

## Nomenclature and Definitions

Basic to understanding the sport is understanding the terminology which defines it. These descriptions define key words and phrases which are referred to in the Regulations that follow.

**Adequate Strength.** The component concerned is of sufficient strength to fulfil the function for which it was intended.

**Advertisement.** Any lettering, additional trademark or symbol appearing on a vehicle, including any border or background that is distinguishable from the underlying surface on which it appears.

**Aerodynamic Device.** Any device or part of a vehicle (excepting normal and conventional styled bodywork) that has a principal effect of creating aerodynamic downforce. Within this definition should be included forward facing gaps or openings in the bodywork, but will not include spoilers in the form of raised surfaces continuous with the body surface and not wider than the body surface. It is not permitted to mount an aerodynamic device on unsprung parts of the vehicle.

**Appeal.** A formal complaint, lodged within specified time limits, by an entrant or Competitor about a decision, act or omission by an official of a meeting (C.6.1.1). In the event of an appeal being made against a decision, the entrant or Competitor involved must have been either:

- (1) The party involved in the incident giving rise to the decision, or
- (2) The party who lodged the protest which resulted in the decision, or
- (3) The party against whom a penalty has been imposed.

**Approved Formulae.** A set of Regulations, approved by the MSA, providing the parameters for a vehicle to be used in a specific Competition or series of Competitions.

**Autocross.** A speed event on a closed circuit with a grass or unsealed surface.

**Automobile/Car/Vehicle.** Land vehicle running on at least four non aligned complete wheels, of which at least two are for steering and at least two for propulsion.

**Autotest.** A competition for Cars in which marking during the event is based solely on a competitor's performance in manoeuvring tests, and defined as:

- (a) *Autotest.* These tests may include spin or handbrake turns, stop astride lines, and some reversing, and may be at one or more sites. A passenger is not allowed. (see Section M);
- (b) *Production Car Autotest.* A competition for Production Cars capable of being taxed and MOT'd. These tests may include a limited number of spin or handbrake turns, stop astride lines, or reversing, and may be at one or more sites. A passenger must be carried in the front seat. (see Section M);
- (c) *AutoSOLO.* For Road Going Cars, with tests held on a sealed surface. These tests shall be all

forward and non-stop, without requiring any spin or handbrake turns, and may be at one or more sites. A passenger may be carried in the front seat (see Section M).

**Ballast.** Non functional material added to increase vehicle weight. Units of ballast are to be strong and unitary blocks, fixed by means of tools with the possibility of affixing seals and placed on the floor of the cockpit or the luggage compartment, visible and sealed by the Scrutineers (J.5.15.2). Kart ballast see U.17.29.1.

**Bambino Kart Event.** Pre-Race training for 6 and 7 year olds, which can only be held on circuits specifically licensed for Bambino. Drivers must hold a Kart Clubman licence, which they can obtain from their 6th birthday and may continue in Bambino until their 8th birthday. Full details and criteria contained within the Kart Race Yearbook.

**Battery cell.** An electrochemical energy storage device, of which the nominal voltage is the electromechanical couple nominal voltage, made of positive and negative electrodes, and an electrolyte.

**Battery module.** A single unit containing one cell or a set of cells electrically connected and mechanically assembled.

**Battery pack.** A single mechanical assembly optionally housed by a battery compartment, comprising battery modules, retaining frames or trays.

**Bodyshell.** The major structural part of the car constructed of all parts that are permanently attached (by welding, brazing, riveting, bonding, etc.) around which are assembled the mechanical components. Panels that are attached by means of removable fasteners are not considered to be part of the bodyshell.

**Bodywork.** All entirely sprung parts of the car in contact with the external air stream, except the rollover structures and the parts definitely associated with the mechanical functioning of the engine, transmission and running gear. Airboxes and radiators are considered to be part of the bodywork. Exterior rear view mirrors are not considered to be part of the bodywork. Bodywork is differentiated as follows:

- (a) Completely closed bodywork.
- (b) Completely open bodywork
- (c) Convertible bodywork with the hood in either supple or rigid (hardtop) material.

**Brake light.** Rear facing red light(s) each of 750 sq mm minimum surface area equipped with a 21W bulb or of equal luminosity directly operated without delay by application of the vehicle brakes.

**Bulkhead.** A partition separating one vehicle compartment from another.

**Cadet Marshal.** A Cadet Marshal grade can be issued

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to marshals between the dates of their 11th birthday and their 16th birthday and whose details are made available to the MSA for registration purposes. They may perform a limited range of duties appropriate to the grade and type of event, in line with MSA Guidelines.

In order to ensure compliance with the MSA Safeguarding Policy and Guidelines, all events using Cadet Marshals are required to include in the regulations for the event contact details of an MSA Safeguarding Officer.

**Car Trial.** A 'Sporting Trial' confined to vehicles of a production type over a course that is suitable to test equally the capabilities of cars of all sizes.

**Catalytic Converter.** A device designed and used to reduce the quantity of toxic emissions produced by an internal combustion engine.

**Chassis.** The overall structure of the car around which are assembled the mechanical components and the bodywork.

**Championship.** An event or series of events organised for the purpose of establishing the right to an individual or collective title.

**Circuit.** The whole area used for an event under the control of the organising club and/or a circuit owner.

**Class.** A division of vehicles by their engine capacity or any other means of distinction.

**Classic Reliability Trial.** A Competition based on the ability to climb hills or traverse difficult sections non-stop, that may use the public highway for all or part of its route or may be entirely on private ground.

**Clubmans Cars.** Open Sports Racing Car constructed in accordance with the technical regulations published by The Clubmans Register.

**Clubman's Event.** An event confined to members of the sole organising club, and, by invitation, to members of a limited number of other clubs.

**Clubsport Event.** A Clubsport Event is a competition involving motor vehicles, but not necessarily exclusively and where the emphasis is on the social element rather than any outright performance of the vehicle, and are of an event type prescribed in D5.

**Co-Driver.** The second member of each crew competing in Special Stage Rallies.

**Commitment Deposit (Race).** A deposit required by the MSA for any proposed Championship that has not previously run as a Series. This is additional to any Championship Permit fee and if the Championship runs as specified during the first three years this deposit will be refunded at the end of the third year.

If the Championship fails to take place, or ceases prematurely during its first three years the Commitment Deposit will be forfeit.

Any commercial liabilities arising from the Championship, during these first three years, are the responsibility of the Club/Championship organisers. However the Championship Permit holding Club may make application to the MSA for a refund of the Commitment Deposit or part thereof in order to assist with payment of any claim for liabilities resulting from the failure of the Championship. Any surplus deposit will be paid to a registered charity nominated by the MSA.

**Competition.** That part of an Event that is given a competitive nature by the publication of results. It must

be completed by the end of the meeting. An individual specific event, such as a gymkhana or treasure hunt, shall not be a Competition for the purpose of these Regulations if, on being informed in writing of the details of the proposed event, the MSA has waived in writing the necessity for an Organising Permit and the event takes place in accordance with such details.

**Competitor.** A person or body whose entry is accepted for or who competes in any event whatsoever, whether as Entrant, Driver, Co-Driver, Navigator or Passenger.

**Competitor's Licence Record.** The record of the Competitor's Competition licence history, including any penalty points and other judicial matters.

**Competition Numbers.** Numbers displayed on vehicles in Competition for identification purposes.

**Composite.** Material formed from several distinct components, the association of which provides the whole with properties which none of the components taken separately possess.

**Control or Check.** Any point that Competitors must visit during an event. A Control will be manned by officials; a Check may or may not be manned. If the term Time Control is used this will imply that the Competitor's time of arrival at or departure from this point is recorded.

**Control Fuel.** Fuel supplied from a defined source with chemical composition monitored in a manner defined by MSA Regulations.

**Control Line.** The line by reference to which a vehicle is timed or its performance in a Competition is determined.

**Course.** The track, plus all run-off areas, up to and including safety barriers, fences and walls.

**Cross Country Junior Trials Vehicle.** A two-wheel drive vehicle adapted from a front-engined lawn or garden tractor with the cutter deck and associated ancillaries removed, and fitted with a four stroke petrol or diesel vertical crankshaft engine of the Industrial and Commercial restricted type.

**Cross Country Vehicle.** A vehicle that has a manufacturers' design function to traverse arduous cross country terrain.

**Cross Country Event.** An event intended only for Cross Country vehicles. These may be defined as follows:

- (a) *Competitive Safari.* A timed event taking place on private ground that will be laid out over one or more courses and at one venue only.
- (b) *Cross Country Orienteering.* An event involving navigating and driving a vehicle to an objective, or series of objectives.
- (c) *Cross Country Vehicle Timed Trial.* A trial taking place on one area of private ground in which the marking during the event is mainly based upon the ability of Competitors to climb hills or traverse difficult sections non-stop, but where the results are decided predominantly by the time taken to traverse those sections.
- (d) *Cross Country Vehicle Trial.* A trial in which the marking for the event is mainly based upon the ability of Competitors to climb hills or traverse difficult sections non-stop, and in which the mileage upon a public highway does not exceed 50 miles.

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- (e) **Hill Rally.** An event of which the main portion of the route is cross country, and in which the marking for maintaining a set time schedule shall form a substantial part of the Competition. A Hill Rally may include tests or observed sections.
- (f) **Point to Point.** An event the object of which is for a team of vehicles to seek and visit points spread out on open ground. The points must be accessible by vehicle(s) and it may require team effort to reach and pass through the points. Public highways must not be used.
- (g) **Team Recovery.** An event the object of which is for a team of vehicles, by self recovery or team effort, to proceed through an observed section in the shortest possible time.
- (h) **Winch Recovery.** An event the aim of which is to move an object (normally a demobilised vehicle) by winching through a gate and along a specified course.
- (i) **Promotional Event.** A non-competitive event designed solely to enable participants to experience driving their vehicles off-road, and to introduce them to organised cross-country driving.
- (j) **Challenge Event.** An event the aim of which is for competitors to manoeuvre their vehicles to a remote location by means of driving, towing and or winching, or any combination thereof and where proof of visiting that location is by way of the scorecard, which shall be permanently attached to the vehicle, being officially marked.
- (k) **Cross Country Driving Test.** A Cross Country competition in which marking during the event is based solely on a Competitor's performance in manoeuvring tests. These tests may be at one or more sites on private property and be on unsealed surfaces and intended to encourage newcomers to the sport.

**Cylinder Volume.** Volume V generated in cylinder (or cylinders) by the upward or downward movement of the piston(s).

$$V = 0.7854 \times b^2 \times s \times n$$

where: b = bore

s = stroke

n = number of cylinders

**Data Acquisition.** The collection and storage of data on a vehicle, also termed "data logging". Data loggers acquire and store data until the data is downloaded.

For karting applications, data loggers are acceptable, provided there is no electrical connection between the data logger and the ignition system of the kart other than to an insulated section of the high-tension (HT) lead. Any lap-timing device used as part of the data logger must adhere to the lap-timing section of these definitions.

In karting terms, a data logger is a combination of an electronic memory and a series of sensors and looms, usually allied to a beacon detector for lap-timing. Data is usually viewable on a software program on a computer after download from the memory. A data logger may have Driver instrumentation connected to it for on track display of information to the Driver.

**Disqualification.** A person or body shall be said to be disqualified when permanently forbidden to take part in any event whatsoever.

**Drag Race.** A race between two cars over a flat and straight course of 440yds, with a minimum braking distance of 800yds, and a minimum width of 50ft.

**Drag Racing Vehicle.** A vehicle designed and prepared to obtain maximum acceleration over a straight course.

**Driver.** A person nominated as the Driver of a vehicle in any event.

**Driver Instrumentation.** The medium by which information is displayed to the Driver while the vehicle is on the circuit or in the pits/paddock. Driver instrumentation can be driven either by stand-alone sensors, or driven by a data logger. Sensors to drive the instrumentation are considered as part of the Driver instrumentation.

For karting applications Driver instrumentation is permitted, whether the display is stand-alone or used in conjunction with a data logger.

**Duration of Meeting or Event.** A Meeting is considered to have begun as from the beginning of the first event, and shall end when the last event has finished. An Event is considered to have begun as from the time scheduled for the beginning of administrative checking and/or scrutineering and shall include practice and the Competition itself. It shall end upon the expiry of the time limit for protests or appeals, or the end of any hearings.

**Electric vehicle.** Vehicles which solely use electricity stored on board and which are not necessarily or essentially propelled by the conversion of solar energy.

**Endurance Kart Event.** A Kart Race of a minimum of 60 minutes duration, where the need to refuel and/or make Drivers stops, or changes, is an integral part of the race. Drivers must have reached their 16th birthday. A group of licensed drivers may be referred to collectively by their team name without the requirement to hold an Entrants Licence.

There are two types of Endurance Kart events and these require different licence grades, namely:

(a) For engines which do not exceed 15hp in total per kart drivers must hold a minimum of a Kart Clubman Licence.

(b) For engines exceeding 15hp in total per kart drivers must hold a minimum of a Kart National 'B' (Novice) licence.

**Endurance Race.** A Race scheduled to have a minimum of 90 minutes duration, with mandatory refuelling and/or Driver stops and/or Driver changes, as an integral part of the race.

**Entrant.** The person or body responsible for making an Entry into a Competition and responsible for all matters pertaining to that Entry.

**Environmental Spill Kits.** For use in managing spills of automotive fluids, lubricating oils and fluids, gasoline, coolant additives, hydraulic oil etc. All kits to include adequate number of disposal bags for collection of used materials. Used spill kit materials to be disposed of in accordance with National and/or Local Authority Guidelines.

(i) **Large Spill Kit**

Absorbent pads and/or granular absorbent material capable of dealing with spillages up to 14 litres capacity.

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- (ii) **Medium Spill Kit**  
Absorbent pads and/or granular absorbent material capable of dealing with spillages up to 7 litres capacity.
- (iii) **Small Spill Kit**  
Absorbent pads and/or granular absorbent material capable of dealing with spillages up to 1.25 litres capacity.

**Event.** A single activity with its own results or one part or round of a series of events comprising a Championship. It may comprise: free practice and/or qualifying practice sessions; heats and a final; or be divided in some similar manner.

**Exclusion.** Exclusion forbids the person concerned to take part in any particular Competition, or in several sporting Competitions of the same meeting. Exclusion may be applied in retrospect, by the deletion of any result in any Competition.

**Finishing Line.** The last control line on a course.

**Forced Induction.** Any device capable of augmenting atmospheric pressure to increase the induction of air or fuel/air mixture into the combustion chamber (Superchargers, Turbochargers etc.). Any means of artificially reducing induction air temperature (eg packing with solid CO<sub>2</sub> etc.) is prohibited. Ram effects entirely due to the forward motion of the vehicle or tuning of induction or exhaust pipe length are not included within this definition.

**Fuel (see Pump Fuel).** All substances fed into the combustion chambers of an engine excepting only:

- (a) Atmospheric air and water vapour contained naturally therein.
- (b) Lubricating oil exceeding in viscosity 5 cSt at 100°C.
- (c) Deleted.

**Grand Touring Car (GT).** An open or closed automobile which has no more than one door on each side and a minimum of two seats situated one on each side of the longitudinal centre line of the car; these two seats must be crossed by the same transversal plane The car must be able to be used perfectly legally on the open road, and adapted for racing on circuits or closed courses.

**Ground Clearance.** The clearance between the ground and the lowest part of the bodywork, or of the suspended part of the car, in normal trim with the Driver aboard (J.5.20.11).

**Gymkhana.** An event held wholly on private ground and in which no test is determined solely by the speed of the competing vehicle, or by the skill of the Driver in controlling the vehicle, and in which if there are to be timed tests, there will be at least an equal number of untimed tests. No test may be timed to less than five seconds.

**Handicap.** A method laid down in the SRs for the purpose of equalising the chances of the Competitors.

**Hard Top.** An accessory manufactured in rigid material used in place of or to replace collapsible fabric cockpit hoods on open cars. When a hard top is fitted to a vehicle (even temporarily) the vehicle is then defined as closed and must have a rear window installed, unless otherwise stated in SRs.

**Historic Motorsport.** Competitions under a set of rules that seek to preserve the specification of their period and prevent modifications of performance and

behaviour which could arise through the application of modern technology. Historic competition is not simply another formula in which to acquire trophies, it is a discipline apart, in which one of the essential ingredients is a devotion to the cars and to their history. Historic Motor Sport enables the active celebration of the History of the Motor Car.

**High Speed Trial.** A Competition run on a circuit in which Competitors are required to maintain a minimum speed for a specified time or distance, or cover a minimum distance in a specified time, and may or may not benefit from improving upon the minimum specified. Deemed to be a race and subject to the appropriate conditions.

**Holder of Records.** The Driver or Drivers who were driving the vehicle when the record was achieved.

**Hybrid Vehicle.** A vehicle that uses two or more distinct power sources to propel the vehicle.

**Identical Cars.** Cars belonging to the same production series and which have the same bodywork (outside and inside), same mechanical components and same chassis (even though this chassis may be an integral part of the bodywork in the case of a monocoque or unitary construction).

**International Event.** An event is International when it is entered on the International Calendar and is open to Competitors and Drivers of various nationalities.

**International Record.** The best performance accomplished in a determined class or group. There are International Records for Land Vehicles, Automobiles, Special Vehicles and Ground Effect Vehicles.

**Junior Autocross.** A restricted Autocross class held to permit young Drivers between the ages of 14-17 years of age to compete in Autocross events.

**Kart.** A small four wheel racing vehicle with a rigid frame and no suspension of the wheels. The engine(s) drive the rear wheels only and these rear wheels must be joined by a single piece rear axle with no differential action between them. The Driver will be seated with feet to the fore.

**Kart Clubman Event.** A Kart Clubman Event is a Kart Race Event run primarily as entry level Karting. Engines may not exceed 15hp for Seniors or 10hp for Juniors, in total per Kart. Competitors must hold a Kart Clubman's Licence, as a minimum.

**Kit Cars.** A vehicle in which the chassis frame, body panels and other major components are manufactured and/or supplied from one manufacturer to which other specified components and parts are added/assembled to produce a complete car.

**Land Vehicle, Automobile, Special Vehicle, Ground Effect Vehicle.**

- (a) **Land Vehicle.** A locomotive device propelled by its own means, moving by constantly taking real support on the earth's surface, of which the propulsion and steering are under the control of a Driver aboard the vehicle.
- (b) **Special Vehicle.** Vehicle having at least four wheels not in line that is steered by at least two wheels and is propelled otherwise than through the wheels.
- (c) **Ground Effect Vehicle.** Vehicle that takes a bearing on the ground by the means of a pressurised air cushion, magnetised levitation or similar means.

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**Lap-Timing.** For karting applications, a trackside beacon emitting a continuous output of infra red light is permitted for use in conjunction with a data logger or for stand-alone lap-timing purposes. The position of the trackside unit is either to be located outside of the safety barriers or to be approved by the officials of the event.

**Licence.** A certificate of registration issued under the Code by an ASN to any person or body wishing to participate in Competitions held under the Code. The holder of a licence is presumed to know and abide by the Code and these Regulations.

**Licence Number.** The number on a licence.

**Light Alloy.** Any alloy containing more than 10% aluminium, magnesium or titanium.

**Local Record.** A record established on a permanent or temporary track approved by the MSA, whatever the nationality of the Competitor.

**Locomotive Device.** A self contained and powered device capable of moving from place to place.

**Main Chassis Structure.**

(a) *Single seater racing cars* – the fully sprung structure of the vehicle to which the suspension and/or spring loads are transmitted, extending longitudinally from the foremost front suspension mounting on the chassis to the rearmost one at the rear.

(b) *Other cars* – the overall structure of the car around which are assembled the mechanical components and the bodywork.

**Mechanical Components.** All those necessary for the propulsion, suspension, steering and braking as well as all accessories whether moving or not which are necessary for their normal working.

**Meeting.** An organised assembly of Competitors and officials, including one or more competitive or non-competitive activities, taking place within a defined period and governed by the same sets of Regulations.

**Methanol.** Methyl Alcohol CH<sub>3</sub>OH. This is a clear colourless liquid, miscible with water acetone and other ketones, the esters, aromatic and highly unsaturated hydrocarbons, and castor oil. It is not miscible in all proportions with straight-run petroleum spirit or mineral oil. B.P. 64.7°C, Specific Gravity 0.796, Flash Point 32°F. For Speed Events, British Standard 506 with an allowance of up to 10% Acetone, is permitted.

**Mile and Kilometre.** For all conversions of English to Metric measurements and vice versa, the mile shall be taken as 1.609344 kilometres, and the kilometre shall be taken at 0.62137 of a mile.

**Model Year.** This defines new or re-engineered vehicles that are built to a specification intended for sale and use from the start of the year indicated. Example: Vehicles built in the last months of a year for the next season would be defined as new season vehicles and would have to conform to regulations applicable to the new season.

**Modification.** Any change in the design, material, shape, dimensions and/or surface finish of a component, except for basic manufacturing processes, normal wear and published service or repair procedures.

**Monocoque Chassis.** A structure of metal and/or composite materials welded, riveted or bonded into a structure in which the skin carries all or most of the stresses imposed on that structure.

**Nationality.** The nationality of a Competitor or Driver for the purpose of these Regulations shall, after the grant of a licence, be deemed to be that of the ASN that last issued a licence.

**National A Event.** An event open only to Competitors and Drivers holding an appropriate National A or higher licence issued by the MSA.

**National B Event.** An event in which the Competitors or Drivers who take part have to comply with particular conditions of eligibility for instance:

- (a) Membership of an Invited Club or Championship.
- (b) A Competition confined to vehicles of a particular make.

**National Record.** A record made within the territory of the MSA regardless of the nationality of the Competitor.

**Navigational Scatter Event.** A navigational event where there is no Competition on the public highway and which falls within the provisions of automatic authorisation under the Motor Vehicles (Competition and Trials) Regulations (where applicable). Competitors should be required to visit a number of points at random and no merit should be attached to visiting more than 75% of the points listed. The majority of the points should not be readily accessible without leaving the car and the car shall be an incidental means of transport between the various points.

**Navigator.** The second member of each crew competing in Rallies, or other events, held entirely on the public highway.

**Number Plate.** The plate that would normally carry the registration number of the vehicle, were it to be run on public roads. Size and shape to be in accordance with DVLA requirements.

**Off-Road Racing.** A race on a grass or unsealed surface.

**Organising Club.** A club registered with the MSA and responsible in all respects for the organisation of an event.

**Organising Committee.** A committee authorised by the organising club to act on their behalf. The organising committee will take the place of such club for the purpose of these Regulations except that the club will be responsible for the acts and omissions of such organising committee as if such acts and omissions were their own.

**Organising Permit.** The documentary authority to organise and hold a Competition, granted solely by the MSA.

**Original Equipment.** See Standard Part.

**Pace Notes.** Any information (in any recorded form) relating to a Special Stage, that has not been provided to all Competitors by the Organisers of that event. This excludes Subjective Route Notes and the use of commercially available maps.

**Paddock.** An area provided by the Organisers for the parking of competing and support vehicles, and for the purpose of servicing competing vehicles.

**Parc Fermé.** A secure identified area designated by and under the control of the Organisers and officials of an event and into which any entrant or Competitor must place the competing vehicle and/or associated items

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as well as and when directed by the Organisers or officials including the route instructions of the event.

**Passenger.** A person, other than the Driver, conveyed on a vehicle during a Competition.

### Period Defined Vehicles (Non-Rally)

- A – (Veteran) Cars built before 1 Jan 1905.
- B – (Edwardian) Cars built between 1 Jan 1905 and 31 Dec 1918.
- C – (Vintage) Cars built between 1 Jan 1919 and 31 Dec 1930.
- D – (Post Vintage Thoroughbred) Cars built between 1 Jan 1931 and 31 Dec 1946.
- E – Cars built between 1 Jan 1947 and 31 Dec 1961 (up to 31 Dec 1960 for single seater and two seater racing cars).
- F – Cars built between 1 Jan 1962 and 31 Dec 1965 (from 1 Jan 1961 for single seater and two seater racing cars and up to 31 Dec 1966 for Formula 2).
- G – Cars built between 1 Jan 1966 (1 Jan 1964 for Formula 3) and 31 Dec 1971 that are no longer eligible for current Competition.
- H – Cars built between 1 Jan 1972 and 31 Dec 1976 that are no longer eligible for current Competition.

### Period Defined Vehicles (Rally)

- Historic Category 1 – Cars first registered before 1 Jan 1968 that comply with R.19.1.1 or R.49.1.
- Historic Category 2 – Cars first registered between 1 Jan 1968 and 31 Dec 1974 that comply with R.19.1.2 or R.49.2.
- Historic Category 3 – Cars registered and homologated in Groups 1, 2, 3 or 4 between 1 Jan 1975 and 31 Dec 1981 that comply with R.19.1.3 or R.49.3.
- Historic Category 4 – Cars registered and homologated in Groups A, N and B between 1 Jan 1982 and 31 Dec 1985 excluding any cars that were regulated out by the FIA.

**Pit Lane.** That part of the track that provides competing vehicles with access to and from the pits.

**Pits.** An area that may be provided by the Organisers for Competitors and their authorised personnel, for the purpose of servicing competing vehicles, in accordance with the SRs, and that has direct access to the Pit Lane.

**Ports (Inlet/Exhaust).** Openings and passages in components forming or housing the combustion chamber and/or cylinders through which inlet and exhaust gases pass.

**Practice.** That part of an event intended to enable a Competitor to familiarise himself with the course. In certain events, performance during practice may be used by the Organisers to determine starting order or position. Practice is subject to all the regulations governing the event.

**Practising/Training Event.** An event organised for the purpose of enabling Drivers to gain experience of their vehicles. To qualify as a practising/training event there must be no element of Competition, no awards, times may be recorded but not published and cars may not be started simultaneously. There may be no revenue other than from entry fees.

**Production Kit Car.** A minimum of ten identical cars must have been constructed within a twelve

consecutive month period. The following items must be identical on all ten cars, wheelbase, track, engine type and specification, weight at front and rear wheels, body shape and material, wheel diameter, wheel rim width. (dimensions subject to normal manufacturers' [i.e. homologation] tolerances).

**Production Car Autotest.** An Autotest event restricted to strictly production cars as defined in the Specific Regulations, intended to encourage newcomers to the sport.

**Programme.** A document prepared by the Organisers of a meeting for the purpose of informing the participants and spectators about the meeting.

**Promoter.** Any person or body financially responsible for a Competition. The organisation shall be the responsibility of an Organising Club.

**Proprietary Equipment.** Equipment marketed under a trade name that is on general sale to the public.

**Protest.** A formal complaint, lodged within specified time limits by an entrant or Competitor, about an act or omission by another Competitor, or about the eligibility of another vehicle.

### Pump Fuel

- (a) Petrol: Motor Gasoline of the type on sale to the general public from UK roadside filling stations (see Appendix 1):

LRG (unleaded), BS EN 228 (unleaded and super-unleaded).

Petrol is a product refined from crude oil that contains a large number of identifiable compounds that can typically be 250 in number. These compounds can be identified and compared to the available petrol from major oil companies and suppliers.

Unless otherwise stated or the distinction is made between leaded and unleaded petrol, the motor gasoline fuel shall meet the following: Acceptance levels for Octane Numbers will be accepted or rejected according to the Standard ASTM D.3244. Only additives to this Motor Gasoline Fuel solely for the purpose of lead replacement are allowed. Lead replacement gasoline (LRG also known as LRP): Only additives to unleaded motor gasoline, solely for the purpose of lead replacement, from Sodium, Phosphorous or Manganese are allowed, subject to application according to manufacturer's instructions and to the treated fuel complying with (B) Appendix 1. Lead in excess of EU Directive 98/70 EC requirements is illegal. This also applies to 'Free Fuel'.

- (b) LPG (Liquefied Petroleum Gas) which is of 99% wt. min. hydrocarbon composition and that is entirely gaseous at atmospheric temperature and pressure. Complying with BS EN589.
- (c) Diesel Automotive Gas Oil (DERV) on general sale to the public at roadside filling stations in the UK, complying with BS EN 590 and EU Directive 98/70 EC (see Appendix 1).
- (d) Bio Ethanol – Only permitted to be used with the specific approval of the MSA. Specifications available from the MSA Technical Department.
- (e) Bio Diesel – Only permitted to be used with the specific approval of the MSA. Specifications available from the MSA Technical Department.

- (f) Alternative fuels not falling within the categories specified above may be permitted by specific written authorisation of the MSA, subject to compliance with any conditions of use incorporated in that authority.

The MSA reserves the right to amend these details to reflect any change occurring in the quality of fuel on general sale to the public in the UK.

**Race.** A Competition where two or more cars are started simultaneously from the same starting line and over the same course, and in which the winner is the Competitor who first completes a specified distance, including any handicap credit, or who completes the greatest distance in a specified time.

**Racing Car.** See Single-Seater Racing Car and Sports Racing Car.

**Radiator/Intercooler.** Mechanical part allowing for the exchange of thermal energy between two fluids (including air).

**Rally.** A Competition that may utilise the Public Highway and where there is an imposed average speed for Competitors, but which does not meet the requirements of a Classic Reliability Trial, Navigational Scatter event, Treasure Hunt or Road Safety Rally. The greatest speed must never form a factor for the classification. All motoring events utilising the Public Highway in England, Scotland or Wales are subject to Motor Vehicles (Competitions and Trials) Regulations. A Rally will comply with at least one of the following categories and must meet the organisational requirements laid down by the MSA. The Regulations must clearly indicate the category of Rally that is being organised.

- (a) *Economy Rally.* Designed to assess the fuel economy of Competitors' cars and in which the overall results are based on the relative fuel consumption of these cars.
- (b) *Navigational Rally.* A Rally designed to test the navigational skill of the crew.
- (c) *Road Rally.* A Rally in which the Competition on the Public Highway does not qualify for an alternative category and in which marking for maintaining a time schedule forms a substantial part of the Competition.
- (d) *Single Venue Stage Rally.* A Special Stage Rally that uses parts of stages more than four times.
- (e) *Special Stage Rally.* A Rally containing Special Stages joined by linking sections that may utilise the Public Highway.
- (f) *Twelve Car Rally.* A Rally complying with one of the above categories that falls within the provisions of automatic authorisation under the Motor Vehicles (Competitions and Trials) Regulations (where applicable). The category must be indicated in the title of the event (i.e. Economy Twelve Car Rally, etc).
- (g) *Vintage Rally (or Run).* A Rally complying with one of the above categories and restricted to vehicles built prior to 1st January 1941 (including Post-Vintage). The category must be indicated in the title of the event (i.e. Vintage Twelve Car Rally, etc).
- (h) *Veteran Rally (or Run).* A Rally or Run restricted to vehicles built before 1 Jan 1919.

- (i) *Historic Special Stage Rally.* As (e) above, but participation is limited to cars complying with the appropriate Technical Regulations for Historic Special Stage Rally Vehicles.
- (j) *Historic Road Rally.* As (c) above, but participation is limited to cars complying with the appropriate Technical Regulations for Historic Road Rally Vehicles.
- (k) *Endurance Road Rally.* A Road Rally where a substantial proportion of the Competition takes place on the highway, timed to the minute, and which shall also include Special Tests on private property which may be timed to the second.
- (l) *Trophy Rally.* A supplementary event to a main rally, which may be provided by Organiser's to permit Competitors who retire from the main event, the opportunity to have further Competition. Vehicles must be re-scrutineered for conformity. Competition may only commence at a predetermined time during the event. These Competitors may run behind the main event or be re-introduced into their original seeded position, at the Clerk of the Course's discretion. Results should be displayed and awards may be presented. The intention to promote a Trophy Rally must be included within the published event regulations.
- (m) *Practice/Training Rally.* A Practice Event may be promoted as a supplementary event, to permit Competitors who retire from the main event, the opportunity to gain further experience of their vehicles. The intention to provide a Practice Event must be included within the published event regulations. Vehicles must be re-scrutineered for conformity. Competition may only commence at a pre-determined time during the event. These Competitors may run behind the main event or be re-introduced into their original seeded position, at the Clerk of the Course's discretion. There will be no results or awards.

**Rallycross.** A timed event with several cars starting simultaneously that takes place on a closed circuit with a combination of sealed and unsealed surfaces.

**Rallysprint.** A title reserved for special events run with the specific approval of the MSA that can only take place at MSA licensed venues.

**Recognised Group.** A club or association that does not have individual members but consists of a number of independent clubs, registers or associations, that need not themselves be Recognised Organising Clubs.

**Record.** The best result obtained under the prescribed conditions.

**Registered Member of a Club.** Any Member of a Club, other than an Honorary Member, who has been duly elected and accepted for membership for at least 12 months or the balance of the Club's current membership year. Any form of membership that permits the holder to compete in club events, must also entitle such a member to be present and vote at General Meetings of the Club.

**Regional Association.** An Association of Organising Clubs that has been formed by and on behalf of the MSC.

## (B) Nomenclature and Definitions

**Restrictor.** Any device with stated orifice and minimum thickness 3mm of non-porous material, imposed or inserted either in an inlet tract for the purpose of controlling the passage of the air/fuel mixture into the induction system and/or combustion chamber, or inserted in the exhaust tract to control the passage of exhaust gases.

**Road Book or Route Card.** A document supplied to Competitors instructing them how to proceed from one point to another, and containing such information as to the controls and checks that they are to visit during the event, how they will establish that they have visited checks not manned by officials, details of tests, etc.

**Road Safety Rally.** An event organised with the intention of promoting Road Safety and falling within the provisions of automatic authorisation under the Motor Vehicles (Competitions and Trials) Regulations (where applicable). Such events may qualify for an exemption of permit.

**Road Section.** Any section of the route of a Special Stage Rally (excluding control and service areas) whether on the public highway or not that links Special Stages.

**Rollover Protection System (ROPS).** 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. (See K1 – Roll-Over Protection Systems.)

**Saloon Car.** See Touring Car.

**Scheduled Speed.** The average speed calculated from the time allowed to Competitors to cover a certain distance. In the case of highways this distance shall be that determined from 1:50,000 Ordnance Survey maps (or equivalent local maps) along the route specified by the Organisers, or if no route is specified by the shortest route.

**Section.** That portion of the route of a Competition between two controls, or that portion of a route of a Competition to which specific requirements apply, eg:

- (a) **Standard Section.** Any section of a Rally where a penalty is imposed for late arrival or arrival before Scheduled Time.
- (b) **Neutral Section.** Any section of a Rally where the Organiser must impose an early arrival penalty and, where applicable, a maximum lateness penalty and where a Competitor is supplied with supplementary information by the Organiser that requires the crew to observe special restrictions as to their driving behaviour and being a section where a Competitor may not make up time.
- (c) **Observed Section.** A section of a Trial that has to be traversed non-stop to avoid penalty.
- (d) **Regularity Section.** A section of a rally in which Competitors are required at all times to adhere to a set speed and in which adherence to that speed may be checked at intervals during the section. The start and finish must be clearly defined.
- (e) **Transport Section.** Any section of a rally, being at least four miles in length, where no penalty is applied for early arrival, other than in accordance with R.10.5, but where applicable, a maximum

lateness penalty can be applied. A section whose sole purpose is to transport Competitors between other types of section.

**Series Production Car.** A car of which at least 1,000 identical examples have or are being manufactured within a twelve consecutive month period.

**Series Production Engine.** An engine sourced from a series production car. The origin of the cylinder head and cylinder block must always be established.

**Servicing.** Work carried out on the car by any person, other than the competing crew, or the use of any part or tools not carried in the competing car.

**Shortest Route.** The shortest route between two points using only public highways, unless specific permission has been obtained for the use of private property and all Competitors so informed.

**Silhouette.** The outline of the original body shape, in the side and plan view, of the vehicle above a line drawn through the front and rear hubs.

**Single Seater Racing Car**

- (a) Unless period defined, the construction of the vehicle must be symmetrical, i.e. when the vehicle is lifted laterally and weighed without the Driver, the half weight on either side must be equal to half the overall weight  $\pm 5\%$ .
- (b) It must be possible to enter or leave the Driver's seat without it being necessary to remove or detach any part of the vehicle, other than the steering wheel, side impact protection systems, including those incorporating the head rest, or seat belts/harnesses.
- (c) The Driver, sitting in the driving position, must face forward.

**Social Run.** A non-competitive run for likeminded participants where there is no other purpose than the camaraderie of motoring in company to a predetermined point and which is not within the jurisdiction of the MSA.

**Solar cell.** A photo voltaic element which is used to convert solar radiation into electrical energy.

**Solar electrically powered vehicle.** Vehicles solely propelled by the direct or indirect conversation of solar energy.

**Solar module.** Several solar cells making up one mechanical unit.

**Space frame chassis.** A structure constructed of individual tube components of any section.

**Spare Wheel.** A wheel with tyre suitable to be used as a replacement for one in use on the vehicle.

**Specialist Production Car.** A car of which at least 20 identical examples are manufactured within a twelve consecutive month period and fitted with a series production car engine.

**Special Stage.** A section of a Rally, on roads or land for which the event has exclusive access, or on public roads closed by Government legislation specifically permitting closure for motor sporting purposes, where the marking for maintaining a time schedule forms a part of the Competition.

**Special Test.** A test, permitted in road rallies which takes place off the public highway in which a



# Nomenclature and Definitions (B)

**Competitor** is required to perform a manoeuvre or series of manoeuvres set by the Organisers. If timed, the Competitor shall not be required to exceed an average speed of 30mph or 40mph for Endurance Road Rallies. No benefit shall accrue to any Competitor exceeding the set average speed. Road Rallies with Standard Sections timed to an accuracy of less than a minute may only include a Special Test at the start of the itinerary and all competitors must complete the Special Test before midnight.

**Specialist Competition Engine.** An engine, other than a Series Production Engine or motorcycle engine, of four cylinders and normally aspirated, no greater than 2,500cc.

**Speed Event.** An event in which cars run individually, even though two or more individual runs may be taking place concurrently, over a course exceeding 200m in length and in which the relative performance of the Competitors is assessed by timing them over a given distance. The winner, or the most meritorious performer, is the Competitor who covers the distance in the least time. The term will include hill climbs, sprints, slaloms, drag races, autocross and other similar events.

**Spill Kit.** See Environmental Spill Kit.

**Spoiler.** See Aerodynamic Device.

**Sponsor.** A person or body making a contribution, financially or in kind, towards the promotion of a Competition or of a Competitor.

**Sporting Trial.** A trial in which the marking during the event is mainly based upon ability to climb hills or traverse difficult sections and in which the distance upon a highway does not exceed 50 miles.

**Sports Car.** A car having either a non-detachable or a detachable roof with no more than one door on each side and a minimum of two seats situated one on each side of the longitudinal centreline. The two seats must be crossed by the same transversal plane. Interior dimensions must be inferior to the minimum dimensions applicable to Touring Cars.

A minimum of 100 cars must have been constructed within a 12 consecutive month period.

**Sports Racing Cars.** Two-seater open or closed racing car, built for the sole purpose of taking part in races on closed circuits. Closed cars must have a windscreen and two doors (one on each side of the cockpit).

**Standard Part.** Is a part, the specification, features, location and method of operation of a part are as provided when new by the motor manufacturer for the model and date of car as shown on the entry form.

**Standard Pattern Part.** Replacement part that has a similar form shape and features as the standard part and is made using similar materials and manufacturing processes e.g. A standard part manufactured by a non original equipment supplier that is fully interchangeable with the standard part.

**Start.** The start is the moment when the order to start is given to a Competitor or Competitors, or when a Competitor crosses the starting line actuating automatic timing equipment.

**Starting Line.** A starting line is the first control line on a course.

**Sub frame.** Part fastened to the bodysell or chassis and/or ROPS to which are attached parts of the suspension and/or drive train.

**Subjective Route Notes.** Information relating to a Special Stage, prepared by an MSA registered supplier, which is available to all competitors in an event.

**Supplementary Regulations (SRs).** Compulsory document issued by the Organisers of a Competition with the object of laying down the details of that Competition.

**Suspension.** A person or body shall be said to be suspended when he has for a certain period been forbidden to take part in any Competition.

**Suspension (Vehicle).** The system(s) by which sprung movement is provided between the main chassis structure and the road wheels. Suspension will be deemed to consist of all the partly sprung components that move relative to the main chassis structure for the purpose of making connection between it and the entirely unsprung parts but not including components exclusively concerned with steering, braking and power transmission.

- (a) *Suspension mounting:* the member or component attached to the chassis on which the moving element(s) of the suspension is mounted.
- (b) *Suspension mounting points:* the point(s) on the chassis and the mounting that forms the centres of attachment to the chassis.
- (c) *Suspension locating point:* the point in the mounting about which the suspension articulates.
- (d) *Suspension bush:* considered in relation to a suspension mounting or another suspension member it may have one of two forms:
  - (i) a lining of an external element that rubs directly upon an inner element,
  - (ii) a pre-manufactured and catalogued unit within which all articulation is provided.
- (e) *Suspension bush housing:* the aperture in the suspension member that supports and locates the suspension bush. In the case of the MacPherson strut top mountings the bush housing is considered to be the suspension mounting.
- (f) *Sprung suspension:* a suspension system with the weight of the car supported by discrete springing media none of which may come within the definition of a 'Temporary Part'. Flexible mounting bushes are unacceptable as springing media.

**Taster Event.** An entry level competition where to encourage first time participation in Motorsport, participants will be deemed to be a member of the club for the day. Clubs may organise no more than one of each type of prescribed event per year to recruit new members and participants.

**Telemetry.** Telemetry is the means of transfer of information and/or data from a data source to a data receiver without a cable. In motor sport applications, the term telemetry usually refers to "uni-directional" transfer of data to the pits whilst the vehicle is on the circuit, without any acknowledgement signal being transmitted by the pit based equipment. "Bi-directional"

## (B) Nomenclature and Definitions

telemetry, which describes and facilitates full transfer of data in both directions, is not permitted.

**Temporary Part.** A part that differs in type or material from that normally used on or that which has a short useful life expectancy.

**Test.** A Competition held on private ground, in which a Competitor is required to complete one or a series of manoeuvres as laid down by the relevant instructions (see also Autotest).

**Time Attack.** A Time Attack Event is run over a number of sessions to determine the competitor (in class) completing the fastest lap time. Drivers are not competing against each other but against the clock and in a manner equivalent to a timed qualifying session. By display of their headlights drivers indicate they are attempting their flying lap (hot lap). Overtaking should only be carried out on the left.

There will be: Warm-up, Practice, Qualifying and Final. These Sessions are always open Pit Lane and can vary from 15 minutes to 20 minutes per Session.

After the Warm Up (untimed) and Practice sessions the main segments of the day are the Qualifying and the Final. All Classes will participate in the Qualifying Sessions. The cars to go forward into the Final will be confirmed in the SRs. The overall winner will be declared as that driver who has posted the quickest lap time in the Final.

Organisers reserve the right to split/amalgamate classes at their discretion in all sessions.

Session 1 - Warm Up - will be untimed.

Session 2 - Practice - will be a timed session.

Session 3 - Qualifying - will be a timed session. The fastest drivers will proceed into Session 4 the Final. The number of competitors proceeding to the final will be confirmed in the Final Instructions.

Session 4 - The Final.

**Time Card.** A document upon which the time of a Competitor's arrival at or departure from a Control is recorded. A time card may or may not be incorporated in a Road Book or Route Card.

**Touring Assembly.** An activity organised with the primary object of assembling tourists at a point determined beforehand.

In a Touring Assembly:

- (a) a prescribed route may have to be followed.
- (b) pre-arranged points may be provided for in the event's itinerary,
- (c) no limits of speed may be laid down,
- (d) no requirement to visit prearranged points, other than a requirement to report at a final point not later than a specified time, are permitted
- (e) no awards of any description, other than those in relation to activities arranged at the finishing point may be made or given.

Where any or all of the above points become a mandatory part of the itinerary the Event will be subject to the requirements of Route Authorisation (Motor Vehicles (Competitions and Trials) Regulations).

The Regulations for the event must be clearly endorsed 'Touring Assembly', and before publication the consent in

writing of the MSA and its approval of the regulations for the Touring Assembly have first been obtained, by issue of a Certificate of Exemption, and where the route runs through the territory of an ASN other than the MSA, that R.1.3 of these Regulations has been complied with.

The programme of a Touring Assembly may include additional events (other than speed) provided that they are held only at the place of final assembly.

No prize money may be allocated in respect of Touring Assemblies.

**Touring Car.** Series Production cars of which at least 2,500 identical examples are, or have been manufactured, within a twelve consecutive month period and which are equipped with a minimum of four adult size seats, an integral non-detachable roof, a minimum of two doors, one on each side of the vehicle and meet the dimensional requirements shown in K Appendix 2, Drawing No. 61.

**Track (other than a Special Stage).** That part of a course that may have a sealed or unsealed surface, that is designated to be used by Competitors. Its boundary may be the edge between its surface and the adjoining ground or a dotted or continuous painted line on a sealed surface, or as indicated by markers.

**Track Licence.** The written approval of a track by the FIA or the CIK-FIA (International Track Licence) or by the MSA (National Track Licence).

**Traction battery.** The collection of all battery packs which are electrically connected for the supply of energy to the power circuit.

**Treasure Hunt.** An event involving the solving of certain problems in which the use of a car is merely incidental as a means of transport and the skill or experience of a Driver plays no part. If the event utilises the Public Highway, it shall be run in accordance with the Motor Vehicles (Competition and Trials) Regulations. Such events may qualify for an exemption of permit.

**Trial.** A number of tests on private ground with the object of bringing the car to an involuntary stop

**Trucks.** Two-axle road tractors, with a minimum production of 50 units during any 12-month period, duly certified by an official document from the manufacturer. The general shape of the tractor unit must correspond to the shape of a road-going tractor unit homologated for the transportation of merchandise.

**Unitary Construction.** A vehicle construction method whereby metal and/or composite materials are welded, riveted or bonded into a single structure to form both chassis and bodywork as a single structure.

**Venue.** The whole area or areas used for an event under the control of the organising club and/or venue owner(s).

**Wheel.** Flange and rim. By complete wheel is meant flange, rim and tyre.

**Windscreen.** A rigid transparent shield located in front of vehicle occupants to protect from the wind and airborne particles.

**World Record.** A record recognised by the FIA as the best performance irrespective of class.



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## THE ROAD TRAFFIC ACT 1988/91

From 1 July 1992, the offences of dangerous, careless and inconsiderate driving of a mechanically propelled vehicle on a road (sections 1, 2 and 3 of the Act as amended by the Road Traffic Act 1991) also apply to a public place. The extension of road traffic law to public places has important consequences for those who take part or organise events involving motor vehicles in fields, parks or other areas where the general public is admitted either free of charge or on payment of an entrance fee.

The above offences do not apply to those taking part in 'authorised' motoring events when driving in a public place other than a road, provided they are driving in accordance with the appropriate authorisation for that event. Section 13A allows for the 'disapplication of sections 1 to 3 for authorised motoring events' and provides powers for The Motor Vehicles (Off-Road Events) Regulations 1995 which introduces a system for authorising events.

The MSA is an 'Authorising Body' under these Regulations.

**Copies of the Road Traffic Act 1988 and 1991 and The Motor Vehicles (Off-Road Events) Regulations 1995 are available online at [www.legislation.gov.uk](http://www.legislation.gov.uk)**

*Attention is drawn to MSA Regulation D6.*

**It is not illegal to organise or take part in an unauthorised motoring event in a public place,** but drivers and riders should be aware that they are liable to prosecution if they drive dangerously or carelessly.

There are many kinds of motoring events. Different rules are appropriate to minimise risk to participants, spectators and other members of the public who may be present.

A precise definition of 'event' or 'public place' cannot be given. If there is any doubt organisers are advised to seek legal advice. Authorising bodies should consider whether the event requires drivers to drive dangerously. It is not the purpose of the Regulations to legitimise unnecessary dangerous driving, nor is it desirable to authorise an activity which is likely to be regarded as an event as this could give drivers a false sense of security.

It is not foreseen that courts would regard purpose built stadiums, where the public have no access to the place where the event is staged, as a public place.

## (B) Nomenclature and Definitions

### Appendix 1: Tables

#### PUMP FUEL – MOTOR GASOLINE

	<b>BS EN 228 (Unleaded)</b>	<b>Test</b>
MON (max)	89.0	EN ISO 5163
RON (max)	100.0	EN ISO 5164
Oxygen % (max)	3.7% w/w	Elemental
	<b>LRG (Unleaded)</b>	<b>Test</b>
MON (max)	89.0	EN ISO 5163
RON (max)	100.0	EN ISO 5164
Lead (max) g/l	0.005	ASTM D3341/IP362/EN 237
Oxygen % (max)	2.7% w/w	Elemental

Certain of the above values are additional to those specified in the standards referred to.

#### PUMP FUEL – DIESEL

	<b>BS EN 590</b>	<b>Test</b>
Density 15°C kg/m <sup>3</sup> (max)	<b>845</b>	<b>EN ISO 3675/EN ISO 12185</b>
Cetane Number (max)	<b>58</b>	<b>EN ISO 5165/EN 15195</b>
Calculated Cetane Index (max)	<b>58</b>	<b>EN ISO 4264</b>
Sulphur Content mg/kg (max)	<b>10</b>	<b>EN ISO 20846/EN ISO 20884</b>



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## (B) Nomenclature and Definitions

### CONVERSION TABLES

Distance	Temperatures	
1 mile = 1760 yards 1 kilometre = 1000 m 1 yard = 3 ft 1 metre = 100 cm 1 foot = 12 in 1 centimetre = 10 mm 1 inch = 2.54 cm 1 foot = 30.48 cm 1 yard = 91.44 cm 1 mile = 1.609344 km 1 millimetre = 0.03937 in 1 centimetre = 0.3937 in 1 metre = 39.37 in 1 kilometre = 0.62137 miles	Celsius	Fahrenheit
	-5 =	23
	0 =	32
	5 =	41
	10 =	50
	15 =	59
	20 =	68
	25 =	77
	30 =	86
	Speed	
	KPH	MPH
	50 =	31
	80 =	50
	100 =	62
	150 =	93
	200 =	124
	MPH	KPH
	25 =	40
	50 =	80
	70 =	112
	100 =	161
	150 =	241
	Fluid weights	
	Water 10 lbs per gallon	1.0 kg per litre
	Petrol 7.4 lbs per gallon	0.74 kg per litre
	Diesel 8.3 lbs per gallon	0.83 kg per litre
	LPG 5.2 lbs per gallon	0.52 kg per litre
	Pressures	
	atu	psi
	0.25 =	3.56
	0.50 =	7.11
	1.00 =	14.23
	2.00 =	28.46
	5.00 =	71.15
	Power	
	Horsepower:	
	1hp = 0.7457kW	1ps = 0.7354kW
	1kW = 1.341ps	1kW = 1.3625hp
	Torque:	
	1lbs ft = 1.3559 Nm	
	1Nm = 0.7375lbs ft	
Distance per Capacity		
1 mile per litre = 4.5 mpg 1 km per litre = 2.824 mpg 100 km per litre = 282.4 mpg		