The HRCR Historic Road Rally

NOVICE'S GUIDE

Prepared for the HRCR

Clubmans Historic Road Rally Championship

HRCR.Co.uk

HISTORIC RALLY CAR REGISTER

The Home of Historic Rallying

Preface

This guide has been prepared to give you some insight into the noble art of rallying. The basis for the guide was an earlier document prepared for novice competitors on the first historic Regis Rally in 1993 and subsequently expanded for use by competitors on The HRCR Speedsport Design Clubmans Rally Championship which started in 1995. It has since been updated for the **HRCR Clubmans Road Rally Championship** and adapted to complement the **HRCR Navigation Handbook**, therefore it skips over the subject of route instruction presentation methods now covered by that booklet.

We hope that the guide will be informative and useful and we would welcome your comments so that we can improve it for future years.

Mark Aylward, with updates by the late Andy Gibson.
Further updates 2017 & 2021, by Ian Doble & Sarah Binstead.

This Novice Guide has been produced as a guide only, by enthusiasts within the Historic Rally Car Register. It is produced in good faith and with errors and omissions excepted. Please refer to the Motorsport UK Yearbook and the HRCR Clubmans Road Rally Championship Regulations for definitive clarification on any point.

Like Andy before me I can't guarantee that there are no errors or omissions in this Handbook. If you do find anything, or have any questions or comments, you are welcome to send an e-mail to
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1. Introduction

This short guide is intended to introduce you to some of the ins and outs of road rallying, so that come the day of your first event you will arrive prepared and equipped to do battle. In the main the guide will cover historic road rallying though aspects of 'modern' events will also be covered for completeness or interest. As we are dealing mainly with the organisational, navigational and timing aspects of events we are addressing the intelligent half of the team - the navigator. There are also a few hints on car and driver preparation. Yes your driver will need preparing - treat it like the idiot it is and make sure it has packed all the vital bits of paper and widgets required to start and complete the event. However, dear navigator, be warned you WILL get the blame for everything, except where credit is due, so give them as few excuses as possible by making sure you are as well prepared as you can be.

2. Getting The Paperwork Together

2.1. Licensing

Motorsport in this country is governed by Motorsport UK (MSUK) based in Bicester, OX27 8FY. They are responsible for the authorisation of events and licensing of competitors and officials. At the lowest levels competitors must be a card-carrying member of an MSUK affiliated motor club and an MSUK "RS Clubman" Licence, which is free. This allows you to compete in 'closed-to-club events such as 12 car navigational rallies and autotests.

At higher levels both crew members require an MSUK "RS Interclub" licence. These are issued at various levels according to the competence of the competitor and according to the motor sport discipline - the basic split is between circuit racing and other 'Non-Race' events. Of course the higher the grade the more money they will relieve you of!

The lowest grade licences, which may be obtained without any previous experience, are the 'RS Clubmans' and the 'RS Interclub'. The licence you get depends upon the grade of event you intend to enter. Events are granted permits to run by the MSUK in return for a per capita fee. The permits have the same grading as the licences, and therefore to enter an 'Interclub' event you will require an "RS Interclub" or higher grade licence. Higher-grade licences require a competitor to show evidence of experience. This is achieved by obtaining the required number of clerk-of-the-course (see later) signatures on your licence indicating that you have successfully completed a number of events.

Competition Licences for both driver and navigator are obtained from the MSUK at www.motorsportuk.org. An "RS interclub" licence will be required for the HRCR championship rounds. You normally need to allow one month if submitting your application at the busy period at the start of the year, but paying more money can accelerate this.

2.2. Insurance

Valid event insurance for the driver(s) is required for any event that uses the public highway. This can be either arranged with your normal car insurance, or you can obtain cover for the duration of the rally on schemes arranged by the rally organisers. Please note that many insurance policies do not cover rallies, but Hagerty Insurance does include cover for the HRCR Championship rounds if you are insured with them. Your driver should check to make sure. Some insurance companies such as Marsh Commercial, under their Rally Guard Scheme, and Reis Motorsport Insurance schemes allow competitors to take out third party cover for the duration of the event. If you want to use the scheme then check in the event Regulations to see which company they are using and apply in good time via the organisers.

2.3. Vehicle Paperwork

The minimum paperwork you will require for Historic events are a current MOT (if required as cars with historic status on their V5 aren't required by the DLVA to hold a current MOT, however many still have current MOTs), confirmation from the DVLA that your vehicle is taxed, even if no fee is required to be paid due to its age/historic status, and a V5 logbook, which is required to verify the actual age of the vehicle. This is particularly true if your car is registered at or about the change-over point for age categories in the event. Remember also that a manufacturing roll over period applies. This means *"a car will be dated by the specification presented and not necessarily by the date of build or registration" (R19.1).* For example, if your car was registered in say 1982, but was in fact built in 1981, provided it is still built to that original specification then it may be categorised as a Category 3 i.e pre 31/12/81 car.

Typical examples are shown below

Category 1 (to 31/12/1967)	Category 2 (1968-74)	Category 3 (1975-81)	Category 4a (1982-85)	Category 4b (1986-1990)

However if you have plans to move onto bigger events, the car's eligibility will be checked. This is to ensure that the car is prepared to a standard consistent with its age and type. The MSUK issue identity papers for a car. These identify the specific vehicle with all its major components identified. Before validating the papers the MSUK will verify the state of preparation with a marque expert. These papers are only required for larger events but can be a worthwhile investment. You should talk to the MSUK if you want to obtain a set of papers, but it is not generally required for HRCR Championship events.

2.4. Event Documentation

All events issue a set of documentation, which define the rules and information by which the event is run. The main regulations are contained in the MSUK Motorsport Yearbook (see below) but these will be augmented by the Supplementary Regulations ('the Regs'), Final Instructions ('finals'), Competitor Bulletins etc. which are issued by the organisers to clarify or refine the normal regulations of the MSUK. You should read (several times) and memorise these documents - even the most experienced can be caught out by some wrinkle in the Regs which they have failed to spot.

You will also need the right maps i.e. the maps specified in the regulations at the edition specified - **Never** use old maps as rally navigation relies on specific details on the maps which may change between editions. Organisers have been known to exploit the differences and together with revised junction layouts and new roads, it is very easy to get lost or confused. All rallies use the Ordnance Survey 1:50000 Landranger series maps in the pink covers. Make sure you have the correct maps –double check with Organisers before leaving home!

2.5. Other Useful Paperwork

The MSUK Competitors' Yearbook, 'The Blue Book' - which contains every regulation you ever wanted to know about motorsport and several thousand you didn't! This is available to review and download on the MSUK website "Resource Centre" but you may get a free hard back copy if you ask.

Average Speed Tables - This is a convenient book of tables detailing times for given distances at different speeds; invaluable for accurate results on regularity sections but more of this anon. You can either produce your own or buy them from a reputable supplier e.g Don Barrow Rally Navigation Equipment.

3. Car and Crew Preparation

3.1. The Car

Road rallying can be done in a 'bog' standard car. Therefore provided the car is sound, you need only ensure that it is neat and tidy with everything stowed properly. At the start of each event your car will be scrutineered. Primarily this is to ensure the safety of the car. Scrutineers are impressed by presentation and take a dim view of heavy lumps of metal e.g. spare wheels, tool kits etc. being allowed unrestrained mobility within the car! In general any modifications which increase your safety are acceptable e.g. roll cages, better seats and harnesses, fire extinguishers and safety cut-outs. Items, which are also generally considered essential, are a Hazard warning triangle and a first aid kit.

If you have decided to 'prepare' a car for events, you should become intimately acquainted with the technical regulations in the **Blue Book** if you wish to avoid disappointment at scrutineering. This only really applies when you want to go Stage Rallying as a whole host of additional safety regulations apply. A long chat with an experienced competitor is also a good idea. Perhaps the oldest cliché in motorsport is that 'to finish first, first you must finish' - therefore think about reliability before performance in the first instance.

At the end of this guide is an aid-memoire of things to be aware of when preparing your car and entering an event. It is not necessarily a complete list, but it identifies items you will need to be aware of in order to pass the noise test, Scrutineering and Signing-On.

3.2. The 'Office'

Let's get things straight from the start, no matter what the driver thinks; rally cars are controlled from the left hand seat (unless your car is from some foreign enclave!) Your driver may have been pipped for the "works' drive by Roger Clark or Timo Makinen but neither of them would have won anything without a Tony Mason or Henry Liddon. YOU the navigator are the boss and as such your office should reflect this! **So make sure that you are comfortable and that you can organise your equipment where you can get at it quickly**. If the car is being 'prepared' get your side of the car sorted to suit you. You will learn by experience what you need, but a good nose around other cars might give you some ideas. In general the minimum equipment you will need will be some form of map light - though even this may be unnecessary for daytime events and some peripatetic navigators of my acquaintance incorporate this on their map boards. For Historic events some form of trip meter is essential - the one fitted to the car will do initially (so tell the driver to reconnect it and blow the limited mileage insurance!) As you get more advanced you may want to move unto specialised equipment such as HALDA Tripmasters and Speedpilots. These are simply more accurate instruments with some reset and calibration features. Often this equipment is ludicrously expensive so alternative cheaper 'electronic' equipment will generally be acceptable for most events providing it only does distance measuring functions. You can obtain such equipment from Brantz, Terratrip and Autostorica. On the HRCR Clubmans Road Rally Championship events only instruments using on board vehicle speed sensors and that cannot display average speed are permitted, so be careful when choosing equipment. Distance and time may be displayed in the same unit.

3.3. The Man (or Woman) in the 'Hot Seat'

The navigator's role is to keep the car heading in the right direction, on time and to inform the driver of any upcoming features he needs to be aware of. We have all sat in the back seat of some lunatic's car, hurtling down some country lane, whilst the chap in the left hand seat witters some incomprehensible stream of gibberish which comes to an abrupt halt as the world goes spinning sideways and upside down. At which point we rewind the video to look at it all again! Pace notes are an extreme form of the navigator's art and we are a long way from that here. However keeping the driver informed is still important, as he won't thank you for not telling him about the left-hand bend into hump back bridge that has just wiped the exhaust off.... It's also your job to tell him about Quiet Zones, or standing Give Ways etc. If you don't and the driver continues in ignorance (their usual state anyway), it will be your fault if you pick up penalties or at worst are excluded from the event. Therefore try to concentrate, stay calm and organised, don't be rushed into making snap decisions because if you get agitated so will the driver and a red mist in the right hand seat can be entertaining but is usually a short-lived pleasure (?)

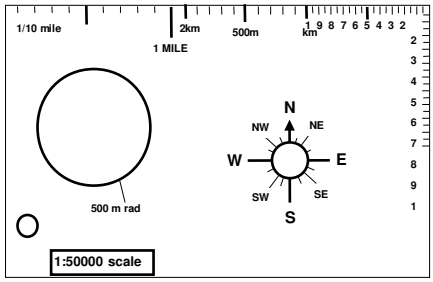
3.4. The Tools of the Trade

The tools you will need are relatively few but a little preparation goes a long way.

Maps: Having obtained the correct maps for the event (identified by the version and date of issue), it is useful to spend a little time beforehand applying some judicious highlighting to it. Fluorescent highlighters are just the job for highlighting spot heights (printed in black adjacent to spots on the roads) and other map features. The grid square numbers (printed in pale blue) can be overwritten with a heavy black pen (use waterproof ink - soggy maps are bad enough without abstract art designs all over them). These numbers are often used in the navigation for an event and being able to locate them easily is a distinct advantage. Map marking used to be quite an art form in years gone by when experienced navigators would annotate their maps with additional information about particular features such as, bends and junctions which were not as map, yumps, dips etc. When rallies relied principally on using 'white' roads i.e. unclassified, knowing which 'whites' were 'goers' and under what conditions - i.e. 'downhill only' or 'not if wet'- was a distinct advantage.

Nowadays it is **ILLEGAL (under** MSUK **regulations)** to add information to your maps, other than that given to you by the organisers. You can only highlight information already on it. Some events will check your maps prior to and during the event, to ensure that you are complying with this regulation.

Romers:- A romer, like the one illustrated, is your basic means of putting some parts of the route on the map. Its main function is to allow you to plot map references accurately, but more of that anon. You can usually buy these at camping and outdoor leisure pursuit centres, or from specialised dealers like Demon Tweeks, or Don Barrow



Map board: In order to rest your map on! A sturdy piece of cardboard is recommended as it will fold up in case of an accident but a largish clipboard will do.

Magnifying Glass – Ideally with a backlight, the most sophisticated being the Don Barrow Poti.

Head Torch – Very useful in heavily wooded areas even in daylight.

Clip Board 1: You will please every marshal en-route if your time cards are firmly attached to a clipboard. It makes writing times and signatures so much easier.

Clip Board 2: For your Road-book and/or Test-book, Ideal time slips etc

Clipboard 3: For your speed tables and/or Final Instructions

Pencils etc: A selection of soft pencils (2B or softer), rubber, sharpener, pens etc.

Watches: One watch/stopwatch will suffice but two is ideal, usually one set to time of day (normally BBC time), one for use as a stopwatch. Digital ones are more accurate and easier to use - Mechanical watches add period flavour to the car.

Sweeties: Always a good idea for keeping drivers and marshals happy!

Travel Sickness Pills: Definitely a good idea if you're remotely prone to travel sickness and it's not your car!

Sick Bags: AS ABOVE

A sense of humour: Vital - don't leave home without it.

There are loads of other bits and pieces that may or may not be useful. Most navigators end up lugging around a holdall containing all sorts of goodies which they never use but thought it was a good idea to have just in case. Some drivers are the same, which is why some cars are really competitive service barges.

4. The Event

4.1. A Competitive Outline

Historic road rallies are composed of a number of parts. Typically a one-day event consists of about 150 road miles. During the week prior to the event the Organisers will issue **"Final Instructions"** outlining the programme for the event, confirming various supplementary regulations and Officials, and hopefully map editions, while also enclosing the entry list and allocate your competition number. Read all these very carefully

as there may be route and or Test information which will be required during the event. These instructions will detail the preliminary activities of noise check, scrutineering and documentation prior to the event.

The road sections will be broken down into competitive and link sections. In the terminology of the 'Blue Book', link sections will be 'Neutral' or 'Transport' sections and are there to get competitors between the competitive sections. Competitive sections are either 'Standard' or 'Regularity' sections and are the main navigational bits of the event. 'Standard' sections are uncommon on daylight events as tighter restrictions apply as to the roads which can be used, and the organisers have to perform a lot more public relations work with the home owners' en-route. Therefore the bulk of the competitive route will be run as 'Regularity' sections which require the competitors to maintain set average speeds of up to 30 mph. The tricky bit to regularities is finding the correct route whilst sticking as closely as possible to the required speeds.

The organisers will monitor your progress along the route by means of manned 'controls'. A control is a point on the route that you are required to visit. These can either be Intermediate Time Controls (ITC) where your time of arrival will be recorded for the purpose of calculating penalties or Passage Controls (PC) where only the fact that you visited the control will be recorded. Typically, a control is preceded by a 'control board' at the side of the road. Passage Controls may be replaced by Passage Checks. Typically these take the form of a 'code board' by the side of the road. You will be required to record the letter(s)/number(s) on the board as proof of passage on the appropriate part of your Time Card, (this must be recorded in INK).

Along the route there will be a number of 'special tests. A special test can take a number of forms but in general will take place off the public road and you will be required to complete the test as fast as possible. The test will be timed at an average speed of 30 mph and no benefit will be gained by completing it any faster than this. That said don't expect to 'clean' many tests!

Organisers make best use of the venues available for tests. Thus you can find tests in car parks, private estates, farm or military roads, wood yards, pumping stations, airfields etc. Tests will vary, according to the venue, from fairly tight manoeuvrability tests to more open faster tests. Tests will always be on non-damaging surfaces, though some may be on the loose or gravel.

The route may also be punctuated by a number of rest halts to allow both vehicle and crew to be fuelled and watered!

4.2. The Day of the Event

4.2.1. The Noise Test

Assuming you, your driver and the car are fit in wind and limb and have found your way to the noise check, the car will be tested to ensure it is under the maximum noise level permitted. You will be asked to rev the engine to 5000 rpm, or ¾ of this, 3750 rpm, if the Chief Scrutineer allows, so make sure the engine is warmed through before entering the noise check. Noise tests are conducted either at 0.5m (98dB(A) maximum) from the exhaust outlet, or at 2.0m (86dB(A) maximum) from the centre of the car.

Most road cars pass easily, provided exhausts etc. are sound. Smooth throttle control on the way up and especially on the way down also helps. Most noise test officials are friendly souls and will only fail you if you are grossly over the limit. You will have the opportunity to take the check again, if you fail the first time, after you have made permanent modifications. Remember also that most events will have a second noise check somewhere en-route (normally just before halfway), so any 'temporary' modifications you do prior to the start will probably have long since blown out of the back by then! Failure at second noise usually means exclusion from the event.

It's also worth noting that the Noise test official often doubles up as a Driving Standards Observer for the event. As such he has the power to exclude you from the event without appeal if he sees you 'Misbehaving'.

You will also come across the same official at many events, so being on friendly terms with him and paying attention to the advice he gives you may get you the benefit of the doubt if your car is marginally on the noisy side.

4.2.2. Scrutineering

The Scrutineer will check the car conforms to the technical regulations for the event. Like the Noise Test official, make friends with your scrutineer and listen to any advice he gives - you never know when you will meet him again and they tend to have long memories... Scrutineers are really there for your benefit and will only fail your car if it is unsafe or contravenes some technical regulation in a major way. At the lower levels of rallying, scrutineers will check your lights, brakes, seat mounts etc. Minor discrepancies may be passed, on the understanding that they are rectified before the next event - don't abuse this latitude!

Technical scrutineering also involves looking under the bonnet and boot and inside the car, so it helps everyone if the car is clean, tidy and well presented. So release all the catches whilst you're waiting in the queue and have all the paperwork available for inspection. This helps speed the whole process.

At higher levels of rallying, scrutineers expect a lot more of the cars and competitors; this is particularly true for stage rallying where all safety systems will be checked for operation.

In addition to technical scrutineering you may have to pass eligibility scrutineering. In this case the scrutineer checks the car for modifications that are not consistent with the age of the car. Again on lower levels of rallying, a gentle suggestion that you change something before next time is the worst you can expect but don't turn up with an 'MGB' engine in your MGA or vented discs all round on your Cortina or you may be disappointed.

As the eligibility scrutineer will get to know your car over the years, its worthwhile consulting him before attempting any modifications that you are unsure about.

All being well, you will pass and can now proceed to the start (do not collect £200) and 'Documentation' or 'Signing on'. If you haven't filled up with petrol, now is a good time - running out in the middle of the first regularity section tests everyone's' patience and carrying spare fuel is 'technically' not permitted.

4.2.3. The "Measured Mile"

Most events will provide a calibration distance against which you can calibrate whatever trip meter you are using to exactly match that used by the Organisers be it an electronic trip-meter or a mechanical Halda. It is essential to make sure you do this accurately, at least twice, and preferably three times to make sure you are "spot-on". Alternatively, if you are using the car's normal odometer, this is essential because it will allow you to compensate for any error which exists between your trip and that of the organisers. This will ultimately mean more accurate regularity performances. The easiest method of compensation is to calculate the average speed table you need to use from the % error in the measured mile and the organisers set speed. Thus if the trip over reads by 10%, you should use the speed table that corresponds to 110% of the organiser's set speed. Equally if the trip under reads, by 10% you should scale the speed down to 90% of the set value.

4.2.4. Signing On

At Signing On the event officials will check your licences, insurance etc. and confirm you have paid your fees, you sign the indemnity sheets, championship registration forms etc. Once completed you can collect whatever information the organisers are going to give you and your real work can begin. Before finding somewhere comfortable and light to go through the information, **check the official notice board for any additional information that may have been posted**. If the start is not co-located with signing-on, check your information pack contains **ALL** the bits of paper it's supposed to before leaving the signing on area. It's a pain to have to drive back from the start to collect your time cards or other vital bits of information. **Of vital importance is "Official Rally Time" make sure you synchronise your watch with this and transfer it to the master clock in your rally car**. Double check this with the clock at MTC1 later when you set off.

4.2.5. Competitors Bulletins

Depending on the event format what information you get at this time can vary a lot. At the very least you will get Time Cards which you should attach firmly to your clip board, some final instructions, damage declaration and some rally plates. Leave the difficult job of sticking these and numbers (if required) on the car to the driver (having told him where to stick them - consult event regulations but usually plates go on boot and bonnet for historic events) as a) it gives them something to do befitting their skills and b) it keeps them out of your hair whilst you have a read of the instructions.

4.2.6. Documentation

In the case of most historic events these are issued in the form of a road book. Contained in here will be information, which you can transfer to your map. This will probably include a list of Black Spots - areas on the map which you MUST NOT enter for the duration of the event on penalty of exclusion and a list of Quiet Zones where you must proceed quietly and avoid any unnecessary disturbance to the local residents. You may also be given a list of Give Ways, which will correspond to junctions where you must stop and give way, but read the Regs carefully. All this information will probably be given to you as map references. You should plot these on your map but be aware that the route will not necessarily traverse all the QZs and GWs given!

You will also be given some route information for the non-competitive sections (technically no competitive route information can be issued prior to your start time). This will probably be in the form of a 'Tulip' road book detailing the route to be taken during parts of the event but additional navigation types may also be used. This combined with the special tests information allows you to plot some of the route out on the map and with the timing information contained on your Time Cards allows you to work out when you should be at given

locations. You should get as much information on the map as possible. Usually it is easier to navigate by the road book in built up areas and the map in rural areas but it's useful to have both available.

Some organisers prefer not to issue road books. Instead they will issue the non-competitive route information as map references which you will be required to plot onto your maps. If this sounds a bit mean, they will usually post a marked map in the signing on area to allow you to check (or copy!) your route. It's worthwhile checking your plotted route with other (reliable!) navigators. The test diagrams and locations will be issued in a suitably abbreviated road book.

Having done this you will find that there are gaps in the plotted route. These will correspond to the Regularity Sections, for which route cards will be issued during the event. You will be required to navigate these sections by 'PLOT and BASH' i.e. as you go. You may be given some of this route information as you leave the start or at other points along the route. Try to solve the navigation and fill in the blank bits of route before you get to the start of the section - you will find you should have some time at Special Test starts and with practice you will be able to plot 'on the move' during link sections. This will make the regularity time keeping a lot easier. If you think plotting during the link sections is hard, each part of the 150 mile competitive route of night navigational rallies is handed out at the start of each short section, this is real 'Plot and Bash' with the best navigators able to plot on the move at competitive speeds, at night, whilst still keeping the car on the right roads and maintaining the required schedule.

By now your driver, who having stuck the plates on and disappeared for refreshments and general chit-chat with other drivers, will be fretting again. So if you have finished all you can, either give him the road book so he can peruse the Special Test diagrams or tell him to clean the windscreen/lights etc. but don't let him do unnecessary tinkering with mechanical bits and bobs. **You should check your watch against the official watches and check the official notice board once more for any route amendments or other instructions**. Then have one final read of the regulations etc. - pay particular attention to the penalties as you may have to make some decisions later about the best time and place to cut part of the route if you run into time difficulties. Finally sit back and wait for the competitors' briefing, which you should attend to clarify any queries you or anyone else may have. Make sure you and your driver have seen examples of the official control and passage check boards to be used on route so that both of you will recognise them later.

4.2.7. Control Procedure

At the various controls en-route you will be required to stop to have signatures and times recorded on your time card, and may have an electronic device "chipped". The control procedure may vary from event to event so you should make sure you know what to do. Ask at the Competitors' briefing, normally held about half an hour before first car away, if you are unsure. Intermediate Regularity Time Controls (IRTCs) will probably differ from other controls in that stopping within sight of the control may be penalised. It is **YOUR** responsibility to ensure the details recorded by the Marshal are correct and that he signs the card. If you leave the control and find it is incorrect you must not reverse back into the control but get out and walk. In any case, you lose little time by checking before leaving. Try to get into the habit of recording your times and distances on a pad. Time Cards are collected periodically during a rally and your own record will be useful at the finish.

The Liege clocks are becoming more popular now. These use a chip attached to your timecard which the marshal will use at each control to record your time. **Get used to presenting your Timecard so it is easy for the marshal to download the time from the chip.** Always make sure you check the marshal gives you the correct time and that it is written clearly on the Time Card. Remember, if there is any dispute about your times in the results it will be the written record on your Time Card which is taken as definitive.

There may be unmanned passage checks around the route. These take the form of Code Boards with one or more letters to be recorded in the appropriate slot on your Time Card. Write legibly **in INK** and tell your driver to keep his eyes peeled for them as you may well have your head down when you pass them.

4.2.8. 5-4-3-2-1 GO!

Make sure you know your start time, as being late at the start is embarrassing. It is useful to identify the cars starting just ahead of you so you can keep an eye on where you need to slot into the start queue. Having been signed out by the marshal, you can begin navigating around the route.

5 Navigation

There are many ways of conveying route information to the navigator. Almost all are related to information as presented on the map. Common to all forms of definition is that it is explicit and unique i.e. there is only one correct route, and unless otherwise stated you should take the shortest available route that complies with the instructions. It is normal to specify whether the route includes 'Coloured Roads Only' (CRO) i.e. the route only traverses roads coloured yellow, brown, red, green or blue on the map - 'White' roads and junctions with white roads can be ignored. Alternatively the instructions may indicate May Use Whites (MUW). Whites are roads

without any colour. Finding the controls is not the only problem you have. You must approach and depart from the controls in the right direction. Wrong Direction (WD) of approach (and on some events -departure) can be penalised as heavily as not visiting the control at all. As a general rule the route is not allowed to use the same piece of road twice except for gaining access to test venues, petrol halts etc. Finally remember the road may not look like the map when you get there. Most rally organisers have their favourite 'Not As Map' (NAM) roads.

The most common methods of route instruction presentation (tulips, herringbones, spot heights, grid lines, grid references, map traces etc.) used on events of this type are explained in the **Navigation Handbook** which has been produced for the **HRCR** so they are not repeated here**.**

5.1 Plot and Bash Navigation Technique

Having familiarised ourselves with some of the methods of route instruction presentation, what we might consider now is how you tackle it when it is thrust through the window at the start of a section. This is commonly known as **Plot and Bash**, as opposed to **Pre-Plot** which is when you are given the instructions earlier and have time to plot the route on the map before starting the section. However difficult it may look, you can always go to the next junction. You should instruct your driver on how to drive gently up the road. You should read the handout carefully and then read it again. There may be more information than you think. It will usually contain the time allowed and distance to be covered together with the navigation to be solved. By the time you get to the first junction you may have worked out which direction to go or you may arrive there just as somebody else who has sorted out the navigation and is just setting off again. But beware of blindly following another car, he may know where he is going but he may not...Even if you are following, keep trying to make the navigation fit and keep an eye on where you are going otherwise you may end up lost off route which is a lot worse than being baffled on route! Alternatively you can pull up at the junction (don't obstruct it) and try and solve the handout. Whichever, it's better than cluttering up the control area. With practise you will be able to plot on the move, always keeping at least a junction or two ahead of the driver.

If you are totally baffled by the handout it may even be worth getting your driver's opinion - miracles do happen and he may see how to do it or provide the clue you need to solve it. As a last resort some intuitive guess work might not go a miss, you may stumble on a code board which will give you a clue that you are going in the right direction. Don't discard handouts, keep them safe and easily located - you never know when they may be needed again. Some organisers engineer ways of reusing previous handouts or include additional information to be used later.

6. Timing

Rallies are usually timed using BBC time. At each time control the current time of day is recorded. From this, given the required average speed for the section the penalties can be computed. Thus if a five mile section is timed at 30mph, you must cover the section in 10 minutes. With the exception of some regularity sections and special tests all timing will normally be to the nearest minute i.e. on the above section you actually have 10 min 59 sec to complete it penalty free.

6.1. Road Rally Timing

6.1.1. Standard Time

The basic method of timing for road rallies is known as Scheduled Timing. At specified time controls the organisers will allocate a time of day at which a notional Car'0' will arrive. This constitutes the event schedule and this time is known as Standard Time. Standard, Schedule and Due Time mainly applies to the outline of the event particularly Main Time Controls and Transport Time Controls which may be Regularity Starts.

6.1.2. Scheduled Time

Each competitor can calculate their Scheduled Time at any control by adding their start number in minutes to the Standard Time given for the control. Thus if the time for Car '0' at a control is given as 9:55 and your car number is 25, your Scheduled Time is 9:55 + 25 = 10:20.

You will have a maximum permitted lateness at time controls - normally set at 30 minutes - i.e. you must visit controls within 30 minutes of your Scheduled time otherwise you are deemed Over Time Limit **(OTL)** and will be penalised accordingly. This may be simply a Fail or large time penalty at normal time controls or may result in exclusion at Main Time Controls. If you start running very late with respect to your schedule you should 'cut and run' to a control on the route you can find in good time. By cutting out part of the route you can recover time and get back on schedule. Better to get a few Fails at normal Time Controls than be excluded for being **OTL** at a Main Control. Equally, cutting part of a section may result in you missing a passage control or check (normally penalised less heavily than missing a time control) but allow you to make the time control with fewer penalties.

In general you should never book into a control before your Scheduled Time as this is usually heavily penalised. On occasions this rule will be relaxed in order to speed the running of the event but you should be quite sure you have been instructed to do this by an event official.

6.1.3. Due Time

Your Due Time at a control can be calculated by adding the time permitted in the schedule between two successive controls to your arrival time at the first of these controls. This time will differ from your Scheduled time by the amount of lateness you have already incurred. So if you were running 5 minutes late at the control above i.e. you had booked in at 10:25 and the time allowed for the next section was 10 minutes - your Due Time at the next control would be 10:25 +10 = 10:35 and your current Lateness would be 5 minutes.

The situation can be complicated (you mean it's not already!) by the concepts of Make-up, Delay Allowance and what happens if you miss controls out.

The general principle is that you should never be penalised twice for a mistake. Thus if you miss time control(s) you will be penalised accordingly. However, you may then re-join the route at the next control at any time between your Scheduled Time and OTL (Scheduled time + 30 minutes) without further penalty. Therefore if you visited the above control at 10:35, miss out the next control and visit the one after, and the combined section times are 15 minutes, you may book in any time between your Scheduled Time 10:45 and 11:15 without further penalty.

If you are running late, it may be possible to recover your lateness by 'making-up time'. Making-up is only allowed where indicated by the organisers and only then on Standard and Transport sections. The amount of make-up is usually indicated on the time cards but will not exceed the '$^3/_4$ rule'. This is a complex rule detailed in the Blue Book but basically states that for sections over 4 miles long you must not cover the section in less than $^3/_4$ of the allocated time for the section (ignoring fractions of minutes) i.e. for a nominal 9, 10, 11 or 12 minute section the maximum available make up will be 3 minutes, for a 13, 14, 15, or 16 minute section the maximum make up is 4 minutes etc. There are often severe penalties for breaking the $^3/_4$ rule so you should be clear you know what you are doing before attempting to use it to make time up.

A further complication is Delay Allowance. This can be granted by the organisers to cover situations when you have been unavoidably detained through a fault in the organisation such as a delay in starting a test. You will not get delay allowance retrospectively or from problems encountered on road sections. A delay allowance can be considered as delaying your Scheduled Time, i.e. if you have received 5 minutes delay allowance and your scheduled time was 10:20, your scheduled time becomes 10:25. Therefore once claimed delay allowance should not be made-up until the next Main Time Control where all lateness and Delay Allowances are cancelled.

6.2. Regularity Timing

On timed to second Regularity Sections you are penalised on the basis of seconds rather than minutes, so you must be more accurate - which is where speed tables and accurate trip meters come in. Also given that the locations of the Intermediate Time Controls are not published, you must maintain the set average speed as closely as possible. Note also that the penalties for being early may be harsher than being late. On some sections there may be speed changes within the section. However all timing is done from control to control, therefore at each Intermediate Regularity Control you may be told how far into the section you are and how long you should have taken. More usually now you will see a board at the End of the Regularity section (EOR) with a list of ideal times and distances.

6.3. Normal Regularity Technique

The basic procedure for regularities is as follows though many people work out their own methods based on the number of watches, trip-meters etc. that they have available. It may sound a little daunting but with practice and concentration it can be done!

- At the start of the regularity zero both your trip and stopwatch.
- Start the watch as the marshal tells you to GO.
- As you proceed, at every tenth of a mile check the elapsed time on the stopwatch with the ideal time for the set speed in the speed tables.
- If the elapsed time is greater than the ideal you are running late and should speed up.
- If the elapsed time is less than the ideal you are running early and should slow down.
- Try to get into the rhythm and avoid letting large errors build up. Drivers need to develop a smooth approach to driving regularities and need to find a comfortable revs/gear combination to drive at the low speeds required, and how to get back on time after a delay.

When an Intermediate Time Control comes into view - Don't Panic!

- Any time error on that leg is now history and you should forget it, cruise into the control and take the time the marshal gives you. The driver needs to develop the habit of stopping in a very deliberate manner, not drift in and glide to a stop somewhere.
- Stop and restart your stopwatch as soon as you stop at the control, and make a note of the time. Ideally you should restart it at the precise moment that the marshal presses the button on his clock.
- Present your Time Card to the marshal, and check it is completed correctly and legibly. It is your responsibility. If you are given an ideal time and distance slip for the leg then keep this safe for checking your penalties later. Often the portion of the route between ITCs is referred to as a "leg".
- Note down your trip reading then zero the trip. **(Do not zero during a Jogularity!)**
- Proceed into the next leg at a slightly higher speed than demanded to catch up the time lost at the control. The driver needs to practice getting back on time as safely, quietly and quickly as possible. Remember controls on the public road must be at least two miles apart. (Beware Organisers may place ITCs on private land at much closer distance than this).
- Typically a competitor is stationary at an IRTC for 20-40 seconds.

Where timing is to the minute you have a one minute window within which to arrive at the control. It is therefore a good idea to aim to run 20-30 seconds late to ensure you are well into your allotted minute and to avoid incurring penalties for arriving early at the control. Remember though that timing for the next leg will have commenced from the start of the minute at which you arrived at the control - anything up to 59 seconds before your actual arrival time.

Speed changes can occur during each section. If they occur at the intermediate controls you just have to select the appropriate speed table for the section.

However speed changes can occur between controls.

These can be defined at a set distance – e.g. "After 4.6 miles change to 26 mph", or at a set time -"After 3 minutes 52 seconds change speed to 27 mph" or at a defined point - "As you cross the railway change speed to 26 mph".

An example set of instructions for a regularity section could be as follows:

Start speed: 28 mph

After 4.6 miles change speed to 26 mph

After a further 3 minutes 53 seconds change speed to 27 mph

As you cross the railway change speed to 26 mph

The simplest solution is to be exactly on time everywhere so that you can simultaneously reset stopwatch and trip as you arrive at the speed change point! For lesser mortals it is advisable to have a strategy, which copes with being baulked on the route or wrong slotting etc.

This involves use of a watch accurately set to BBC time.

Where you are told the time or distance (use the speed tables to calculate a time) to a speed change you can calculate the exact BBC time at which the change should occur by adding the required elapsed time to the time you arrived at the previous control. You may have to work out the distance to the speed change using the information you recorded at the previous control. Alternatively, some of the recent electronic clocks like the Brantz will have an intermediate time facility which will help tremendously.

6.3.1 As you approach the speed change point zero your stopwatch and observe the BBC time and the trip meter. When the trip reaches the required distance, reset it and when the watch reads the calculated BBC time restart your stopwatch. These actions may not be simultaneous but you will carry forward the outstanding time error at the speed change and can work to reduce it at the new speed.

6.3.2 For speed changes at points not defined by distance or time, you cannot prepare in advance. When you reach the point you should read the trip and then reset it. You can now calculate how long you should have taken to reach the speed change and the equivalent BBC time. A rapid calculation will allow you to reset and start your stopwatch exactly 1 minute later, and continue on the new speed table mentally adding one minute to the stopwatch every time you read it.

6.3.3 If you forget to reset your stopwatch or trip at a control, you can use a similar procedure to the above to recover the situation by resetting the watch 1 minute after the arrival time at the previous control or resetting the trip 1 mile after the control and then mentally compensating the minute or mile each time you check the speed table.

6.3.4 All the above was originally written by Mark Aylward and Andy Gibson, but since then technology has advanced and now there are several different manufacturers making trip meters and clocks to replace the two stopwatches and master clock. The ones I am familiar with, and the present supporter of the HRCR

championship, are manufactured by Brantz. The trip has a number of functions including total distance and intermediate distance with additional facilities to adjust distance and add and subtract mileages. The clocks have a similar functions with GMT/BST time and intermediate stop watch functions with several options available depending on the types of Regularity Section being traversed; more of these later. Remember only consider equipment which does not compute or display average speed.

6.4. Alternative Regularity Approaches

You may encounter different forms of regularity section. Whilst the basic principles are the same the presentation of information may require a different approach.

6.4.1. Jogularity

Jogularity is a system developed by John Brown who has been behind many innovative rally organisation techniques since the sixties. Developed to support 'LE JOG '- the Land's End to John O'Groats classic reliability trial - and adopted by a couple of major Historic road rallies including the Devon Classic and many of the HRCR Clubmans Road Rally Championship events. Jogularity is intended to allow novice competitors without the benefits of accurate trip-meters etc. to do regularities reasonably accurately.

The basic system provides the navigator with a route card, which contains landmarks along the desired route.

Typically the information will be tabulated as follows:

Reference Number	Intermediate Distance - Miles	Total Distance - Miles	Description	Set Average Speed	Intermediate Time M:S	Total Time H:M:S
25	0.50	5.60	Cattle grid	30	1:00	0:15:24
26	0.70	6.10	Junction (Drover's Arms)	30	1:24	0:16:48
27	0.25	6.35	Gate - narrows onto gravel	15	0:30	0:17:28
28	1.00	7.35	Flag pole - onto tarmac	30	4:00	0:21:28

Where:

Reference Number is the unique number for that landmark.

Intermediate Distance is the distance between consecutive landmarks

Total Distance is total mileage from the start of the 'Jogularity'

Description describes the landmark

Set Average Speed indicates the speed to be used from this point onwards.

Intermediate Time is the time taken at the set speed between consecutive rows

Total Time is the total time elapsed at the set speeds from the start of the Jogularity

When using this form of Jogularity, you may be supplied with the navigation in some other form (map refs, spot heights etc). However Intermediate Time Controls will only be located at one of the indicated landmarks. Therefore by cross referencing your plotted route against the table you can double check your progress both in terms of route and time and keep an eye out for likely control locations! When you arrive at an IRTC you must remember to add (if late) or subtract (if early) the error at the IRTC from the total elapsed time in order to keep an accurate cross check. **Do not zero your trip or clock/stopwatch during a Jogularity** as you need to follow the overall time schedule and distance table. Some modern clock/stopwatches have a facility to "hold" the time at an IRTC so you can make a note of it and continue.

Sometimes the IRTCs are not at the points identified in the Jogularity instructions, but usually the Organisers will point this out.

A variation on this theme includes the navigation element of the Jogularity within the table. Thus:

Reference Number	Intermediate Distance - Miles	Total Distance - Miles	Description	Set Average Speed	Intermediate Time M:S	Total Time H:M:S
25	0.50	5.60	Cattle grid **Straight on**	30	1:00	0:15:24
26	0.70	6.10	Junction (Drover's Arms) **Turn Left**	30	1:24	0:16:48
27	0.25	6.35	Gate - narrows **Turn Right** onto gravel	15	0:30	0:17:28
28	1.00	7.35	Flag pole - **Straight on** onto tarmac	30	4:00	0:21:28

This form makes it harder to plot a route, as the instructions rely on specific distances on the road - very tricky if junctions are close together! You must therefore rely more on the Jogularity table though plotting your route on the map as you go along is a wise precaution against getting totally lost….

Note the closeness of the last three instructions below which could be a "Long Way Round" a grass triangle or similar. Always highlight the junctions which are very close together so you can warn your driver a tricky piece is coming up.

AR – all roads			**Jogularity/Deeliarity**		
Int. miles	Cumm. miles	Information	mph	Inter time	Total time
0.00	0.00	RS8	23		
0.05	0.05	**Junc**: Turn to gliding club		0.08	0.08
0.23	0.30	Byway on L		0.39	0.47
0.29	0.59	Green box on L		0.45	1.32
0.42	1.01	**Junc**: turn to…		1.06	2.38
0.02	1003	…footpath sign on R		0.03	2.41
Instructions removed to demonstrate items in **bold** below					
0.23	3.20	Footpaths L+R		0.35	8.30
0.42	3.62	Footpath on R	18	1.06	9.36
0.03	3.65	**Junc**: do not pass Hall		0.06	9.42
0.02	3.67	**Junc**: go R on grass		1.05	9.46
0.02	3.69	**Junc**: straight on		0.04	9.50

A further, perhaps even vaguer way of describing the route, is via a similar table referred to as a Deeliarity, an extract of one is shown below, this is even more difficult to plot on the map, especially when it goes off the public road. This Deeliarity has a separate speed table also shown. Note the Xroads at 2.09 was a gravel track and field entrance so beware.

AR	**Instruction**	**Deeliarity**
	RS 5	
	Junction take the road to Stanton Lees	
	Junction take the road to Stanton in Peak	
	Do not go to Bakewell	
	Turn L to follow Uppertown Lane	
	Junction Turn R to go through	50 signs
	Junction turn to pass	deer sign
	Junction Turn to pass	7.5 ton sign
	T-junction Turn R	
	Quiet through Elton Village	
	Turn L opposite church	
	Keep R	
	Turn R at X-roads	
	Turn R into Test 6	
	At exit of test re-start clock and zero trip!	
	Turn L as you rejoin public road	
	Keep R	
2.09 miles	Turn L at X-roads	
	T-junction Turn R	
	Straight-on to EoR	

Speed and time schedule						
Distance	Speed	Time		Distance	Speed	Time
From Reg Start				Speed table after Test 6		
0	23	0.00		0.8	22	2.11
0.2		0.31		1.0		2.44
0.4		1.03		1.2		3.16
0.6		1.34		1.4		3.49
0.8		2.05		1.6		4.22
1.0		2.37		1.8		4.55
1.2		3.08		2.0		5.27
1.4		3.39		2.2		6.00
1.6		4.10		2.4		6.33
Rest removed to show detail after Test.						

7. Special Tests

Special tests are where the driver "comes into his own". It's his chance to make a mark and win or lose the event. However the navigator need not be the proverbial sack of potatoes. Many cars are not designed with auto-testing in mind and many drivers have memories like sieves and Mark Thatcher's sense of direction! Don't leave the tests completely up to the driver. In fact is essential that Driver and Navigator work together to come up with a set of "pace-notes" for negotiating tests accurately if you want to set competitive times. Pay attention and remember exactly where you are on the test so that you can point them in the right direction if need be. Also you may be able to see parts of the car the driver cannot. So tell him if he's about to flatten a line of cones.

It's also worth remembering that the test diagrams you will be supplied with can be misleading. They are generally 'not to scale' - so distances between various elements may be much longer or shorter than they appear on the diagram! Special tests, which use estate roads, can be particularly misleading, as not all the test is usually visible from the start. As the 'bogie' time (the time on which penalties are based) for the test is set at a nominal 30mph average you can gauge its length/complexity by the bogie time i.e. a 60 second bogie time = a half mile long test!

8. Finishing Remarks

If you found your way around most of the route, avoided most of the cones on the tests and not come to blows with each other you've probably had a successful day. Rallying is an odd sport because you have little contact with your competitors and how you are faring with respect to them. So the important thing to remember is to press on regardless. However bad a day you think you're having there may be others who are having a worse one and you may be pleasantly surprised at the finish. At the finish make sure you have completed your paperwork and handed over all your Time Cards, Damage Declarations (**important - you can be fined for not completing and handing in your 'damage declaration'**) etc.

Your own recorded times etc. will now be invaluable as you can check that the organisers' have done their sums correctly. However they are only human and will already have had a hard and stressful day. Mistakes do occur. And if you think you have found one, politely enquire - the production of results is an onerous and thankless task and is not helped by people getting bent out of shape over an incorrect 1 minute penalty that drops you from 44th to 45th overall….

9. Conclusions

This is but a brief guide to getting started. No guide would ever be complete as rally organisers are always looking for new ways of presenting navigation, timing etc. so there is no substitute for practice and experience. The best way to gain experience and practise is to do events. The best events to start on are local motor club 12 car navigational exercises, Auto-solos and auto-tests.

The '12 cars' are run on weekday evenings starting 7-30 to 8-00 and lasting about 2 hours during the winter months. Usually about 50 miles long they allow you to learn all the intricacies of rally navigation and timing in a low cost and friendly environment. In general they will be run using 'plot'n'bash Standard Sections (i.e. no regularity) with up to 8 or 9 controls. As the events are primarily aimed at novices, plenty of information allowing you to recover the route is usually provided. More recently some motor clubs have started running 12 car Regularity Runs on a Sunday morning which are also very worthwhile entering.

Club auto-tests allow the driver to practice their special test skills without the benefit of somebody telling them where to go! In addition the new Production Car Autotests allow a passenger to assist the driver. These events are normally held on summer evenings and weekends and again are organised with the aim of being novice and car friendly i.e. the tests are not too long or intricate, usually do not require too much reversing. Smooth grass fields are often used which allows cars to be thrown and slid around whilst imposing far less stress on the mechanical components than tarmac or concrete surfaces.

Targa rallies are another good event to enter as they are based purely on test performance and the tests are very similar in layout to those used in the HRCR Championship events.

Entry and Scrutineering items of note. (as at 2022)		
Mandatory	Reg'n #	Comments
Sound Testing (Noise Test)	R19.6.3	At 5000rpm (or 3750 rpm if Scrutineer allows!)
	J5.16	98 dB(A) @ 0.5m
Seats	J 5.3.2	Fixed
Harness	K 2.1	4 point has 4 fixings. 3 pt must be ECE "E" marked
Interior Trim	R18.1.4	Majority fitted
Brake balance	R19.7.6	Must not be adjustable by competitors when seated
Hydraulic handbrake	R19.7.7	Max 50^0 from horizontal + mechanical system
Body Colour	R18.1.2	Manufacturers original scheme/one colour
Advertising/sponsorship decals	R18.6.6	advertising decal max size 1250 sq cm
Registration plate	R 18.6.4	Display registration plate
Bumpers fitted	R 19.1.1	Except Cat 1 sports cars.
Exhaust	J5.16.2	Max 15 cm protruding from rear bodywork
Battery	J5.14.5	Yellow earth and secure
Lights	R18.5.8	All working – no HID
Engine	R 19.6.2	Air filter fitted
Wheels	R19.7.2	Max 6" wide + 2.5" spacer
Tyres	R18.4	Must fit within standard body
Tyres	R19.7.5	65 profile minimum
Tyres	R18.4.2	Tyres must comply with L3 – 3.2.1
Body damage	R15.1.4	If any before event – it may be noted.
Waivers (apply at time of entry)	R19.5.1	Cat2-4b – re # cyls, #carbs, #camshafts.
V5 log book	R 5.1.3	Currently registered and taxed
Mo T	R18	Cars over 40 years old exempt. (R46.1.2)
Insurance	R5.1.2	Event cover (D12.3.6)
MSUK & Club membership	R5.1.2	Show cards at Signing-On
Recommended		
Spill Kit	R 19.8.1	Small
First Aid Kit & Hi Viz clothing	R7.2.8	Vest or jacket
Event Regulations		
Trip meter		No average speed display
SOS/OK board		Advising following competitors
Must not have		
Hub caps	J5.8.3	Prohibited
Intercom	R7.2.3	Head-sets prohibited
In car Camera	R7.2.9	In car cameras prohibited
GPS		Event Supplementary Regulations

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