TYPES OF NAVIGATION

ADVANCED & EXPERT EVENTS

HERO Route Information Formats

For Advanced (Red) & Expert (Black) Events

These pages give a brief overview of the principles of how the route information will be presented on the more difficult HERO events. This covers the Base Route book, Test Diagrams plus the Regularity and Evening TC section handouts. Not all the types of navigation are used on each event, so please take note if an event is specified.

Base Books

The base books will cover the non-competitive "link" sections between the regularities, tests, time control (TC) sections and halts.

Route Book *(RAC Rally of the Tests)*

The Route Book will take the form of a descriptive route book giving the direction of travel, signpost direction if any applicable and any other information to help follow the correct route.

Map Book *(Le Jog)*

This will take the form of an A3 pre-plotted Map Book, showing the route to take between each competitive section, which in some cases maybe left blank for you to plot yourself.

Tulip Book *(HERO Challenge)*

The Tulip Book will take the form of a "tulip" roadbook. A tulip shows a simple aerial image of each junction with a ball from where you are travelling and an arrow for the direction to travel. These will usually be with instructions such as signposts or a description to help follow the correct route.

Test Diagrams

These are self-explanatory and will show the Bogey and Maximum Times plus any additional notes needed to clarify the manoeuvres to be performed.

Plotting Definitions

The Word "Road"

Throughout the events, the term "road", when referring to ways shown on the Ordnance Survey (OS) Landranger (1:50,000) maps, means only those depicted by two parallel black lines, either broken or unbroken. It does not include ways depicted solely by the single broken black line indicating *Track* or by the red convention markings for *Road Used as Public Path, Footpath, Bridleway, Byway Open to All Traffic* or *Other Route with Public Access*.

You may however use these ways (and roads not marked on the map at all) either when specifically instructed to do so (e.g. by a direction of departure that does not correspond to a road on the map), or when the red symbol is combined with parallel black lines.

Non-coloured roads are always referred to as "white roads", even when they may have, for example, a green infill when passing through woodland.

Shortest Route

When a route is not specified in detail in the Additional Route Instruction, the Jogularity instructions or otherwise, the correct route is the shortest route by practicable roads. These will be coloured roads unless the route instructions say, "use all roads".

Quiet Zones and Blackspots

Throughout the various handouts you will come across Quiet Zones and Blackspots. These are defined in various ways such as;

- As whole grid squares - e.g. the whole grid square 149 / 2354
- As parts of grid squares - e.g. the NW quarter of grid square 149 / 2354
- As a circle around a map reference - e.g. 200m radius of 149 / 232546
- Any additional Quiet Zones may be identified by organisers Q boards on the roadside

Please plot these areas carefully on your map and take care to avoid them. They are there for a reason, **DO NOT** pass through any blackspot and in quiet zones please slow down, keep noise to a minimum, turn off your spotlights and dip your headlights. Driving Standard Observer's (DSOs) may attend any of these points to monitor driving standards.

Regularity and TC Section Handouts

The various navigation styles that may be used on events are briefly described below. The individual route handouts will specify whether "white" roads are to be used or whether the section is "coloured roads only". Unless told otherwise, you should **not** use roads more than once within a regularity section. The only exception of this would be the use of the same junction if the route does not cross itself, for example a slightly staggered crossroads where you approach from the south and depart west, then return to the same crossroads from the north and depart east. In a couple of instances, however, you may traverse a road that is also used on an earlier or later section of the event if heading to or from a Test or Halt location.

The Regularity handouts will contain the average speed information required for that section. This will generally be in a descriptive form e.g. 27 mph from Regularity Start to 4.50 miles / 22 mph from 4.50 miles to End of Regularity.

On Le Jog and some regularities on other events, this information will be provided as a Jogularity sheet (see following page for details) or as a set of Cumulative Average Speed Tables (see right).

Distance (mi)	Time (mm:ss)	Speed (mph)	Distance (mi)	Time (mm:ss)	Speed (mph)	Distance (mi)	Time (mm:ss)	Speed (mph)
0.00	00:00	29	4.20	10:48	27	8.40	20:30	
0.10	00:12		4.30	11:02		8.50	20:43	
0.20	00:25		4.40	11:15		8.60	20:55	
0.30	00:37		4.50	11:28		8.70	21:07	
0.40	00:50		4.60	11:42		8.80	21:20	
0.50	01:02		4.70	11:55		8.90	21:32	
0.60	01:14		4.80	12:08		9.00	21:45	
0.70	01:27		4.90	12:22		9.10	21:57	
0.80	01:39		5.00	12:35		9.20	22:09	
0.90	01:52		5.10	12:48		9.30	22:22	
1.00	02:04		5.20	13:02		9.40	22:34	
1.10	02:17	15	5.30	13:15		9.50	22:47	
1.20	02:41		5.40	13:28		9.60	22:59	
1.30	03:05		5.50	13:42		9.70	23:11	
1.40	03:29		5.60	13:55	22	9.80	23:24	
1.50	03:53	24	5.70	14:11		9.90	23:36	
1.60	04:08		5.80	14:28		10.00	23:49	

Timing points can be located anywhere when using Cumulative Average Speed tables, not necessarily at a distance shown in the table.

The "Ideal Time" between each timing point may be displayed on a board after the last timing point of that section or at the next halt.

Map References

Map references will be presented in the form of 6 figure references (with fractions) based on the Ordnance Survey 1km x 1km grid. Generally, you will be given a list of map references to pass through (in order). However, map references may also be used to identify points which you should avoid (Out of Bounds). The map references may have the direction of approach / departure included which may define the route. The references may also have the Ordnance Survey Landranger 1:50,000 map number appended e.g. "203 / 343¼ 250¼" is the map reference for Land's End on Map 203. To the left is a sample handout from Le Jog 2016.

Regularity 2/4, Gregynog

RS 2/4: Map Book Leg 2, Page 10 & 11, 136/037¾ 932, Dep: NNE

Using coloured roads only and following the Jogularity instructions provided, go via the following map references in order.

Quiet Zone 095 986 – 200m Radius

1. 048 952½	App SW	Dep NE
2. 066½ 974	App W	Dep E
3. 096½ 002	App SW	Dep NNW
4. 095 016	App SW	Dep N
5. 107½ 020	App N	Dep NNE

RF 2/4: Map book Leg 2, Page 11, 136/101½ 047, App: E

Tulips

Tulip diagram instructions will be presented in simple table formats. The instructions may show the Total and Intermediate distance from the start or between each tulip. Not all the junctions will be shown in these instructions. If a junction is not included, then you should stay on the principal road, and do not cross any junction markings – a simple rule is: "Unless you have been told to turn at a junction, don't!" Most dead-end roads (with a "No Through Road" sign) or restricted access roads (with a "No Entry", "No Access" or "No Vehicles" sign) are not included but should be avoided unless specified. To the right is a sample handout from the RAC Rally of the Tests 2016.

	Interval miles (km)	Section miles (km)	Symbol	Information
1	0.00 (0.00)	0.00 (0.00)		**RS 2/6** - ZERO TRIP _**27 mph to End of Regularity**_
2	0.14 (0.23)	0.14 (0.23)		
3	0.12 (0.19)	0.26 (0.42)		
4	0.02 (0.03)	0.28 (0.45)		! Tight Hairpin
5	Blank	Blank		

Jogularity

Inter Miles	Total Miles	Inter km	Total km	Landmark / Feature	Mph from this point	Kmh from this point	Inter time (m:s)	Time from start (m:s)	Notes
0.00	0.00	0.00	0.00	**Regularity Start Control - RS 3/2 (182 / 479 451½ - Depart SSW)**	26	*41.8*	00:00	00:00	
0.11	0.11	0.18	0.18	Crossroads - **Turn Left**			00:15	00:15	
0.15	0.26	0.24	0.42	Metal gates on left and right			00:21	00:36	
0.13	0.39	0.21	0.63	Junction - **Turn to pass through metal gate**			00:18	00:54	
0.17	0.56	0.27	0.90	Gate			00:24	01:18	
0.06	0.62	0.10	1.00	Road on right			00:08	01:26	
0.03	0.65	0.05	1.05	End of barn on right			00:04	01:30	
0.01	0.66	0.02	1.06	Junction - **Give Way and Turn Right**			00:01	01:31	
0.06	0.72	0.10	1.16	Metal gate on right			00:08	01:40	
0.27	0.99	0.43	1.59	Double wooden gates on left			00:37	02:17	

The widely-used Jogularity system (both Descriptive and Tulip) will be used on all of the regularity sections of Le Jog and some of the sections on other events. These instructions consist of a table of descriptive instructions, which contains both the navigational instructions and also the necessary average speed and time information. The individual instructions relate to the specific landmarks/ features passed on the correct route and Timing Points are usually located at one of the landmarks or junctions **(There will be a note at the top of the regularity instructions if any of the Timing Points are NOT located at the landmarks or junctions)**.

Competitors should note that the total times and intermediate times do not always add up because of hidden fractions of a second. In these cases, the Total time is the correct one. Above is a sample handout from Rally of The Tests 2018.

"Ready to Use" Jogularity may be used which will define which direction to travel at each junction, either with written instructions or using a Tulip style section. It is in a "ready to use" format so you do not need to plot the route on your map, often because there are small junctions and roads used that may not be on the map.

On Le Jog and selected other events unless otherwise advised, you will need to plot the route on your maps and use the Jogularity instructions simultaneously, as not all junctions will be shown. Note: - the Jogularity instructions take priority.

Marked Maps

Marked Map handouts will be provided in a variety of formats (and a variety of scales). These will include period 1 inch: 1 mile maps, large-scale site plans of private land venues as well as 1:50,000 Landranger and other Ordnance Survey map extracts.

The route to be followed may be highlighted by a coloured line or by black tramlines (a solid black line either side of the road to take). Alternatively, the maps may show a series of lettered points that should be passed through in the specified order (sometimes with the approach / departure directions also specified) known as "London Maps". In some instances, you will be provided with a period 1 inch: 1 mile map.

You may copy any information onto your copy of the corresponding Ordnance Survey Landranger map as this information will be used as the basis for the route navigation, issued during the event. To the right are two examples from the RAC Rally of the Tests 2016.
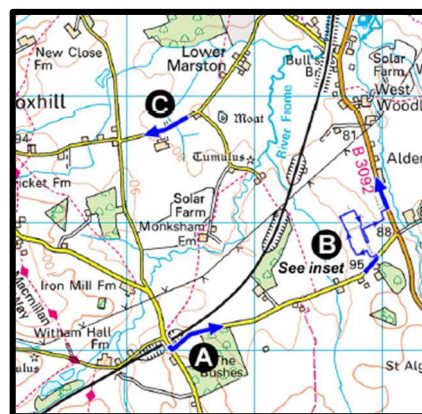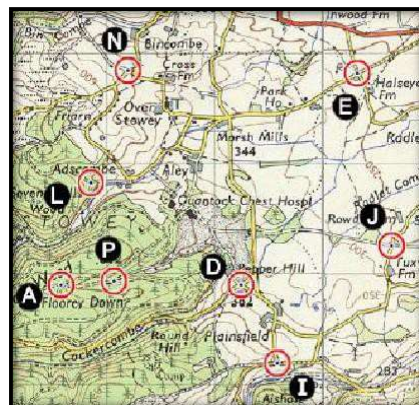
Map Features

On some regularities, the route will be defined using Map Features found on the Ordnance Survey 1:50,000 Landranger Maps. This will include features such as numbers / letters / natural features. In addition, Grid Squares (GS), Grid Lines (GL), Spot Heights (SH) and other features will be used to define the route. Grid Squares are the blue 1km x 1km squares on the Landranger maps, e.g. GS 23 51 on Map 117 contains Pendinas Reservoir. Spot Heights are small dots with an altitude above sea level alongside, e.g. "SH 19" in GS 45 67 on Map 117. When map features are listed you should pass through those features only and **no** others.

Spot heights

To go through a spot height the dot must be on the road. There may be duplicates of the same spot height but just remember that you must go the shortest route without going through any unlisted spot heights.

Letters or Numbers

You will be deemed to pass through the letter or number if it overlaps or breaks the side of the road, see example on the right.
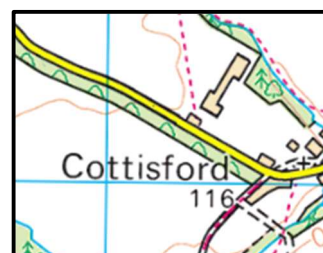
As with Map Reference handouts, Map Features may be used to define a series of points to pass through (in order) or, alternatively, may be used to identify points to avoid (Blackspots).

1950s Descriptive Style

This type of navigation uses the Descriptive Style of the 1950s RAC Rallies to outline the route to be followed. Some of the terminology is perhaps a little more formal than we are used to today (e.g. "d.p." is direction post). Also, distances are provided in yards as well as miles… There are 1760 yards per 1 mile. As trip meters were not common in the period we are attempting to recreate, the distances are a little approximate! Below is a sample handout from the RAC Rally of the Tests 2016.

> From the **Regularity Start** (Map Reference - 193 / 373¼ 087½), Depart to the NE and drive at an average speed of **22 mph** and in about 2200 yards, give way and turn **L** at tee junction (no d.p.). Then, after 500 yards, turn **R** (no d.p.). Follow this road for close to 1500 yards and then give way and turn **R** at tee junction (no d.p.). At 2½ m from the Regularity Start, you should increase speed to **27 mph**. Having travelled a further 3900 yards, give way and turn **L** at tee junction (no d.p.). Thereafter, in 700 yards, turn **R** (no d.p.). From here, continue for just under 740 yards and then give way and turn **R** at tee junction (no d.p.). Follow this road to the **End of Regularity** (Map Reference - 193 / 340½ 129).

Deeliarity

This type of navigation, based on the "Deeliarity" system introduced by Roger Deeley. It is designed to be navigated "as you see it" and is likely to be difficult to plot on the map.

Not all junctions are shown - if a junction is not included then you should continue on the road you are currently travelling along. In addition, you should obey all compulsory road signs (e.g. "One Way" road and you should never pass a "No Through Road" or "No Entry" sign unless instructed). The direction to take at the junction is not always indicated but the other information provided makes it clear which way to go. To the right is an example from the RAC Rally of the Tests 2016.

Fork Left at "Porlock Post" _Change to 24 mph_	4.04 _(6.50)_
SPEED CHANGE at Cattle Grid _Change to 19 mph_	
Turn Right	6.22 _(10.01)_
Turn to pass over Cattle Grid (Give Way - no signs)	

Herringbones

Herringbones are a very simple method of defining the route, once you understand how they work. Imagine the rally route had been drawn on the map and, at each junction, an additional little bit of road leading away from the route has also been drawn in. The main line of the herringbone (the spine) is the rally route that you want to take and all the additional lines up and down off the spine are the roads that you need to ignore or "miss".

The herringbone drawing that you are given is as though the route with its additional little bits of road at each junction has been lifted off the map and pulled tight like a piece of string -e.g.:

So, when you are given a herringbone, the route that you need to take appears as a straight line, showing the roads to miss on the left and right over and below the line. The way to convert the herringbone to a route on your map is to describe to yourself what you see on the herringbone and transfer that to the map.

For example, with the herringbone above, reading it from left to right, you say, in sequence, to yourself:

1. "Straight on at crossroads" Easy! And then you mark that on your map.
2. "Miss road on the left" The next junction on the map is a T-junction so to "miss a road on the left" you need to turn right at the T-junction. Again, mark that on the map before doing the next piece.
3. "Miss a road on the right" The next junction is actually a road on the right, so you need to go straight on.
4. "Miss two roads on the left" The next junction is a crossroads. So, to leave two roads on the left you have to turn right at the crossroads.
5. "Miss a road on the left" This should now be clear; you keep straight on - but watch for occasions where you are on a major road, the road on the left is actually the continuation of the major road and you have to actually turn off it to "keep straight on".

In some instances, herringbones will be turned into a "Circular Herringbone" where the spine is one large circle. The start or finish may not be defined but other roads may be highlighted to guide where you are on the herringbone. The example to the left shows the same route as above, the first road (1) has been highlighted to show that it is crossing an A road that is red on the 1:50,000 Landranger Ordnance Survey Map. Alternatively, if this was not highlighted as you start the regularity, the first road you would come across would be a crossroads, highlighting which direction to follow around the circle.

Clockularity

The Clock face represents a junction, junctions are depicted in order unless otherwise specified. The hour hand is the direction of approach and the minute hand shows the direction of departure. The centre of the clock is the centre of the junction but other roads of the junction, for example if it was a crossroads, are not shown. Angles are as accurate as possible and this will determine the correct route. - e.g.:

Road Letters

YYy ywy yRR RYR RRy yBBy

Each grouping of letters represents a road junction;
- The first letter is the road you are on y = small yellow,
- The middle letter or letters are the roads in the junction you miss
- The final letter is the road you take.

Every junction is shown in order, except those with tracks or roads that don't go anywhere, these are ignored.

Y = wide yellow (generally more than 4m wide)
y = narrow yellow (generally less than 4m wide)
w = white (track)
R = Red Road
B = Brown road

For example if you had YRRy that would be a crossroads, you would arrive on the wide yellow road, ignore the red roads both sides and depart on the narrow yellow.

When there are a few groupings the same you might have to look ahead to see what junctions are coming up, to determine the correct route.

Other Notes

During the event, you should comply with all "No Through Road" signs unless otherwise instructed. Some sections of the route may be on private land. "White" roads on Herringbones and Tulips will be defined as dashed or dotted lines unless otherwise advised.

At any time, where appropriate, the route may be defined by orange "HERO" arrows which must be followed.