

## CHAPTER TEN – Motorcycles Technical (Road)

- 10.1 A competitor entering a motorcycle for an event must sign a machine compliance disclaimer form even if the machine examination has taken place. For all Road Race sidecars, machine examination is compulsory, all Road Race sidecar competitors hold specialised log books for machine examination purposes. Random checking of all other machines may take place before, during or after an event by a competent motorcycle examiner. Clubs who desire to check all machines at any event may do so with a machine examiner. Competitors may be penalised or disqualified for entering a machine that does not comply with minimum MNZ requirements. The Steward of the meeting may also exclude any machine or equipment considered unsafe for the event.
- 10.1a The machine examiner may ask for the removal of the main fairing on road racing sidecars, for inspection purposes.
- 10.1b At all times the onus is on the competitor to ensure that their equipment is being operated within the specifications and limits (if any) imposed by the equipment manufacturer or supplier.
- 10.1c Failure to present machine for technical inspection when requested by the meeting steward will result in automatic exclusion from the meeting results.
- 10.2 **Race Numbers:**  
Race Numbers will start from one, no prefix numbers are permitted. Letters are not permitted for NZ competitors.  
FIM Licence holders (International Competitor) may use a letter, that letter will be allocated by MNZ upon receipt of their start permission and notify to the rider the host Clubs & Commissioners.  
Riders may apply to the MNZ office to hold an allocated number for their class and once allocated this number must be used.  
For championship classes, numbers 1-10 will be reserved for competitors finishing in that position in that class in the previous year's championship. These allocations will be made by MNZ's office each year.  
For all events where multiple non MNZ allocated race numbers are received, the race secretary may request race number changes based on order of receipt of prepaid entries.
- Presentation of numbers:**  
Numbers must be presented on rectangular or oval number boards that are as large as can be fitted to a machine with minimum dimensions of 225mm width and minimum height of 170mm.  
Number placement:  
FRONT – may be placed to the left or right of the longitudinal centreline of the motorcycle.  
SIDE – on each side of the machine.  
All numbers must be clearly visible when the rider (and passenger for sidecars) is/are seated in their usual riding position.  
Numbers and backgrounds and/or boards must be in a non-gloss finish and will

be in the colours specified for the engine capacity of the machine or the class of the rider as below:

Numbers and colours not meeting specification at machine examination will be required to rectify.

Number digits or letters must:

- Be solid bold font. There must be a visible distinction between 1 and 7.
- Be legible from 20 metre ride by. Pin-striping, outlining or shadowing is not permitted. Numbers such as 4, 6, 8, 9 & 0 are to have no infill.

Numbers or Letters:

Front

- Be of a minimum height of 140mm.
- Width of number stroke: 25mm.
- Be of a minimum width of 75mm with a minimum space of 15mm between each. Digits must not be over lapping.
- Be whole and not have any encroaching stickers or markings.

Side

- Be of a minimum height of 120mm.
- Width of number stroke: 25mm.
- Be of a minimum width of 75mm with a minimum space of 15mm between each. Digits must not be over lapping.
- Be whole and not have any encroaching stickers or markings.

Kayo and Mini Supersport:

Front and Side be a minimum height of 100mm.

- Width of number stroke: 20mm.
- Be of a minimum width of 50mm with a minimum space of 15mm between each. Digits must not be over lapping.
- Be whole and not have any encroaching stickers or markings.

**Colours:**

125cc & 150 S/S - White background, Black figures

250 Production - Orange background, Black figures

Supersport 300 – Blue background, White figures

Superlite - Black background, White figures

SuperSport 600 - Yellow background, Black figures

Superbike - White background, Black figures

Sidecars – Formula One - White background, Black figures

Sidecars – Formula Two - Yellow background, Black figures

Pro Twin - Orange background, Black figures

Superstock 1000 - Red background, Yellow figures

GIXXER 150 - Blue background, Yellow figures

Kayo & Mini Supersport - White background, Black figures

Supermoto – White background, Black figures

### **Miniature Road Racing: Buckets**

F4 – Black background, White figures

F5 – White background, Black figures

Sidecars- Black background, White figures

### **Classic and Post Classic:**

#### **Classic**

Up to 250cc - Dark green background, White figures

Up to 350cc - Blue background, White figures

Up to 500cc - Yellow background, Black figures

Open- Red background, White figures

#### **BEARS Racing:**

As BEARS machines cross enter classes, colours listed are for the primary class:

BEARS Formula 1 - White background, Black figures

BEARS Formula 2 -Yellow background, Black figures

BEARS Formula 3 - Blue background, White figures

BEARS Superstock -Red background, Yellow figures

Lightweight Ltd - White background, Black figures

Lightweight - Green background, White figures

Moto-Euro - Blue background, Yellow figures

Best of British - Green background, White figures

BEARS Novice - Use class colours with riders wearing orange vest for 10 events

BEARS Classic:

0 - 500cc - Yellow background, Black figures

501cc – Open - Red background, White figures

Milwaukee Iron - Blue background, White figures

#### **Post Classic – Period 72 (P72)**

Ultra lightweight - White background, Black figures

Lightweight - Dark green background, White figures

Junior (up to 350cc)- Blue background, White figures

Junior (up to 600cc)- Yellow background, Black figures

Senior - Red background, White figures

#### **Post Classic –Period 82 (P82)**

Ultra Lightweight - White background, Black figures

Lightweight - Dark green background, White figures

Junior (up to 350cc) - Blue background, White figures

Junior (up to 600cc)- Yellow background, Black figures

Senior - Red background, White figures

#### **Post Classic—Period 89 (P89)**

Formula One - White background, Black figures

Formula Two - Yellow background, Black figures

Formula Three - Black background, White figures

#### **Post Classic – Period 95 (P95)**

Formula One - Yellow background, Black figures

Superbike - Blue background, White figures

Formula Two - Dark Green background, White figures

## Formula Three -Orange background, Black figures

Legibility of numbers will be decided by the Technical Steward or Steward, if they are not satisfied that numbers will be legible from a 20m ride by, the rider will be directed to re-do the number in a legible, legal form, and will not compete until his/her numbers comply.

- 10.3 All numbers are to be on non-gloss backgrounds and must not be less than 25mm wide. Numbers are to be as high as practicable.
- 10.3a Racing numbers will be in the colours specified for the engine capacity of the machine or the class of the rider and must be carried in all types of competition.
- 10.3.b Number plates must not have any stickers or markings liable to cause confusion with the number.
- 10.4 **The following items must be removed from production based motorcycles for closed circuit and street circuit racing**
- a) Passenger footrests/grab rails
  - b) Side stand
  - c) Safety bars, centre stands (all fixed or welded brackets must remain in place)
  - d) Where breather or over flow pipes are fitted they must discharge via existing outlet. The original closed system must be retained; no direct atmospheric emission is permitted.
  - e) Headlight, indicators and mirrors must be removed.
  - f) Horn
  - g) License plate bracket and license plate.
  - h) Where the side stand switch is external & exposed to the track surface it **MUST** be removed.
- 10.4.a **The following may be removed for closed circuit and street circuit racing (production based classes appendices C, E, F, H, I, J, K and N)**
- a) Instruments, instrument brackets and their associated cables
  - b) Toolbox.
  - c) Speedometer.
  - d) Radiator fan and wiring.
  - e) Rear guard/hugger.
  - f) Passenger footpeg brackets may be unbolted only – NO cutting allowed. In cases where the peg hanger is used as a muffler bracket, it may be replaced with an alternative of the same material.
  - g) The left hand switch block may be removed where it serves no purpose on the machine as a race bike.
  - h) Upper chain guard may be removed.
  - i) All unused electrical switches may be removed.
  - j) Tail lights
  - k) Brackets and non-structural/critical fasteners that serve no purpose on the machine as a race bike such as:
    - Brake light switch bracket

- Cable routing brackets
- Sprocket/chain rings (rings on the rear sprocket to avoid chain jams in the event of the chain falling off)
- Indicator brackets
- Light brackets
- Horn bracket
- Fasteners from original body work not required for the fitting of race bodywork
- Brake line holder/support brackets
- Plastic covers or shrouds not considered as bodywork

10.4.b **The following may be replaced with items not manufactured by the original maker of the motorcycle. For closed circuit and street circuit racing (production based classes appendices C, E, F, H, I, J, K and N)**

- a) Oils and fluids
- b) Oil and fuel filters
- c) Batteries
- d) Oil filler plugs, drain plugs and washers
- e) Brake calliper bolts (must be of same or similar material as OEM)
- f) Fuel filler caps
- g) Wheel bearings and seals (must be the exact same type of bearing and seal. (Same bearing numbers and codes and seal dimensions)
- h) General fasteners maybe changed but must be of the same material as originally fitted.
- i) **Rear axle mounted OEM chain adjuster blocks or complete chain adjusters.**

#### **Technical Motorcycle Requirements**

- 10.5 All machines competing on tracks must be fitted with securely mounted footrests which when in the riding position do not touch the ground with the machine at an angle of less than 45 degrees from the vertical. Highway footrests and pillion footrests are to be removed from any vehicle competing at any closed circuit meeting, including meetings held on closed public roads.
- 10.5.a Exhaust systems must be fitted and securely mounted. The exhaust pipe outlet must not direct exhaust gases directly to the ground or in any other direction, which will lead to the creation of dust. This will be cause for exclusion.
- 10.5.b Exhaust mufflers are mandatory in all forms of competition. The Steward of the Meeting has the power to reject any machine considered to be unduly noisy.
- 10.5.c For sealed surface competition, all machines which have the exhaust silencer baffles secured by a screw or bolt to the body of the silencer must also have the baffles securely wired.
- 10.5.d Control or stability dampers may be fitted and the attachment method must be of good commercial standard.

- i. Steering dampers may be fitted but the attachment method must be of good commercial standard. Metal steering stops must be added to the frame if the existing stops are inadequate. The damper must not in any way act as a steering lock limiting device. Minimum steering lock must be 15 degrees either side of the centre line of the motorcycle.
  - ii. Mass dampers must not restrict or limit the full travel of the suspension as designed by the motorcycle manufacturer.
- 10.5.e Fuel caps must not allow leakage and fuel lines must be secure.
- 10.5.f Ethylene Glycol is banned from use in road race radiators.
- 10.5.g All vehicles must be fitted with an efficient brake on both front and rear wheels. Any vehicle using a **rear wheel foot operated** hydraulic type brake master cylinder must have a brake pedal return stop fitted so that the brake pedal linkage does not depend on the cylinder circlip to act as a stop. Thumb or hand lever operated rear braking systems are allowed **to be fitted. If the rear brake system operated by the foot is retained with the fitting of a thumb or hand operated rear brake, the rear master cylinder maybe changed to allow the safe and correct fitting of the junction valve.**
- 10.5.h All motorcycles must have the top run of the primary chain completely covered by a guard of sufficient dimensions to keep riders clothing from coming in contact with the transmission.
- 10.5.i All machines must have smooth inner surfaces on clutch and brake levers, the outer end of such levers to be securely fitted with a rounded knob or ball of not less than 16mm.
- 10.5.j Handlebars must not be of greater width than 92cm and must have the ends securely capped or plugged.
- 10.5.k For sealed surface competition, all crank cases, gear box, oil drain and breather tubes must vent only into a catch tank, i.e. a suitable heat resistant container to catch oil and oil mists. Air cleaner drain lines will enter a catch bottle and be sealed. Drain plugs, filler caps and oil filter retaining bolts will be wired. Spin-on cartridge type oil filters must be secured by a hose clip or lock wire.
- 10.5.l Every motorcycle which takes part in a competition on an open public road shall comply with all legal requirements. Warrants of fitness are not required for speed events on an officially closed road.
- 10.6 **For closed circuit/street circuit racing:**  
Front brake calliper mounting bolts must be wired or pinned in the tightened position. Bolts **maybe** changed in production-based classes (appendices C, E, F, H, I, J, K and N) but **may** be of **other** material (**but no less technically capable**) as originally fitted to the homologated machine e.g. Titanium.

- 10.6.a A front brake lever protector may be fitted.
- 10.6.b A rigid chain guard or shark fin must be fitted in such a way to prevent trapping between the lower chain run and the final drive sprocket at the rear wheel. The leading edge of this guard must be a minimum thickness of 3mm and have a rounded edge to avoid this causing any injury in the event of a fall. Machines where the swing arm shape or design eliminates the need for one is exempted. Post Classic and Classic race machines are also exempted from this rule.
- 10.6.c All exposed lateral engine cases containing water or oil must be guarded from contact with the road surface in the event of a crash. The guard may be a second cover made from suitable materials such as Carbon/Kevlar or suitable plastics with heavy duty end cases or crash bars made from aluminium, steel or nylon. A frame mounted crash knob or a similar effective protector can be fitted as an alternative to avoid the case cover contacting the track in the event of a crash. All of these devices must be designed to be resistant against sudden shocks, abrasions and crash damage. Classic and Post Classic machines are exempt from this rule
- 10.6.d All machines homologated with lower fairing must be fitted with an integral lower fairing dam (Belly Pan) or separate catch tray which must be constructed and fitted to trap and hold engine oil and coolant with a capacity of not less than, four strokes =3.5 litres or two strokes =2.5 litres with no less than 2x25mm holes (1 front 1 rear) which will be fitted with a rubber bung/stopper or similar plug that may be removed in wet conditions. Motorcycles exempt from this rule are Classic, Post Classic, Miniature Road Race bikes (F4/5), training class bikes or any motorcycle with the oil capacity less than 1.2 litres.  
For the avoidance of doubt, a lower fairing is defined as a fairing that extends below the bottom of the fuel tank/tank cover or the top of the engine (whichever is the lower).

## 10.7 Kart Circuits

**When racing or practicing at Kart Circuits, motorcycles and sidecars of all classes must be fitted with nylon or similar non-metallic track protection armour sufficient to protect the track from any metallic part that could touch the ground in the event of a crash.**

**The following items must be adequately protected:**

- Wheel axle ends, both front and rear;
- Handlebar ends;
- Footpegs and footpeg brackets that become exposed when the footpeg folds up;
- Gearchange and footbrake levers;
- Any protruding part that is likely to touch the ground in a crash;
- The top of front fork stanchions if these protrude above the top triple clamp.
- Nylon or similar protection must not be retained by cable ties. Mounting must be rigid.
- If the protection of a motorcycle or sidecar is deemed inadequate at

any time, or if any of the parts listed above are not covered, the offending vehicle may not enter the track, or must be removed from the track as soon as possible until the lack of protection is remedied.

- Kick-start levers, if fitted, must be retained in the folded position by a loop, which may be a cable tie.
- The final judge on adequacy of protection is the Steward of the event and their decision will be final.

### **Street Circuits – All Classes**

- 10.7a All machines to be fitted with an operational tether kill switch. The tether kill switch must not be fitted in such a way that it can be overridden and must be securely attached to the rider. This switch is to be additional to the regular handlebar mounted kill switch.

A number of machines, mainly historic and classic classes, are technically difficult to modify to accept any type of kill-switch, tether or otherwise. These machines will be exempt from this rule on both the following conditions being met:

- a. The machine must have a self-contained magneto ignition, and
- b. The engine must stop when the throttle is closed. It must not idle.

### **Noise Emission Road Racing:**

- 10.8 Noise: Some venues may have specific noise level limits. These if included in supplementary regulations may overrule rule 10.8a

- 10.8a At all Road Racing Events on Permitted Circuits (Teretonga, Levels, Ruapuna, Manfeild, Taupo and Hampton Downs as of this point) the noise limit is 95dBA.

All machines are to be effectively silenced so as not to exceed 95dBA “ride by” measured by the official meter mounted 30 meters from the track centre line, at the position on the circuit nominated by the circuit owners/managers. Machines registering readings consistently in excess of this limit will be brought to the attention of the officials for action to be taken as follows:

Exceeding 95dBA but not exceeding 98dBA: On the first offence during the meeting, the rider will be warned that this has occurred and instructed to rectify the situation. For the second and subsequent infringements, the machine/rider will be Black Flagged from the practice or race without further warning. If circumstances do not allow the machine to be Black Flagged, the competitor will be excluded from the results of that practice or race.

Exceeding 98dBA: the machine will be black flagged from the race or practice without warning.

If circumstances don't allow the machine to be black flagged, the competitor may be excluded from the results of that practice or race.

At all Street Circuits machines must operate as per the conditions (if any) listed in the local council's resource consent for the event. Should these

conditions require special procedures and/or testing at the event, then these must be listed in the Supplementary Regulations.

At all events held at Kart Circuits machines must not exceed the noise limit specified by the relevant Kart body when measured according to their rules.

Failure to perform within the specified noise limit will eliminate the machine from competing at the event.

Organisers of events held at Kart Circuits must clearly summarise the noise limit requirements in all event promotion and advertising, and give reference to further details where possible.

#### **Streamlining/aerodynamics:**

10.9 Complete liberty is allowed as regards streamlining in the case of motorcycles used in an attempt on a record.

10.9.a For other types of competition, streamlining can be permitted. The width of which at front does not exceed the width of the handlebar by more than 10cm. The front most point of the streamlining must not project in plan more than 10cm past the centre of the front axle. The front wheel, with the exception of the tyre and the part covered by the mudguard, must be clearly visible from each side. For reasons of historical accuracy, machines covered by chapter 15 are exempted from frontal rules provided this is mentioned in the supplementary regulations for the meeting. The same requirements apply equally to the rear of the streamlining, the rearmost point of which must not project in plan more than 30cm beyond the rearmost point of the tyre.

10.9.b Streamlining should be so designed and fixed as to allow complete liberty of movement to the driver, both when driving and when mounting and dismounting from the machine which should be easily controlled without displacing the streamlining or any part of it.  
The Windscreen edge must be rounded to a radius of not less than 3mm or employ rounded beading material of plastic or rubber.  
The edges of all other exposed parts of the streamlining must be rounded.

#### **Inspections:**

10.10 Where necessary, machines will be sealed for measurement purposes. Machines must not be taken from the pits after a race without the consent of the Steward. Failure to observe this rule may entail exclusion, suspension, or disqualification.

10.10.a The Steward(s) of a meeting may order any motorcycle which they have reason to believe may not be in accordance with the Rules and Supplementary Regulations to be impounded at the end of the meeting and motorcycle shall be retained as may be directed by the Steward(s) for such period as may be reasonably necessary for its examination by them.

- 10.10.b If the measure be to determine a protest, the party against whom the decision is made shall bear the cost and the motorcycle may if the engine is found oversize be retained until such costs are paid.
- 10.11 The Formulae to Calculate Cubic Capacity:  
Reciprocating piston motors: Diameter of cylinder bore in centimetres, squared, multiplied by 0.7854, multiplied by stroke in centimetres, multiplied by number of cylinders.  
  
Rotary combustion (Wankel Patent): Capacity of one working chamber in cubic centimetres, multiplied by number of rotors, multiplied by two.
- 10.12 **Fuel Testing:** at any event may only be ordered by the relevant MNZ commissioner, in consultation with the Officials Commissioner. No other party may request such action to be taken.
- 10.12.a Such testing is to be carried out by suitably trained MNZ officials using appropriate sampling methods.
- 10.12.b Should fuel irregularities be indicated/suspected, initial screening may be carried out using a Digatron DT-47FT analyser when available. Or, fuel samples may be taken for forwarding to a recognised laboratory (ESR or similar) for detailed analysis.
- 10.12.c **Sampling Procedure:**  
Containers for holding samples must be clean and constructed of robust, fuel non-reactive, impermeable material. They must be sealable and have provision for identification.  
Equipment used for extraction of fuel from machines must be clean and constructed of fuel non-reactive material.  
Each sample must be divided in two and placed in separate containers (2 samples of a maximum 1 litre each). The containers must immediately be sealed and identified by reference to the machine from which the sample was taken. This information must be entered on an MNZ "Fuel Sample Certificate" which must certify the date, place and time of taking the sample, the identity of the machine from which it was taken and the identity of its rider.  
Both samples must remain in the control of the testing officials and the rider must sign the MNZ "Fuel Sample Certificate" acknowledging that a sample was taken and must be given a copy of the certificate.  
Refusal to submit to the taking of samples or signing of the certificate will be treated as an admission of guilt.  
At the conclusion of the event the samples are to be delivered either in person or by a recognised Courier to the nominated laboratory, as soon as is practicable.  
Fuel sampling may be carried out at any time during a meeting.
- 10.12.d The results from the analysis must be attached to the laboratory's copy of the MNZ "Fuel Sample Certificate" and returned to MNZ as soon as practicable after the results have been obtained.

10.12.e The results of the analysis must as soon as practicable be notified to the club at who's meeting the testing was carried out, the rider and the MNZ Judiciary for appropriate penalty(s) to be imposed should irregularities be confirmed.

10.13 **Fuel:**

The following classes listed below shall be restricted to petrol having maximum characteristics not exceeding "unleaded **pump gas**" as defined in Appendix D. No additives may be added to the fuel.

1.	Supersport	Appendix F
2.	Superbike	Appendix C
3.	Pro Twin	Appendix E
4.	250 Production	Appendix H
5.	Mini Supersport & Road Race Training Class	Chapter 14.13
6.	Supersport 300	Appendix I
7.	GIXXER 150	Appendix K
8.	Superlite	Appendix B
9.	Supersport 150	Appendix J
10.	Super Motard	Chapter 20
11.	Super Twin	Appendix N

Methanol as defined in Appendix D may only be used in the following classes:

1. **Road Racing Classic as defined in Chapter 15.1**
2. **Classic Sidecars**

For any other machine, those wishing to use methanol, an application is required to be made to the Road Race Commissioner or Technical Steward for written approval.

10.13a The following classes shall have the choice of using "**Unleaded Pump Gas, Avgas or Unleaded FIM Petrol**" as defined in Appendix D.  
Sidecars as defined in chapter 18.

National Speed Records, Hill Climb – Road

Classic Road Racing as defined in chapter 15.

Post Classic (Period 72) Road Racing as defined in Rule 17.3

Post Classic (Period 82) Road Racing as defined in Rule 17.4

Post Classic (Period 89) Road Racing as defined in Rule 17.5

**Post Classic (Period 95) Road Racing as defined in Rule 17.6**

125GP / 250 Mono as defined in Appendix G, BEARS

**Methanol as defined in Appendix D maybe used in the following classes.**

**Classic Road Racing as defined in chapter 15**

**Classic Sidecars**

Any machines using methanol must display "Dangerous Goods" or other appropriate stickers that clearly indicate its use, on the machine in a prominent place e.g. number boards, side and or top of fuel tank.

- 10.13b All petrol (gasoline) shall be from a public petrol (pump) station, avgas, a mixture of petrol and avgas, or a mixture of petrol/avgas and lubricant in the case of 2-stroke engines. The petrol or avgas or a mixture of both fuels will be used for all classes of Road Racing as per Appendix A. For the avoidance of doubt this means the petrol (gasoline) must be available for sale on demand from a New Zealand public retail outlet. Allowable fuels are to be publically available pump petrol not exceeding an advertised RON of 100 or MON of 92, or AVGAS not exceeding a MON of 108 (Aviation Lean Rating, equivalent).
- Mixtures of petrol (gasoline) and lubricant (oil) for 2 - stroke machines. The lubricant must not change the composition of the petrol fraction when added to the petrol; must not contain any nitro-compounds, peroxides or any other engine power boosting additives; must in no way contribute to an improvement in overall performance.
- 10.13c Nitro methane and similar agents are strictly prohibited in all classes of racing.
- 10.13d Refuelling. Each machine must be stationary with the engine stopped. Refuelling will be deemed to have commenced when the fuel tank has been opened and completed when the tank is closed. Smoking is strictly prohibited in areas where refuelling is permitted.
- 10.13e Fuel Specifications refer to Appendix D.
- 10.13f National Speed Records. Refer to rules Chapter 13.9 and 13.9a