Photo by Tony North

PLN 692L

The HRCR Historic Road Rally

NAVIGATION HANDBOOK

Prepared for the HRCR

Clubmans Historic Road Rally Championship

HRCR.Co.uk

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RALLY CAR REGISTER

The Home of Historic Rallying

INTRODUCTION

This Rally Navigation Handbook has been prepared as a handy reference document, to give novice navigators an insight into the various types of route instructions that can be expected on events which form the HRCR Clubmans Road Rally Championship.

All organisers of championship events have been provided with a copy of this Navigation Handbook and have been requested to base the route instructions that they issue to all crews on the methods shown herein.

This Handbook is by no means totally definitive of all the types of route instruction that will be used on other rallies outside of the Clubmans Road Rally Championship. You will be surprised what some rally organisers will think up. The Handbook just covers the simpler forms of each type of route instruction and has purposely omitted things like circular herringbones, latitude and longitude co-ordinates, contour lines and coded grid references, as we don't consider it fair game to inflict them on rallying beginners. But don't expect to win after reading the contents of this handbook. There is no substitute for the experience gained in getting out and competing on events.

This handbook was originally prepared by Andy Gibson who was the Clubmans Road Rally Championship Secretary for 17 years. He sadly passed away in 2016 passing the role Ian Doble for the following three years before handing the reigns to Martin Phaff. Now in 2022 Ken Binstead has taken over and we believe this handbook is still the "*rally navigation bible*". We can't guarantee that there are no errors or omissions in this Handbook, but if you do find anything, or have any questions or comments, you are welcome to e-mail ken_binstead@hotmail.com

GRID REFERENCES

Often called Map References, they are most commonly given to six figures, based on each grid square on the map being divided into tenths in each direction. For example: **442568**

The explanation will be simplified if we split up the 6-figure reference thus:

44..2   56..8

To plot the grid reference onto your map you must go *"along the passage and up the stairs"*, so the first part relates to the grid line numbers across the map and the second part relates to the numbers up the map. From the intersection of gridlines 44 (across) and 56 (up), you go 2 tenths of a square to the right and 8 tenths of a square up and you have your point.

An essential piece of equipment for speedy and accurate plotting of grid references is a Romer.

To be precise, the six figure grid reference does not define a single point, but a 100 metre square, in the same way that the whole 1 km grid square is defined by the four figure grid reference **4456**.

If a grid reference is required to greater accuracy than 100m, then it may be given in eight or ten figures. For example:

44255677 or 4425056775

In this case the additional figures represent further subdivision of the 100m square indicated by the preceding figures. It is quite common to use simple fractions or decimals in place of the additional figures.

442½567¾ or 442.5 567.75

Grid References can also have the direction of approach and/or the direction of departure attached. The approach direction always comes before the reference and the departure direction comes after it.

NE345980 means approach 345980 from the North East. 765987**W** means depart 765987 to the West. **N**123456**SW** means approach 123456 from the North and depart to the South West.

A typical section of route defined by grid references might therefore be:

  TC1   664228SW   via   W670222E   via

NNE672½204½   via   679205E

  TC2   W689½205

Try plotting them on this bit of map. Sorry you can't use a Romer as it will not have printed to scale.
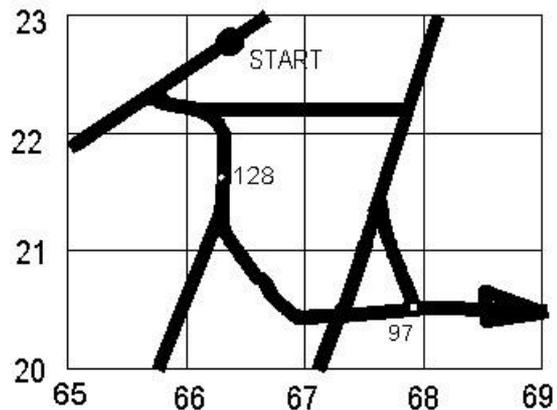
TULIPS

The name of this type of route instruction comes from the Tulip Rally, which first used it in the 1950s.

Tulip, or ball and arrow instructions, are simple diagrams of the route junctions with the ball indicating where you come from and the arrow indicating where you are going to. Normally they are given in order.

Tulips may be orientated as on the map, or turned around so that the ball is always at the bottom, or most of the balls and arrows may be left off deliberately. Sometimes they may be squared up. Here are a few variations on the same route described with tulips, which can be plotted on the map sample below:
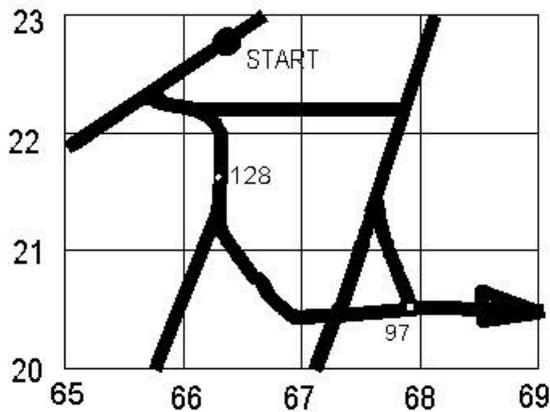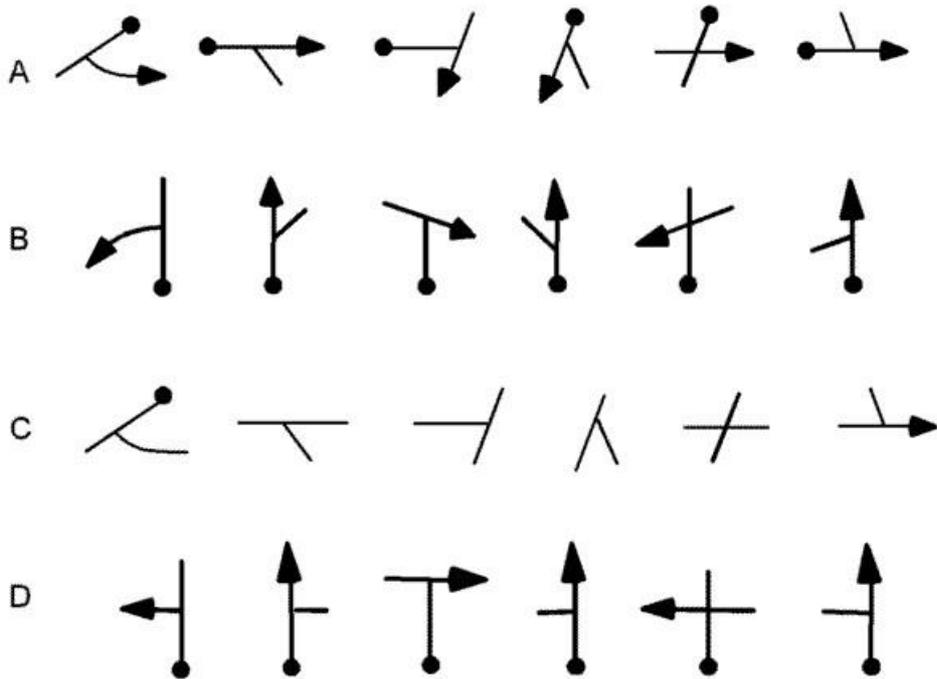
TULIP ROADBOOK

Commonly used to describe the route of regularity sections or non-competitive link sections, the Tulip Road-book uses tulip symbols to detail a route, but provides additional information on distances, road signs etc. Here is an example for the same route as on the previous page:

Intermediate Distance	Total Distance	Tulip	Comment	Distance to Go
0.00	0.00	TC3	Time Control	3.97
0.52	0.52		Swan Lane	3.45
0.36	0.88		Newtown 3	3.09
0.95	1.83		Give Way Join A286	2.14
0.49	2.32			1.65
0.53	2.86		West Street	1.11
0.44	3.30			0.67
0.67	3.97	TC4	Time Control	0.00

HERRINGBONES

Herringbones, or **Straight Lines** as they are sometimes called, are a very simple method of defining the route, once you understand how they work. Imagine the route drawn with a little bit of road leading away from each junction, then pulled tight like a piece of string. The route that you take is then a straight line, missing roads on the left and right accordingly. The way to convert the herringbone to a route on your map is to consider 3-way junctions as **leave a road on the left** or **leave a road on the right**.
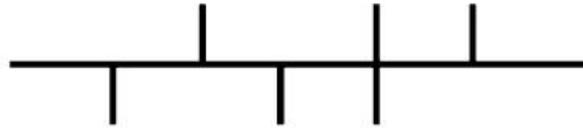

If the junction on the map is shaped like this, going straight on from A to B you would **leave a road on the right**. However also turning from C to A or from B to C you would **leave a road on the right**. For each of these three cases the junction on the herringbone will look the same. Similarly, to **leave a road on the left** you could be going straight on from B to A, taking a right from A to C, or turning right at the T-junction from C to B.
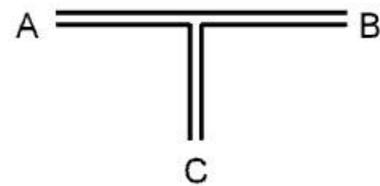
The two example herringbones on this page will take you from the start to finish of the section on the map below via different routes. Notice how the crossroads appears when you are turning left, rather than going straight across.

It's usually expected that herringbones will start from the left, but rally organisers often turn them around, maybe giving you a clue in the instructions, like *"the following herringbone describes the route from TC4 to TC3"*, so read all instructions carefully. When you come to a crossroads on your map and it fits with a crossroads on the herringbone, it's a good indication that you're on the right route. If not, then try starting at the other end!
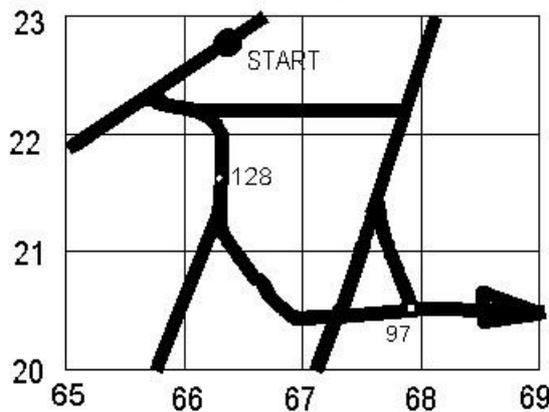
MAP TRACES

A map trace is just what it says, a tracing of the route from the map.
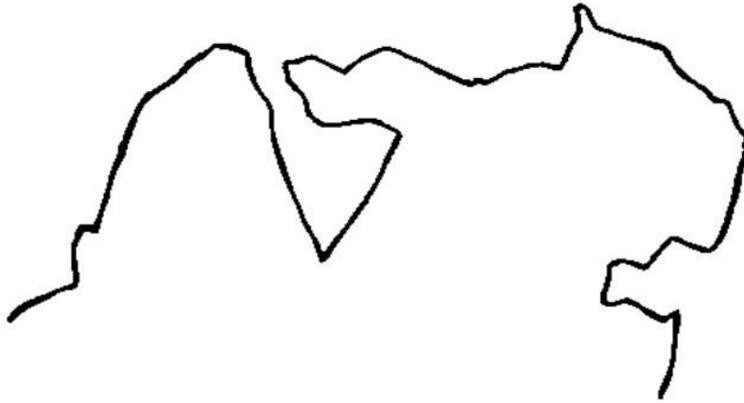
A single trace can be used to indicate the whole route of a section, or it may be split up into smaller traces which must be sorted into order and joined together. Until you're experienced at solving traces you will probably find it a lot easier to solve if you copy the trace onto a piece of tracing paper (always keep some in your Nav-bag) and then try to fit it onto the map. Above is an example of a complete trace, and below the same route as you might receive it split into several pieces.

Tip: If you've copied it onto tracing paper and it will not fit to the map, you can then turn the tracing paper over to see whether the devious organiser has given you a mirrored trace!

Another way of presenting a trace is to chop it up into grid squares and mix them up. Here is how you might receive it. Only the road you have to travel along is shown in each grid square.
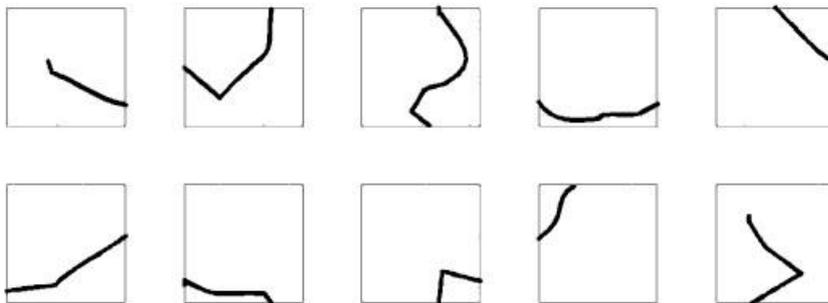
GRIDLINES and GRID SQUARES

The grid of the map can be used to define the route by the crossing of gridlines. This example is simply a list of the numbers of the gridlines across which your route must travel in order.

                66   66   22   21   67   21   21   68

These numbers could be given to you as a continuous string:

                              6666222167212168

or with a couple of spot heights mixed in to confuse you:

                            666622128216721219768

Devious organisers will use this method when you're in an area of the map where the northing and easting gridline numbers are similar!

This route could also be given as the North, South, East or West sides by which you should LEAVE each grid square:

                        W   E   S   S   E   N   S   E

or even as the direction from which you will ENTER each grid square:

                        E   W   N   N   W   S   N   W

Note that these directions will only be specified using the four main compass points, N, S, E and W. You will not get a NE or a WSW direction in the string.

On another variation of the theme, this same route may be defined as **T**op, **B**ottom, **L**eft and **R**ight departure from grid squares:

                        L   R   B   B   R   T   B   R

Each grid square can be specified by a four figure grid reference, defined by the intersecting gridlines at the SW corner of the square, so you may get this list of grid squares through which your route must pass in order:

            6622   6522   6622   6621   6620   6720   6721   6720   6820

All of the examples given above can be plotted on the following piece of map
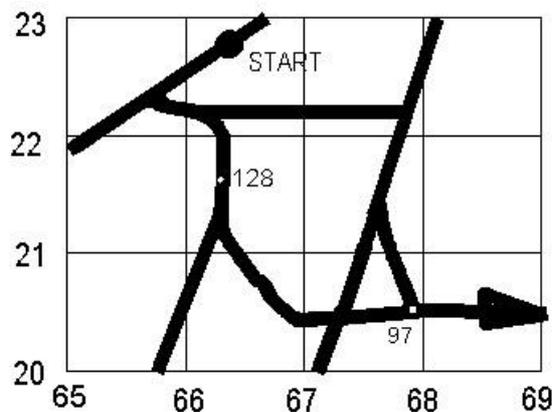
MAP FEATURES

A good knowledge of the map key is essential. Some instructions will make use of the information on the map like the gradient signs, churches, pubs, POs, ETLs, road numbers etc.

Such instructions might read:

Under a railway, ETL, A74, PO, church with a tower, ford, HWM.

A list of features may include spot heights or letters of a placename that 'interfere' with the road as shown on the map. Some of the features may be drawn using the same symbols as on the map as in this example:
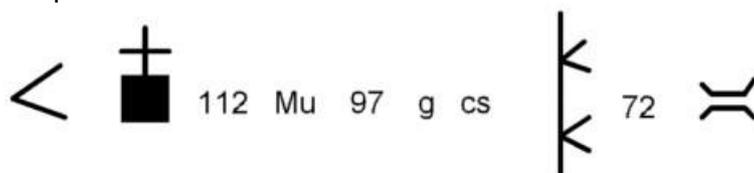
These instructions would mean: Go up a hill with a gradient symbol, pass a church (with a tower), through spot height 112, through where the letters "Mu" from a place name cut the road, through spot height 97, through where a 'g' , then the letters 'cs' cut the road, under an Electricity Transission Line (ETL), through spot height 72 and over a bridge.

In a particularly hilly area a route may be given entirely by a string of gradient symbols, or by the abbreviations D for **Down** and U for **Up**. The double gradient symbol would tie up with a double symbol (very steep hill) on the map.

> > > < << > < < <

D D D U U D U U U

These are often mixed up with abbreviations O for **Over** and U for **Under**, where you go over and under bridges or under power lines shown on the map. So U can mean Under or Up which you'll have to decide in each case by studying the map. **D D U O D U U D O U**

Tip: If you cut the key off the map keep it with you as you may need it!

SPOT HEIGHTS

Spot heights are those points that the OS has measured to be exactly that height (in metres) above sea level. They are marked on the map thus: **.123** always with a small dot marking the exact point. Only those spot heights where the dot is on the road should be considered. You may be asked to pass through the following spot heights:

73   55   42   88   107   66

If the shortest route passes through another spot height that is not listed and the instruction says something like *"pass through these spot heights only"* you should work out a route to avoid it. Always look very carefully at the location of the dot, as it may be just off of a junction, thereby not requiring the most obvious route to pass through it or avoid it.

Variations on the spot height theme may give you the spot heights as a continuous string:

7355428810766

and may even mix spot heights with grid line numbers in the string.

You may be given consecutive pair of spot heights added together, which would be:

128   130   173

Spot heights could also be given as additions and subtractions from the previous number:

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        73    -18    -13    +46    +19    -41
```

or they may be given as additions and subtractions from an original starting point:

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        74    -18    -31    +15    +34    -7
```

Tip: Use a highlighter to show up all spot heights where the dot is on the road. This makes them much easier to see when plotting a route.

LONDON RALLY MARKED MAP

A speciality of historic rallying, often used on night sections, is the *London Rally Section*, named after the famous rally that was most associated with this method of route presentation in the 1950/60s.

Prior to starting the night section you will receive a colour photocopy from an OS map (sometimes from a "period" 1 inch to the mile edition), with numerous labelled points which you can transfer to your own map if you wish. A variation of this method gives you the points as a list of map references which you'll have to plot on your map. On starting the section you receive a schedule indicating which points are time controls, passage controls, give-way junctions or via points, the order in which you must visit them and the approach and departure direction information allowing you then to plot the correct route.

Here is a section of a marked map that was given out on the 1993 Targa Rusticana. If you think it looks a little strange - it's from the OS 1" sheet 141, 1952 edition.
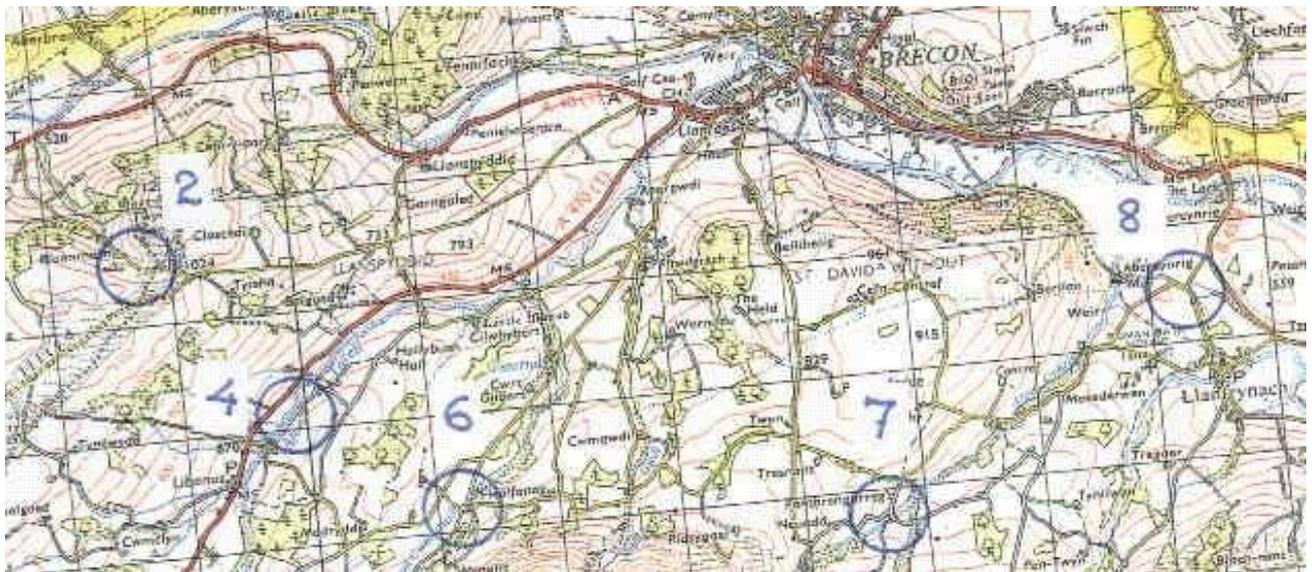
COMPASS DIRECTIONS

When compass directions are given to more than the four main points (N, S, E, W), they will usually relate to directions of departure from junctions, for example:

ESE   E   SSW   SSE   E

Thus you would leave the first junction going to the ESE (turn left) and leave the second junction going to the E (fork left) etc.   These examples can be plotted on this piece of map.

Compass directions are sometimes used to specify the precise directions by which you cross gridlines, so the same route would be:

SW   E   E   SSW   SSE   E

Compass Bearings will be given in terms of degrees instead of compass points. You must remember that 0 or 360 degrees is North, 90 is East, 180 is South, 270 is West etc. For example:

110   90   200   160   90
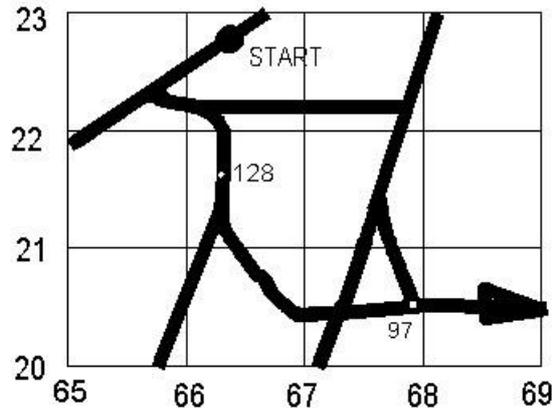
Tip: If you have trouble remembering your compass points, try thinking of "Never Eat Shredded Wheat" - in a clockwise direction !

CLOCK FACE DIRECTIONS

These are occasionally used to specify approach and/or departure directions at junctions and there are two main and quite different methods in use.

Firstly, you leave each junction in the direction of the hour hand, assuming that you arrive at the junction from six o'clock. Thus 12 o'clock means straight ahead, 3 o'clock is a right angle turn to the right and 7 o'clock is a hairpin turn left. So our route would be:

8:00   11:00   4:00   11:00   10:00

By the other method, you approach from the direction of the hour hand and leave by the minute hand. If you assume that the clock stays orientated so that 12 o'clock is always North it will be thus:

2:20   10:15   9:35   1:25   11:15

However, if the clock can change it's orientation you will just have to look at the angle between the hour and minute hands at each specified time to determine the angle through which you should turn at each junction.

The examples can be plotted on the map above.

Tip: If you wear a digital watch it won't help you much !

ROAD COLOURS

Roads on the Landranger 1:50000 maps that you'll generally be using come in four colours: **R**ed, **B**rown, **Y**ellow and **W**hite. The other one, not used so often, is blue for motorways.

Each junction on the route is described in terms of the colours of the roads involved. The entry road is given first and the exit road last. So an instruction would be something like:

BRR RRY YYY YYY YYY YYY YYY YYBB BBY

You can tell that you're starting on a brown road which finishes at a red road. You'll have to decide whether you go left or right on the red road, but the next junction must be a turning off the red road onto a yellow road. Then you go through 5 YYY junctions before coming to a crossroads with a brown road. And so on...

Coloured Roads Only: Often abbreviated with the acronym **CRO**. If this appears on the route instruction it means you can ignore any white roads on the map when plotting your route. When the organiser intends you to use white roads you might see **CAR** "Consider All Roads" or **MUW** - "May Use Whites", but usually the absence of CRO on the card is enough.
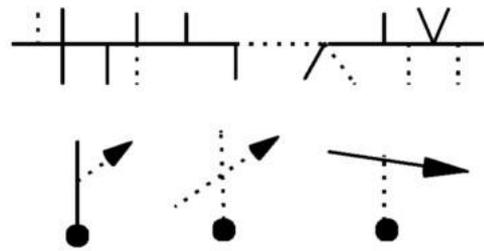
When white roads appear on tulips or herringbones they are usually drawn with a broken line, while coloured roads are drawn with a solid line.

JUNCTION DIRECTION ACRONYMS

At each junction the instruction is reduced to a simple two (or three) letter acronym. Here is a list of all the usual acronyms you're likely to come across. It's fairly self-explanatory but you must appreciate the difference between a TR and a RT.

SO	Straight On	SOX	Straight On at Crossroads
TL	Turn Left	TR	Turn Right
LT	Left at T Junction	RT	Right at T Junction
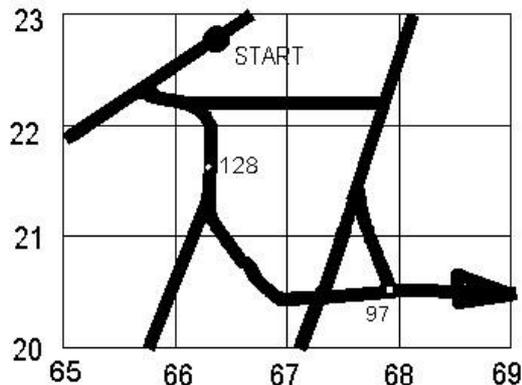
LX	Left at Crossroads	RX	Right at Crossroads
FL	Fork Left	FR	Fork Right

The following sequence will take you across this map.   **TL FL RT SO LX SO**