

**LINDSAY FARMER'S
NAVIGATION TUTORIAL**

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INTRODUCTION

This Tutorial has been prepared by Lindsay Farmer in an effort to provide an online resource for interested persons to learn about the art of navigational rally and some of the different methods of navigation used in Barbados.

Please note that this document is not an official document of the Barbados Rally Club or the MudDogs. As such, any information shown is for tutorial purposes only, and is not to be used for reference in official competition.

What is Navigational Rallying?

Navigational rallying is a competitive sport where teams of two people (driver and navigator) compete together to follow a predefined route in their vehicle at a given average speed.

The route is unknown to competitors prior to the event. At the start of the event, route instructions are provided which allows the team to work out the correct route to follow. The successfulness of the team depends largely on the ability of the team to interpret the route instructions.

The event takes place on public roads that are not closed to other road users, as well as private roads and tracks, for which permission has been granted for use by the owners. Because of this, responsible driving is required. Progress is measured on a route card by visiting direction-checks (DC) placed along the route, as well as check-points (CP).

Direction Checks (DC)

There are two types of direction-check. The standard direction-check, which checks whether the team arrived at this point from the correct direction, or departed in the correct direction, according to the route instructions, and the Off Route direction-check (Off Route DC) which is placed in a location not on the route instructions, but has a good probability of being visited by a team, due to a misinterpretation of the route instructions.

Direction-checks can be both "manned" or "unmanned". A manned direction-check is run by one or more persons, clearly displaying a DC sign, who record on your route card, as well as their control sheet, whether the team arrived and/or departed the direction-check from the correct direction.

The unmanned direction-check takes the form of a metal stake approx 2ft high, each with a letter and number. Upon seeing an unmanned DC on the left side of the vehicle, perpendicular to your direction of travel, the team must write down the letter and number of the stake, in the next available box on the route card in pen.

Check Points (CP)

A check point, or CP as they are more commonly referred to, are similar to a DC, in that they can be used to check the direction a team approached and left the control. In addition to this, they also record the time of day the team visited the control. This information is then used to assess penalties depending on the number of minutes early or late that particular team was due to arrive at the control.

The scoring system below is an **example** of the penalties which can be applied.

- (a) For each minute, or part thereof, after the fourth minute following the minute which a vehicle is due (max. 25mins).....4
- (b) For each minute, or part thereof, before the fifth minute preceding the minute in which the car is due (max. 10mins).....10
- (c) For approaching a Check Point from the wrong direction50
- (d) For approaching a "D" Check from the wrong direction.....50

(e) For missing a manned control point.....	120
(f) For missing an unmanned control point.....	50
(g) Failure to present route card at a control point.....	90
(h) For arriving at the Start late	100
(i) For not being ready to start, or be scrutineered, at the required time at the Start or any stopover point	100
(j) Redirection from Rally Control	200
(k) Failure to adhere to traffic regulations	200
(l) For abusing an official (each instance).....	200
(m) For driving in a reckless manner (as seen by any official) during any function of the event.....	exclusion
(n) For not visiting controls in order (each instance).....	50
(o) For stopping in a section specified as a non-stop area	25
(p) For receiving outside assistance within the jurisdiction of a manned control or “test”	25
(q) For not attempting a “test” provided you have checked in at the start Marshall.....	90
(r) For not driving the correct route of a “test”	50
(s) For starting and not completing a “test”.....	80

What do I need?

1. Car or pickup

While this may seem obvious the vehicle must have a current road tax disk and and valid insurance. It must also be roadworthy. Prior to an event the vehicle will need to pass scrutineering. This will check all the brakes, lights of the vehicle, windscreen wipers, squirter, horn, tyre conditions etc. Other checks can be made but are less common. The vehicle should be road worthy in everyway.

Proof of vehicle insurance, the minimum acceptable insurance is third party only.

A Valid driver's license.

2. Some form of Map Board.

This is to support the map used by the navigator. Many people use a piece of polystyrene foam covered in cardboard. The map board must not be made of wood or metal as this would be too dangerous in the event of an accident. Chances are you will have to make your own board. A clipboard may suffice for a start but is generally too small.

3. Interior lighting.

Illumination will be required to see the map board and map while competing. The interior light on most cars is barely acceptable as it often distracts the driver. (The light needs to be kept on almost continuously). Many people buy specialised map lights, which have the benefit of running

from the car battery. A head torch, snake light or torch, suitably taped or restrained with cable ties also works well and is much cheaper – but remember that batteries also cost money. Another useful item to have is a "Potti Light". This is basically a magnifying glass mounted on a base with a small light built in. Great for plotting routes on a map, but will cost you a fair bit. There are some plastic magnifying glasses with small bulbs built in that are quite affordable and just as useful.

4. Exterior Lighting

In addition to your standard headlights that are fitted to the vehicle, you should get a hand held spot light, either a rechargeable model, or the type that plugs into the cigarette lighter of the vehicle. This is used for spotting roads and tracks in the dark. You can also fit spotlights to the exterior of the vehicle, but they must be no higher than the highest point of your bonnet, and must be wired in such a way, that they turn off when you put your headlights on dim.

5. Maps.

The maps used on events are usually provided by the organising club, with additional maps available for purchase.

6. Pencils/Pens

A dark pencil is best. HB or darker. Too hard a pencil tends to be difficult to see, hard to erase and damages the map. Don't forget a sharpener and good quality eraser. Some people use highlighters to highlight the prescribed route on the map for easy visual reference. Most people carry several pencils – they always disappear.

Ball point pens are a must as well, for writing in unmanned direction-checks on your route card.

7. Miscellaneous

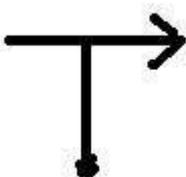
Motion sickness pills such as Stugeron Forte, as well as something for headaches are a good idea.

Now that you have all the equipment organised, it's time to learn about the different forms of navigation.

Types of Navigation.

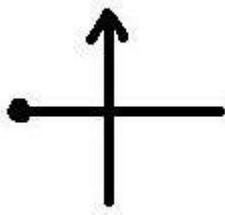
Tulip Navigation.

Tulips are like little drawings of each junction. Each junction will have its own picture or tulip and normally be numbered in order. The dot signifies the entry point of each junction and the arrow the exit, or simply put, the dot is the car and the arrow is the direction to turn. An example is given below.

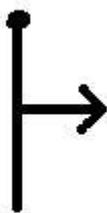


This diagram indicates that the next junction you arrive at should be a T-junction, and you should turn right at it.

Tulips are generally considered easy but can be made more tricky by rotating diagrams, as shown in the diagram below.

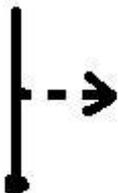


At a glance this diagram appears to be telling you to keep straight at the next cross road you come to. However, being that the dot is on the left of the diagram, you are actually to turn left at the next crossroad. This is a common trick found in diagrams for cross roads and diagrams to turn off one road and onto another, shown below.

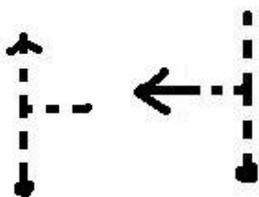


Here again, at a glance, it appears the diagram is directing you to turn right, while in actual fact it is a turn left instruction. Always remember to look at each diagram carefully, and see where the dot or ball is located in relation to the bottom of the page.

Now that you have the tricks of how tulip is drawn understood, let's discuss surfaces. All of the examples above have pertained to paved roads. A paved road is shown as a solid line, while an unpaved surface is shown as a broken line. As shown below.



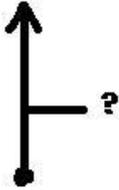
This diagram means you are on a paved road, and are turning right onto an unpaved road (track). Which brings us to the change in surface rule. If you are travelling on an unpaved road, and your next diagram shows a paved road, you must stay on the unpaved road, until you come to a point on the road, where what you see in front of you, is a paved road that looks like the next diagram. Sounds confusing I know. Here is an example. You are on an unpaved road. At the end of the unpaved road you can see a paved road forming a T-junction. Just before the paved road and on the right is another unpaved road. Your next set of instructions look like this.



As there is no instruction telling you about going onto a paved road, you must stay on the unpaved road, ie the one on the right just before the paved road described above. Once on this

unpaved road, you continue along it until you come to a junction which allows you to pass an unpaved road on the right.(Diag1) Once you have done this, you must continue on the unpaved road until you can turn left onto an unpaved road, which joins a paved road, as shown in the second diagram above by having a broken line and a longer solid line.

Another feature of Tulip diagrams is the "Questionable road". This is a road or track where the end of which, cannot be seen from the junction from where the diagram is drawn, either because it disappears around a bend and may look like it goes to a house, or goes over a crest, and you cannot see the other side. It is shown as the "?" in the diagram below.



That covers the basics of Tulip Navigation.

BRC Navigation.

In the early 1960's, the Barbados Rally Club devised it's own navigational system, which is still used today.

It comprises of the use of an Ordinance Survey map, and a route in the form of written instructions which must be applied to the map, and then followed in the vehicle.

The key to the these instructions is as follows

TR - Turn Right

TL - Turn Left

BR - Bear Right

BL - Bear Left

KR - Keep Right

KL - Keep Left

KF - Keep Forward

Join - Continue on to Road as Instructed

Hway - Highway

Sec. Road - Secondary Road

O. Road - Other Road

Track - Track.

BRC Rules.

There are a few rules you will need to follow when plotting the written instructions onto the map. Firstly always remember to stay on the surface you are presently on unless instructed to change. Eg. If you are on a Secondary Road (Sec Road) on the map, and the instructions are TL, TR, TL, TR Hwy, you Turn Left onto a Sec Road, then Turn Right onto a Sec Road, and then Turn Left onto a Sec Road, then Turn Right onto a Highway.

There is also the Keep Forward Rule. This is basically, when you see a KF (Keep Forward) you must look at the following instruction, to know what you are to Keep Forward of. Eg. TL Sec Rd, KF, TR, TL Hwy. These instructions mean: On the map, Turn left Secondary Road, Keep Forward of (or pass) a Secondary Rd on the right, Turn Right Secondary Road, Turn Left Highway.

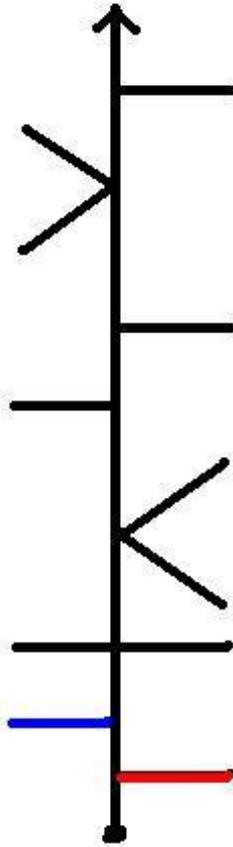
A BR (Bear Right) or BL (Bear Left) is usually applied at a junction on the map in the shape of a "Y". Likewise KR (Keep Right) and KL (Keep Left).

If you are wondering how to differentiate between a Secondary Road, Highway, Other Road and Track, on the map, simply look at the key on the top right corner of the map.

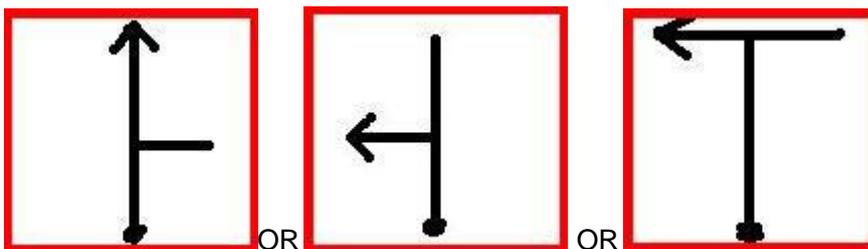
Plotting the route instructions onto the map is not the difficult part, even though it may seem so at first. The trick comes when you start to drive the route. You will quickly discover that what may be a Track on the map, has become a paved road, due to development in the area subsequent to the maps printing. The reverse can also be true, where on the map you are looking to turn onto a Secondary Road, but when you get there, due to a lack of maintenance over the years, the road has eroded away, and become overgrown, and now appears to be a track. This is where knowledge of the road system will prove useful as well as measuring the distance on the map and converting the scale to actual distance, then driving this distance. So if some weekend you have nothing to do, go for a drive in an area you are unfamiliar with, and learn where roads take you and practice measuring, scaling and driving.

Straight-line Navigation.

Also known as Herring Bone Navigation, because of the routes similarity in appearance to that of popular fish. As shown below.

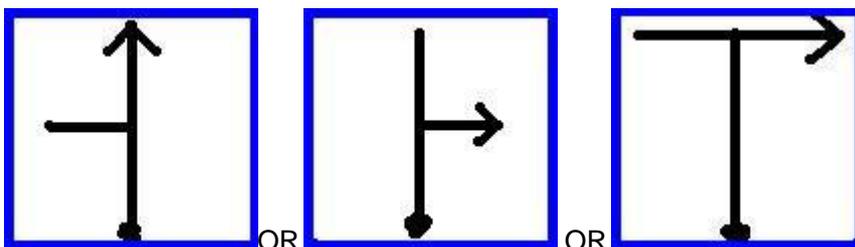


The above diagram is read from the ball (at the bottom) to the arrow head (at the top), in the following manner. The first line on the right is read as. "Leave a road on my right OR Turn left." (Each line represents one of two possible instructions, hence the OR). Now if we were to draw the same instruction in a Tulip diagram it could look like this.



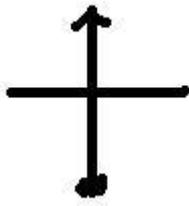
NB. The Turn Left can either be onto a road joining on the left, OR a T-junction

The next line up is read as "Leave a road on my left, OR turn right." Once again, if this were to be drawn as a tulip diagram, it could look like the following.

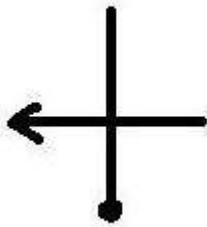


NB. The Turn Right can either be onto a road joining on the right, OR a T-junction.

The next line up is read as "Leave a road on my left and right." Another way or of saying this would be "Keep straight at cross roads."



And the next instruction up is read as "Leave two roads on my right" Another way of saying this would be "Turn left at Cross Roads."



This covers the basics of Straight-Line Navigation.

Photographs.

As the name suggests, this form of navigation involves the use of photographs. The route sheet for photographic navigation will have the following appearance. Each page of route will have printed on it a set of photographs, usually numbering 6 or 8, but not limited to this. Each photograph will be that of a junction, and on the photograph, an arrow will be drawn, showing which way the crew is to proceed at the junction. Simple enough. However, the sequence of the photographs may not be necessarily in order, i.e.: the photograph following the first photograph on the page, may not be the next junction you come to. So you must always look at each photograph on the page, and see if it matches what you see in front of you.

The best way to proceed when following a photographic route is as follows.

Always stop at each junction, and look at every picture on the page. If you see a picture that matches what you see out of your windshield, then follow the pictures instructions, by following the direction of the arrow drawn on the photograph. If you DO NOT see a photograph that matches what you see, then disregard that junction, and continue in the direction you were heading, until you come to another junction, and repeat the process. It's always a good idea to tick off the photographs as you use them.