ATTACHMENT A – EXCEL RALLY CARS

1. PREAMBLE

(a) These regulations have been drawn up by Motorsport Australia in consultation with the National Excel Series Committee. The regulations apply to each *Competition* where Excel Rally Cars are eligible, including each state based Excel Rally Series. To be eligible for awards and points in an Excel Rally Series *Event*, each *Automobile* is required to comply with these regulations.

(b) Each *Automobile* in the Excel Rally Cars class must comply with PRC regulations except where a variation is explicitly authorised or required by these regulations. An *Automobile* complying with these regulations is eligible in any *Competition* for which the PRC group is also eligible.

(c) These regulations foresee DOHC and SOHC *Automobile*s competing directly against each other. No freedoms are provided with a view to achieving 'performance parity'.

2. ELIGIBILITY

(a) Each Hyundai Excel X3 model manufactured by Hyundai Motor Company between 1 July 1994 and 31 June 2000 and sold in Australia is eligible. This includes all GX, GL and GLX, Sprint, 3-, 4- and 5-door models. Both the 1495cc double overhead camshaft (DOHC) and single overhead camshaft (SOHC) engines with the following engine number prefixes; G4EK, (SOHC) and G4FK, G4EC (DOHC) are eligible.

(b) Each *Automobile* must remain in standard specification as detailed in FIA Homologation paper number A5554 and N5554 or the Hyundai Factory Excel Workshop Manual/s, except where modification from standard specification is permitted by these regulations. If there is a discrepancy between the FIA Homologation paper and the Workshop Manual, the FIA Homologation will be the definitive document.

3. GENERAL

Parts for any Australian specification Excel X3 model may be used on an Excel Rally Car as long as each part can be clearly identified as a standard Excel replacement part available from an Australian Hyundai dealer or is an aftermarket part that is identical in appearance and function to the standard part which it replaces.

4. ENGINE

(a) Cylinder bore size may be increased over the standard dimension by a maximum +0.6mm. The standard bore size is 75.5mm.

(b) A replacement piston must be standard in material and in each functional dimension. No post-manufacture machining of the piston is permitted.

(c) The camshaft profile (lobes and their position) must remain standard. The timing of camshafts relative to each other must remain standard.

(d) Undersized crankshaft bearings may be used. Crankshaft stroke must remain standard (83.5mm).

(e) The cylinder head mounting face may be machined. The valve seats are free. Other than these exceptions, no modifications, machining addition or removal of material from the cylinder head is permitted.

(f) Only normal engine reconditioning procedures are permitted within the mechanical specifications and compliance with FIA Homologation paper number 5554 and the workshop manual. These specifications must be deemed to include factory approved and recommended methods of assembly as well as specific component measurements and finish standard.

(g) Engine mounting bushes are free; however, the location and number of engine mounts is not.

(h) Lubrication System: With the exception that an engine oil cooler may be installed, the engine lubrication system must remain standard.

4.2 COOLING SYSTEM

(a) The radiator and its method of fixing are free provided that the original radiator fittings on the *Automobile* are utilised.

(b) The fitment of an additional electric fan is permitted. The operation of the fan may be by manual switch or thermostatic control.

(c) Each radiator hose is free.

(d) A screen may be fitted in front of the radiator.

5. FLYWHEEL AND CLUTCH

(a) The clutch assembly may be replaced by an alternative assembly of the standard type.

(b) The clutch and pressure plate assembly weights must comply with the following:

(i) Clutch Plate 1.06Kg Standard / 0.901Kg minimum.

(ii) Clutch Pressure Plate 3.70Kg Standard / 3.145Kg minimum.

(d) The flywheel weight must be not less than 6.3kg.

6. INDUCTION

(a) The air filter system is free upstream of the throttle body.

(b) No modifications are permitted to the throttle body or inlet manifold.

(c) Any type of forced induction is prohibited.

7. EXHAUST

The exhaust is free after the exit from the exhaust manifold, subject to specific local requirements. It may not project in any way beyond the coachwork (in plan). The exhaust system must not be provisional. Exhaust gases may only exit from the end of the system which must be within 10cm of the perimeter of the *Automobile* and aft of a vertical plane passing through the centre of the wheelbase. Parts of the chassis must not be used to evacuate exhaust gases. Adequate protection must be provided to prevent heated exhaust pipes from causing burns

8. FUEL SYSTEM AND FUEL

(a) Each fuel injector, electronic control unit and ignition computer must be an original and unmodified Hyundai Excel part for a model sold in Australia.

(b) The original fuel pump may be replaced by an external electric type.

(c) The fuel lines, fuel pump wiring and relay system may be replaced or relocated.

(d) An additional fuel pump and/or surge tank may be added.

(e) Fuel must be Commercial Pump Fuel as specified in Schedule G of the *Manual*.

(f) The fuel tank must be maintained in standard location. Protection for the fuel tank may be installed.

9. TRANSMISSION

(a) The original gear selector mechanism may be modified to reduce free play. Any modification to the selector mechanism may not alter the pattern of gear selection.

(b) A gearbox oil cooler may be installed.

(c) Gearbox ratios must remain standard.

(d) Either a 3.842 or 3.656 final drive ratio is permitted

(e) Limited slip or locked differentials are not permitted.

10. CHASSIS

(a) The safety cage structure must be constructed in compliance with Schedule J.

(b) Seam welding of the body shell is permitted. Strengthening of the shell may only be conducted in accordance with the PRC regulations.

11. WHEELS AND TYRES

(a) The wheel diameter must be 13". Wheels are otherwise free, provided that each complete wheel and tyre is housed within the original bodywork.

(b) Subject to compliance with Schedules E, tyres are free.

12. STEERING

(a) The steering mechanism must use either

(i) a standard Hyundai Excel power steering rack; or

(ii) a non-assisted steering Hyundai Excel rack.

(b) Power steering may be added or removed.

(c) The steering wheel is free save that it may not contain any wood.

13. BRAKES

(a) Brake friction material is free.

(b) The brake lines are free.

(c) The rear drum brakes must be standard, except that the backing plate may be modified for the purpose of allowing access for adjustment without disassembly.

(d) Brake lines may be rerouted, and damage protection may be added.

(e) The standard handbrake may be converted to 'fly off' for use in special stages.

(f) A functional parking brake mechanism must be fitted.

(g) The disc brake backing plate may be removed.

(h) Each disc brake rotor must be standard. Cross drilling and/or slotting is not permitted.

14. SUSPENSION

(a) Springs are free provided their type and location are unchanged. Where a "coil-over" design is fitted, it may be modified to enable the adjustment of ride height

(b) Dampers which are externally adjustable for bump and/or rebound may be fitted. External reservoir designs are not permitted. The number and location of dampers must remain standard.

(c) Each bump stop is free.

(d) Each bush used at a suspension pivot point may be replaced by another. Spherical bearings are not permitted, except in the top strut mount.

(e) The suspension may be modified so that camber and caster can be adjusted through the use of eccentric camber pins or washers and caster bush kits.

(f) The use of replacement adjustable strut tops is permitted, providing that each utilise the standard body shell mounting points exclusively. The removal of metal from the suspension tower is prohibited, except that the hole in each rear strut tower may be enlarged to a maximum of 60mm diameter. This hole must remain circular and concentric with the original opening.

(g) Anti-roll bars may be removed or changed provided original sway bar mountings to the chassis are used exclusively. The anti-roll bar link/s is free.

(h) A strut brace may be fitted between the front suspension towers provided it only links the strut towers. The rear suspension towers may be braced by either the safety cage or a strut brace.

(i) Suspension components may be strengthened and/or modified in accordance compliance with Motorsport Australia PRC regulations.

(j) The origin of each standard suspension part must remain clearly identifiable.

15. ELECTRICAL EQUIPMENT

(a) The spark plugs and high tension leads are free.

(b) A standard Hyundai ECU, applicable to the engine fitted to the *Automobile*, from any eligible model Excel, must be used.

(c) No replacement or piggyback ECUs, ECU reprogramming or modifications to the ECU wiring harnesses or sensors is/are permitted.

(d) The ECU ODB-II diagnostic port must remain fully serviceable so that ECU sensor readings and other information can be accessed electronically.

(e) An *Event* organiser may require each *Competitor* to take part in a ballot for ECUs prior to an *Event*. If any *Competitor* requests a Ballot, it must be conducted after the completion of scrutineering and prior to the Drivers Briefing. Where such a ballot takes place, it is a requirement that ECUs be exchanged in accordance with the results of the ballot.

16. BODY AND COACHWORK

(a) All coachwork must comply with the workshop manual specifications except that interior items such as carpet, underfelt, hood lining, rear seat, radio, speakers, console and rear parcel shelf may be removed as outlined in accordance with the PRC Regulations.

(b) Supplementary gauges may be fitted within the cabin.

(c) Pedal settings may be modified for position. The original mounting fixture points to the body structure must not be changed.

(d) An air vent/scoop may be fitted in the roof of the *Automobile* in accordance with the PRC regulations.

(e) Any rubber bush may be changed for another bush made of an elastomeric material as long as the new bush has dimensions the same as the original.

(f) A rear wing may be fitted that meets the following requirements:

(i) The wing must be made of fibre glass.

(ii) The wing aerofoil must be fixed and not be able to be adjusted with tools.

(iii) The wing must be the standard Hyundai low wing, Hyundai Part# 87211-22200 or 87211-22500 or Talon High wing part #HYU25 or a wing identical to it. The intention is to limit the wing options such that all *Automobile*s look similar.

(iv) A rear wing made of glass-reinforced plastic may be fitted provided that the wing aerofoil is fixed in position and cannot be adjusted and that the wing is:

(g) the standard Hyundai ‘low wing’ part number 07211-22200;

(h) the standard Hyundai ‘low wing’ part number 07211-22500;

(i) the Talon ‘High Wing’ part number HYU25; or

(j) a part identical in design, material, construction and installation as any one of the above three acceptable parts.

17. WEIGHT

(a) The minimum weight of the *Automobile* at any time during an *Event* is 960kg. This weight is the real weight of the *Automobile*, without driver and co-driver nor their equipment and all apparel.

(b) The minimum weight of the *Automobile* with driver, co-driver and their equipment, at any time during an *Event*, is 1,120kg (960kg as per 14.1 + 160kg). This weight is the real weight of the *Automobile*, driver, co-driver and all their equipment and apparel.

18. MISCELLANEOUS

Air conditioning may be added or removed.