the production vehicle / motorcycle.

The gearbox casing must be standard apart from the machining of apertures for oil supply only.

The number of ratios can be reduced to enable the fitting of wider gears.

The gear change mechanism must be manual, linked to a gear change lever directly by rods or cables only.

The rear differential mechanism is free, but must be available for sale on the commercial market.

Transmission shafts are free but must be made of steel.

An additional lubrication and oil cooling device is allowed (circulation pump, radiator, and air intakes).

For production components, the original lubrication principle must be retained.

The only modification authorised on the gearbox / differential housing is the one intended for adapting the additional lubrication system.

All vehicles must be fitted with a gearbox including a reverse gear which must be in working order when the car starts the event, and be able to be operated by the driver when he is normally seated.

### **Suspension**

The suspension is free but it is forbidden to use active suspension (any system which allows control of flexibility, damping, height and/or attitude of the suspension when the car is in motion).

Only one shock absorber per wheel is authorised.

The adjustment of the springs and/or shock absorbers from the cockpit is forbidden.

It must only be possible when the vehicle is not in motion and only with the use of tools.

The adjustment device must be situated on the shock absorber or its gas reserve.

Any connections between dampers are forbidden. The only connections permitted are the damper fixing points passing through the frame; these must have no other function.

Only one anti-roll bar per axle is permitted.

The adjustment of the anti-roll bars from the cockpit is forbidden.

The anti-roll bar systems must be exclusively mechanical, with no activation or deactivation possible.

Any connections between front and rear anti-roll bars are forbidden.

### **Wheels and tyres**

- **Super Buggy:** The diameter of the rim is set at a maximum of **14** inches, with a maximum tyre width of 400 mm.

- **Extreme Buggy:** The diameter of the rim is set at a maximum of **15** inches, with a maximum tyre width of 400 mm.

All kind of street and off-road tyres are allowed but must be available for sale on the commercial market.

The diameter must be measured on the new tyre specified by the manufacturer. Central nut wheel fixing is forbidden.

The vehicle must be fitted with at least one spare wheel till a maximum of 3.

### **Braking system**

The braking system is free, provided that:

- it is activated and controlled only by the driver;
- it includes at least two independent circuits operated by the same pedal (between the brake pedal and the callipers, the two circuits must be separately identifiable, without any interconnection other than the mechanical braking force balancing device);
- the pressure is identical on the wheels of the same axle, with the exception of the pressure generated by the handbrake.

The callipers must come from a series vehicle or from a catalogue of competition parts with a maximum of 4 pistons.

The discs must come from a series vehicle or from a catalogue of competition parts.

The vehicle may be fitted with a handbrake system acting on the brakes of one and the same axle and mechanically independent of the main system (hydraulic or mechanical).

### **Maximum speed**

The maximum speed of the vehicle will be set by GPS at 140 kmph.

### **Exhaust system and silencer**

The replacement of the original silencer is allowed, but the vehicles that compete in an open-road event shall always be equipped with an exhaust silencer complying with the traffic regulations of the country(ies) through which the event is run.

The exhaust system must not pass through the cockpit.

The exhaust outlet must be horizontal or directed upwards.

The exit of the exhaust pipe must be situated within the perimeter of the vehicle.

The exhaust system must not be provisional. Exhaust gas may only exit at the end of the system.

Parts of the chassis must not be used to evacuate exhaust gases.

All vehicles must pass the noise control test, carried out according to the Rules of FIM/FIM Europe (2 METRE MAX METHOD), during the preliminary examination and marked by the organiser.

### **Safety Equipment**

#### **Clothing and Helmets**

It is compulsory to wear fireproof protective clothing in compliance with FIA standard 8856-2000.



This standard specifies test methods, performance requirements and design parameters for clothing for protection against heat and flame intended for drivers in the competitions. This standard specifies test methods, performance requirements and design parameters for clothing for protection against heat and flame intended for drivers in the competitions. This standard concerns outer garments, undergarments, socks, shoes, balaclava hoods and gloves and helmets.

It is compulsory to wear a race helmets in compliance with FIA standard 8860/8858 and Snell standard expected with HANS® SYSTEM FIA STANDARD 8858-2002 or FRONTAL HEAD RESTRAINT (FHR) SYSTEM FIA Standard 8858-2010 (full face or jet with motocross goggle compulsory).

### **Seats**

In all vehicles the original seat attachments must be changed, these parts must be made by an approved manufacturer.

1) Supports must be attached to the shell/chassis via at least 4 mounting points per seat using bolts with a minimum diameter of 8 mm and counter plates. The minimum area of contact between support, shell/chassis and counter plate will be 40 cm<sup>2</sup> for each mounting point.

2) The seat must be attached to the supports via 4 mounting points, 2 at the front and 2 at the rear of the seat, using bolts with a minimum diameter of 8 mm and reinforcements integrated into the seat. Each mounting point must be capable of withstanding a force of 15000 N applied in any direction.

3) The minimum thickness of the supports and counter plates will be 3 mm for steel and 5 mm for light alloy materials. The minimum longitudinal dimension of each support will be 6 cm.

All the occupants' seats must be homologated in compliance with the FIA (8855/1999 or 8862/2009 standards), and not modified.

For seats in compliance with 8855/1999 FIA standard, the limit for use is 5 years from the date of manufacture indicated on the mandatory label.

An extension of 2 further years may be authorised by the manufacturer and must be indicated by an additional label.

For seats in compliance with 8862/2009 FIA standard, the limit for use is 10 years from the year of manufacture.

The dimension between the floor of the vehicle and the seat can not be under 100 mm.

### **Safety belts**

Wearing of a 4, 5 or 6-point harness is compulsory.

Anchorage points on the shell or the chassis or the cabin or the safety cage: 2 for the lap strap, 2 for the shoulder straps, 1 or 2 for the pelvic strap(s).

These belts must comply with FIA standard n°8853/98.

It is prohibited for the seat belts to be anchored to the seats or their supports.

One belt- cutters for **each** driver must be carried on board at all times. They must be easily accessible for the driver and co-driver when seated with their harnesses fastened.

A safety harness must be used in its homologation configuration without any modifications or removal of parts, and in conformity with the manufacturer's instructions.

The belts must be replaced after every severe collision, and whenever the webbing is cut, frayed or weakened due to the actions of chemicals or sunlight.

**Compulsory Installation: see FIA Appendix J – Art.283 ARTICLE 6.2**

### **Extinguishing systems - extinguishers**

All vehicles must be equipped with homologated extinguishing: extinguishing system and/or manual extinguisher. The use of the following products is prohibited: BCF, NAF

#### **Extinguishing systems mounted (allowed)**

All extinguishers containers must be adequately protected and must be situated within the cockpit.

The container may also be situated in the luggage compartment on condition that it is at least 300 mm from the outer edges of the bodywork in all horizontal directions.

It must be secured by a minimum of 2 screw-locked metallic straps and the securing system must be able to withstand a deceleration of 25 g.

All extinguishing equipment must withstand fire.

Plastic pipes are prohibited and metal pipes are obligatory.

The driver and co-driver must be able to trigger the extinguishing system manually when seated normally with safety belts fastened and steering wheel in place.

The means of triggering must be marked with a letter 'E' in red inside a white circle of at least 10 cm diameter with a red edge.

Two means of triggering from the outside must be situated near to the circuit-breaker switches, and not combined with them.

The system must work in all positions.

Extinguisher nozzles must be suitable for the extinguishant and be installed in such a way that they are not directly pointed at the occupants' heads.

### **Manual extinguishers (compulsory)**

All vehicles must be fitted with one or two fire extinguisher(s). The minimum total capacity of which is specified as follows:

AFFF: 2.4 litres

FX G-TEC: 2.0 kg

Viro3: 2.0 kg

Zero 360: 2.0 kg

Powder: 2.0 kg

All extinguishers must be pressurised according to the contents:

AFFF : in accordance with the manufacturer's instructions or 12 bar

FX G-TEC and Viro3 : in accordance with the manufacturer's instructions

Zero 360: in accordance with the manufacturer's instructions

Powder: 8 bar minimum, 13.5 bar maximum

Furthermore, in the case of AFFF, each extinguisher must be equipped with a means of checking the pressure of the contents.

The following information must be visible on each extinguisher:

- capacity

- type of extinguishant

- weight or volume of the extinguishant

- date the extinguisher must be checked, which must be no more than two years after either the date of filling or the date of the last check, or corresponding expiry date.

All extinguishers must be adequately protected. Their mountings must be able to withstand a deceleration of 25 g. Furthermore, only quick-release metal fastenings, with metal straps, will be accepted.

At least one of the extinguishers must be easily accessible for the driver and the co-driver(s), seated normally with safety belts fastened and steering wheel in place.

### **Safety cage (Rollcage)**

Multi-tubular structure installed in the cockpit and fitted close to the bodyshell, the function of which is to reduce the deformation of the bodyshell (chassis) in case of an impact.

The fitting of a safety cage is compulsory.

It may be either:

Fabricated in compliance with the requirements of the FIA Appendix J – Art.283 ARTICLE 8 and following.

- a)** Homologated or Certified by an ASN according to the homologation regulations for safety cages. (An authentic copy of the homologation document or certificate, approved by the ASN and signed by qualified technicians representing the manufacturer, must be presented to the competition's scrutineers. Any new cage which is homologated by an ASN and is on sale, as from 01.01.2003, must be identified by means of an identification plate affixed to it by the manufacturer; this identification plate must be neither copied nor moved (i.e. embedded, engraved or self-destroying sticker). The identification plate must bear the name of the manufacturer, the homologation or certification number of the ASN homologation form or certificate and the individual series number of the manufacturer. A certificate bearing the same numbers must be carried on board and be presented to the competition's scrutineers.)
- b)** Original rollcage (OEM) or rebuilt as the original but reinforced following the main requirements of the FIA Appendix J – Art.283 ARTICLE 8 and following.

Tubes must not carry fluids or any other item.

The safety cage must not unduly impede the entry or exit of the driver and co-driver.

A roof (made from sheet metal or aluminium or composite fiber with a minimum thickness of 2 mm) soldered or bolted in the top outside of the safety cage is compulsory.

A panel (made from sheet metal with a minimum thickness of 2 mm or aluminium with a minimum thickness of 3 mm or plastic or composite fiber with a minimum thickness of 3 mm) is allowed (but not compulsory) to be fixed and cover the lower lateral gap between the bars and the floor outside of the safety cage.

The minimum distance between the occupants' helmets and the tubes of the safety cage must not be less than 50 mm.

### **Rear view**

The rear view must be efficiently obtained by means of two outside mirrors (one on each side of vehicle).

### **Towing attachment**

All vehicles must be fitted with a front and rear towing attachment of strength and size adequate for towing the vehicle on the itinerary of the event.

Minimum inside diameter: 50 mm.

It must be painted in a contrasting colour (yellow, red or orange) for easy identification and be available for immediate use when required.

It must not project beyond the surface of the bumper bodywork.

### **Windscreen, apertures**

A windscreen of laminated glass or made from polycarbonate with a minimum thickness of 5 mm or a half windshield made from polycarbonate with a minimum thickness of 4 mm can be fitted. In alternative to a glass or polycarbonate windscreen is allowed to mount a net firmly attached to the safety cage as following characteristics.

Minimum width of the nylon thread: 3 mm

Minimum size of the meshes: 25 x 25 mm.

Maximum size of the meshes: 60 x 60 mm.

All vehicles must be equipped with protection nets affixed to the lateral apertures using a quick release system situated on the lower part.

The use of "clip" fixings is recommended.

The fixings of the net on the upper part must not be removable without the use of tools.

These nets must have the following characteristics:

Minimum width of the strips: 19 mm or minimum width of the nylon thread : 3 mm

Minimum size of the meshes: 25 x 25 mm.

Maximum size of the meshes: 60 x 60 mm.

The fitting of an additional windscreen washer tank or of one with a greater capacity is authorised. This tank must be strictly reserved for the cleaning of the windscreen.

### **General circuit breaker**

The general circuit breaker must cut all electrical circuits, battery, alternator or dynamo, lights, hooters, ignition, electrical controls, etc.) and must also stop the engine.

It must be a spark-proof model, and will be accessible from inside the car by the driver **and the co-driver** seated and secured by **their** safety belts, and from outside the car.

All vehicles must be equipped with two external switches, one on either side of the bottom of the windscreen pillars.

They will be marked by a red spark in a white-edged blue triangle with a base of at least 12 cm.

In addition, an engine shut-down switch must be fitted in the cab, with its on-off positions clearly marked.

It must be operable by the driver **and the co-driver** when normally seated and secured by **their** safety belts. The switch must also isolate any electric fuel pumps.

### **Fuel tanks**

It is allowed to mount a safety fuel tank different from the original but it must come from a manufacturer approved and observed by the FIA Appendix J – Art.283 ARTICLE 14 and following.

### **Lighting equipment**

The lighting equipment must comply on all points with the International Convention on Road Traffic.

Each vehicle must be fitted with at least:

- 2 headlights (combined passing lights/headlights)
- 2 front lamps
- 2 rear lamps and number plate lighting
- 2 stop lights
- distress lights.

Each vehicle must also be equipped with two additional red rear fog lamps, twinned or placed side by side with two additional 'stop' lights.

They will be situated at a minimum height of 1.25 m from the ground, visible from the rear and attached to the outside of the vehicle. They must be fixed to both rear sides of the vehicle.

These lights must be constantly switched on during the running of the selective section upon the directions of the Clerk of the Course.

All the lighting equipment must be maintained in perfect working order throughout the entire duration of the event.

### **Audible warning device**

Each vehicle must be equipped with an audible warning device working throughout the entire duration of the event.

### **Mudflaps (allowed)**

Transverse mud flaps will be accepted under the following conditions:

- they must be made from flexible material.
- they must cover at least the width of each wheel.
- there must be a gap of at least 20 cm between the right and left mud flaps in front of the rear wheels.
- the bottom of these mud flaps must be no more than 10 cm from the ground when the car is stopped, with nobody on board.

These mud flaps are set to the rear of the rearmost wheels and to the rear of the driven wheels; they must fulfil the preceding conditions, must be made from rubberised canvas or plastic (minimum thickness 5 mm).

## **Technical passport**

### **Identification**

Make:

Model:

Chassis n°:

Registration n°:

Country of Registration:

Cubic Capacity:

Class:

Stroke:

### **Identification of Owner**

Name:

Address:

Contact: