Hexham & District Motor Club

Navigation Training

The Basics

15th March 2023

This is a basic guide for any beginner or novice looking to compete on a road rally. It would be possible to spend a whole eveniong talking about each section, so I'm just going to try and cover the basics, whilst providing you with some examples to take home and familiarise yourselves with.

Many other more detailed guides have been written on the art of navigation, you are welcome to search for them on the internet and learn as you wish, this is just an introduction.

That said, I am always available to answer any questions you have, and we will do some more training evenings looking at things in more detail.

In this guide

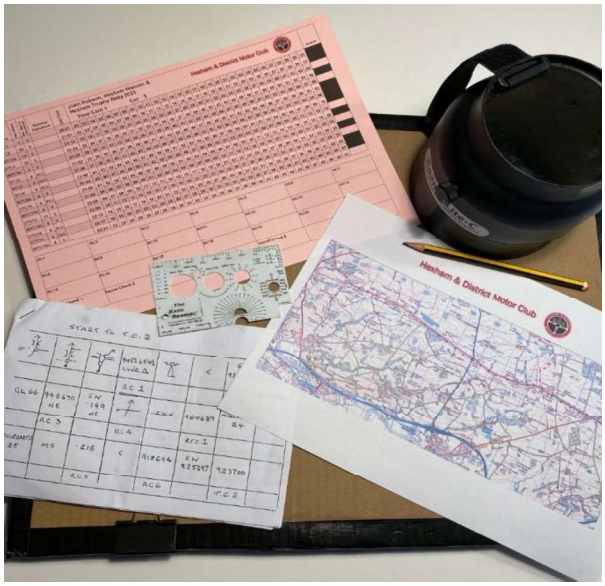
Time Cards

Control Types

Equipment

Plotting

Road Reading and Time management



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Time Cards

All road rallies run to 'schedule timing' this is where the event has a start time, a minimum time for each section, and therefore each car has its own schedule to aim for.

The target for all competitors in any road rally is to stay on schedule, the winner is the crew that stays closest to this. The time schedule will always be detailed on the time card, and it is this piece of paper that is the most important piece of paper in any rally car, it is your record of how you have done.

Time cards can take two forms. The first is what I would describe as a traditional time card, and the other is known as a summer time card.

A traditional time card as seen below will detail all the time controls, the time allowed between each control and a time for car zero. This is enough information for you to then calculate your due time at each control.

Your due time is simply the car zero time plus your car number. If you are late at any control, then you must carry your latness through the following controls.

Control	Car Zero	Time Allowed	Due Time	Direction	Actual Time	Signature
MTC 1	20:00	0				
STC 2	20:04	4				
STC 3	20:10	6				
NTC 4	20:36	26				
STC 5	20:41	5				
STC 6	20:59	18				
STC 7	21:03	4				
TTC 8	21:15	12				
STC 9	21:28	13				
MTC 10	21:33	5				

A summer time card as seen on the next page makes things much simpler for the navigator as it already has your due time calculated for each control, and is also very easy for you to see how much time you have lost and if you are close to going OTL.

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Control Types

There are different types of controls on all rallies, they each have subtle differences which are important to understand. They are all detailed in the 'blue book', but here is a brief guide.

Main Time Control (MTC) - These are usually situated at the start and finish of an event, but may also be at other important points along the route. To be classed as a finisher on any event, you must visit all main time controls within your maximum permitted latness. There is time penalties for arriving early or late.

Standard Time Control (STC) - These usually make up the bulk of an event and incur penalties for being early or late. It is possible to miss a control, this will incur a large penalty but sometimes it is essential to do this to keep you in an event.

Neutral Time Control (NTC) - These are located at the end of non competitive sections usually where you have to pass through a built up area. They should be set at a slower average speed and you don't get any penalty for being late. There is however a penalty for being early.

Transport Time Control (TTC) - These are located at the end of non competitive link sections, usually where you will travel along some fast roads or pass through an urban area. There is no penalty for being late, but you are allowed to make up lost time subject to the 3/4 rule.

Lateness
All events will have a maximum permitted latness (usually 30 minutes) once you go beyond that latness at any control you are OTL (Outside Total Lateness) and will then be excluded.

Any time lost counts towards your penalty and can never be recovered. However, you can reduce your latness, subject to the 3/4 rule, to stop you going OTL. This is a difficult rule to explain and will be covered in a different evening, or you can look it up in your own time.

Regularity Sections

Some events include regularity sections which are set to establish how accurate you can be. They have a set average speed and this is measured by your time of arrival at the hidden controls called:

Intermediate Regularity Time Control (IRTC) - These are located in the middle of a regularity section and are timed to the second rather than the whole minute. The location of these can not be given and you will be penalised for every second early or late. The time you are expected to arrive at this is based on travelling at an average speed specified by the event organiser.

Classic or historic events are mostly made up of regularity sections and will involve many changes of speed and numerous IRTC's.

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Equipment

For navigators there is very little equipment you really need, and it costs very little. Heres a list of what you might carry in your navigators bag.

OS Landranger maps 1:50,000 - All events must use this scale of map

Map board - usually cardboard, cut to a size to match the map, and maybe some clips

Pencils - 2B or 4B, some people also use erasable pens

Eraser - buy a decent one to make rubbing out maps easy so you can use them on your next event

Clip board - used for putting your time card onto, double sided ones are really useful!

Roamer - a simple device used to plot grid references accuratly

Digital watch - you need a watch you can accuratly set to rally time

Poti - a map magnifyer and light in one, very useful for pre plot events and seeing small details

Map light - either something fitted and wired into the car, or simply use a head torch

You can get all of these items from the following web sites:

The Basic Roamer Company
Demon Tweeks
Don Barrow

For OS maps I suggest:

www.Dash4it.co.uk

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Plotting

There are many different types of plotting instruction and they vary from event to event. However there are a few basic ones that are common and should be what you find as a novice. I will discuss other types in the future, but these are the basics.

Grid References - Given as either a 6, 8 or 10 figure reference, they define a specific point on the map that you usualy go via. This can be accompanied by the direction of approach and departure using compass points.

Grid Lines - The number of each grid line that the route must cross will be listed, so simply go via each one without crossing any others.

Tulips - This is a diagram that depicts junctions, you always approach from the ball, and depart with the arrow.

Spot Heights - These are a feature on the OS maps that detail the height above sea level at that specific point. These are often used as points to go via.

Map Features - The OS map shows lots of information, and some of it is written on top of roads or adjacent, so you would be asked to go via these. They could be letters from place names, churches, bridges, red or green dots or any other feature present on the map.

Herringbones - These are a simplified diagram of the route you need to take, they detail which way to go at each junction

The attached practice navigation uses all of the above.

All events will contain certain abbreviations which you need to be aware of. Here are a few of the basic ones.

CRO - Coloured Roads Only - This means the route only uses coloured roads, no whites!

CAR - Consider All Roads - This means it may include whites

SGW - Stop Give Way - This references any junction where you are required to give way. At all of these junction you must come to a complete stop before proceeding!

OTL - Outside Total Lateness - this is where you have used up all your latness and will be excluded from the event.

WD - Wrong Direction - If you approach a control from the wrong direction then you would be subject to a time penalty.

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Road Reading & Time Management

As a road rally navigator its all about multi tasking. There is plotting, navigation, paperwork, driver management, time keeping, code board recording and if you have time, reading the road.

You need to prioritise each job, and try not to loose your place on the map. The more organised you are at the start the better, and the more your driver understands what you are doing, the more you can work together as a team.

I find it best to keep things minimal and simple where possible, but everyone has their own style. Describing what the driver needs to do with minimal words will make it easier for them as they are also multi tasking. Agreeing before hand how you will describe things really helps.

If you are on top of all the jobs and you find time to read the road to help your driver, I would use either of these two common methods.

Degrees - 0 to 90 then include hairpins

Descriptive - Easy, medium and tight, then include hairpins

There is no right or wrong its purely personal preference and generally it takes time with a driver to understand each other.

Every 2mm on an OS map is equal to 100m, so calling distances with that visual reference in mind can help describe how long between corners or upto junctions.

If the junction is a SGW, I would call it as a T Left/Right

If you are taking a road on the left or right, I would call it a slot Left/Right

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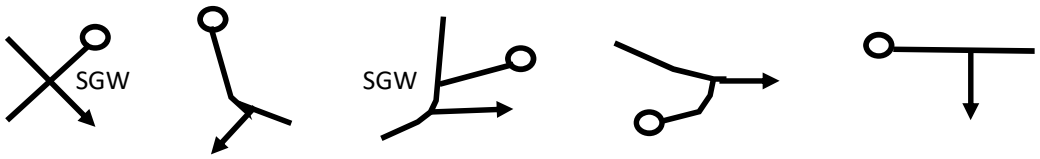
MTC 1 - STC 2 C.R.O.

MTC 1 @ 926 706 Depart SW



STC 2 @ 929½ 670

STC 2 - NTC 3 C.R.O.

QUIET through Acomb NTC 3 @ 932 660

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NTC 3 - STC 4 C.A.R.

STC 4 @ 955 676

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STC 4 - STC 5 C.R.O.

96 96 67 66 95 95 96 97 98

STC 5 @ 983½ 650

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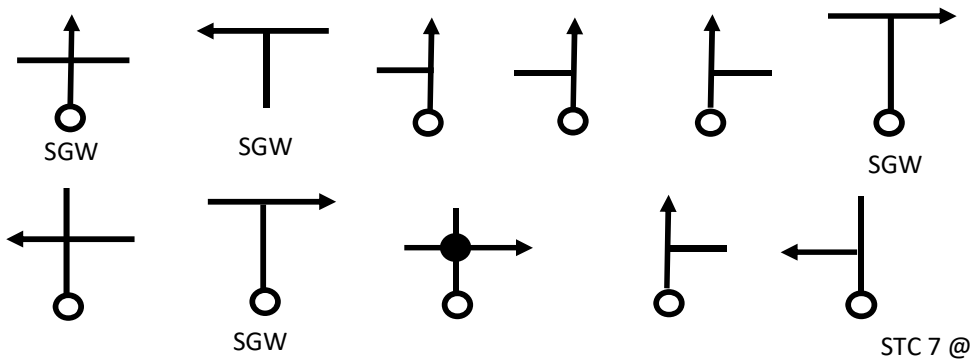
STC 5 - NTC 6 C.R.O.

Take the shortest route to NTC 6 @ 983 657

NTC 6 - STC 7 C.R.O.



STC 7 @ 989 669

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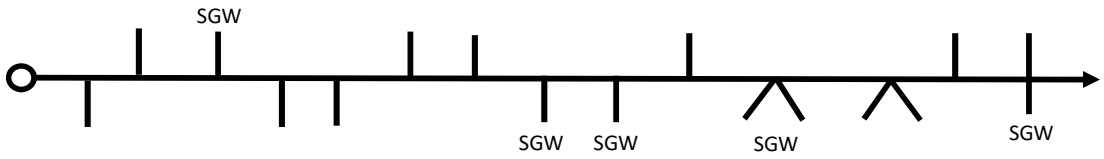
STC 7 - STC 8 C.R.O.



STC 8 @ 024½ 679

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STC 8 - STC 9 C.R.O.

6 8 0 3 0 4 6 9 7 0 0 4 0 3 0 2 7 0 0 2 6 9

MTC 9 @ 022 687