



**BRITISH ARMY
MOTORSPORTS ASSOCIATION.**

**A
GUIDE
TO NAVIGATION EVENTS**

Modified by Bernie Stevens, December 2015

Based on an existing guide compiled by BAMA members over the years





Figure 1

Introduction

1. This guide is designed to brief you on navigation events run by The British Army Motorsports Association (BAMA), how they are organized, how you can join in and how you can go about achieving success. It's aimed, in many respects, at service personnel in Green Fleet vehicles but much applies to other competitors too.
2. This guide will not answer every question but if you read it thoroughly and take note of the general principles, you should have a much better idea of how to get the best out of events and where to obtain further information.

Aim

3. The aim of this guide is to give beginners as much information as possible to enable them to gain the most out of participation in BAMA navigation events.

Navigation events

4. BAMA navigation events are recognized as sport by the Army Sports Control Board (ASCB) and are designed to promote improvement in the standard of driving, navigation and vehicle maintenance in a sporting arena. Service personnel participating in approved events are deemed to be on duty and entitled to normal pay and allowances in accordance with current regulations. The cost of maintenance, spares and fuel for military vehicles used for navigational events, safe driving and similar driving competitions is normally

charged to public funds. Service personnel participating in Green Fleet vehicles are required to comply with the requirements of 2015DIN10-054.

5. BAMA navigation events are run in accordance with the general regulations of the Motor Sports Association (MSA) [MSA](#) which is the National Governing Body (NGB) for motorsport in the UK. Additional Supplementary Regulations (ASR) are issued for each event. Civilian personnel and service personnel in civilian vehicles also participate in these events.

5. BAMA navigation group runs two types of event, as follows:
 - a. **Single or multi venue, multi phase.** This is, as the name implies, one or more locations with lots of different tests. These are usually on military training areas, mainly off road and run dawn to dusk.
 - b. **Navigation Rallies.** These are navigation events on public highways and byways, usually at night. Sometimes additional tests are included.
 - c. There are some events which combine both types of activity.
6. This Beginners' Guide should be read in conjunction with the ASR issued for each event. This Guide refers to both types of event.
7. Information about forthcoming BAMA activities can be obtained in various ways:
 - a. Formally, by issue of a DIN.
 - b. Informally, by means of ASR for each event sent out to all names on the Navigation Group database. By posts on the BAMA Facebook page. Sometimes in 4x4 magazines such as <http://www.lro.com/>
 - c. Additionally, by viewing the BAMA website at www.armymotorsports.co.uk.
8. This initial information should be sufficient for you to check if the event is suitable for you in terms of the date and location. It will give you a contact to discuss any issues you have. If you do not receive a copy of the ASR, you should be able to download them from the Facebook page, or send an enquiry form from the website. These ASR give you all the information you need to prepare yourself for the event. The ASR should include such details as:
 - a. Event location, date and time. The contact details of the event organisers
 - b. Who can enter and how entries are classified or grouped.
 - c. The type of vehicles permissible. For green fleet normally only standard TUL or TUM Land Rovers are permitted.
 - d. A description of the format of the event.

- e. Any 'ground rules' and scoring system.
- f. Administrative arrangements.
- g. Maps required (if not supplied by the organisers). You can buy maps at www.ordnancesurvey.co.uk/shop/ or demand them through your unit.
- h. Awards and trophies.
- i. Entry fees and an entry form. Unit authority is required for use of Green Fleet vehicles.

Preparing for an event

9. **Getting Organized.** You will probably by now have decided who is going to drive and who will navigate. You should realize that, to be successful, the navigator will have to help with the vehicle and the driver will have to help with plotting the route. However, your main responsibilities can be defined as follows:

- a. **Driver.** The driver is required to:
 - (1) Help the navigator plot the route.
 - (2) Drive safely within the law and their own capabilities at all times.
 - (3) Drive and maintain the vehicle so that it finishes the event and gets back home.
- b. **Navigator.** The navigator has 3 main functions:
 - (1) To plot the route onto the map, where required.
 - (2) To follow the route on the ground and direct the driver.
 - (3) To make decisions during the event to short cut the route enabling the crew to get back on time and into the event incurring the minimum penalty, should this become necessary; the navigator is boss in the vehicle.

10. **Preparation.** You should now be preparing yourselves and your vehicle. The aim is to have the minimum to do in the last minute thus ensuring you are calm at the start of the event. The following are suggested:

- a. **Driver.**
 - (1) **Vehicle.** A fully serviceable vehicle is worth a 20 mile start – check serviceability of brakes, steering, tyres (including the spare), lights, washers, wipers, horn, battery security, compliance with regulations.

- (2) **Tools.** Test the jack, keep small tools handy in a roll, check that the wheel brace fits, obtain a jacking board, as you might have to jack on soft ground.
- (3) **Fuel.** Check that the fuel tank is full, and establish whether you will need spare fuel for the journey; obtain a fuel card.
- (4) **Paperwork.** Check that you have all the documents required by JSP800 and the ASR.
- (5) **Loose Accessories.** As listed in the ASR.
- (6) **Fixed Accessories.** As specified in the ASR.
- (7) **Spares.** Bulbs, lamp lenses, fuses, belts and hoses, for example.
- (8) **Stowage.** Remove all unnecessary items; firmly secure all the equipment you are taking.
- (9) **Familiarity.** Know where the fuses are and which circuits they control; you must be able to find faults quickly, accurately and remedy them; you must know where everything is stowed, especially in the dark, so do you have a head torch or wander lamp to work with?

b. **Navigator.**

- (1) **Paperwork.** Do you understand the ASR; have you read through the Final Instructions (FI), if issued; do you require any special documentation? Refer to paragraph 12 below.
- (2) **Maps.** The exercise organisers normally provide the appropriate maps, but if they do not, ensure that you have the latest edition of the correct map(s). www.ordnancesurvey.co.uk/shop/ or demand them through your unit.
- (3) **Equipment.**
 - (a) **Map board.** This should be firm but flexible, ideally made from thick cardboard, not plywood, and reinforced around the edges with duct tape; also with a couple of bulldog clips.
 - (b) **Clip board.** This should be made from similar material to the map board, but sized to take A4 time cards and other instructions.
 - (c) **Stationery items.** For example: pencils (2B), pencil sharpener, eraser, waterproof pens, highlighter pens, ruler and glue stick. Acetate sheets/tracing paper and fine marker pens for copying traces.
 - (d) **Romer.** Required for plotting grid references accurately. They are usually on sale at events or from <http://www.donbarrow.co.uk/>
 - (e) **Plotting light.** Used usually on night events and the brighter the better, ideally powered from the inspection socket on the

dashboard and mounted in a position to shine down on the navigator's map board.

- (f) **Map magnifying light.** Used to magnify and illuminate the maps while travelling around the course, such as the Don Barrow Potti <http://www.donbarrow.co.uk/> or a hand held battery device such as the issue map reading torch. If using a military Land Rover TUL or TUM, make sure the Potti has the correct voltage bulb. A fire in a Potti often leads to disappointment!
- (g) **Clock.** Should be visible to both driver and navigator, preferably digital and set to event time.

(4) **Stowage.** The following are stowage options:

- (a) Briefcase/nav bag/folder.
- (b) Map pockets on inside of doors.
- (c) Pen/pencil holder.
- (d) Oddments tray – placed between the seats. A taped down box file is ideal and cheap.

c. **Both.**

- (1) Familiarize yourselves with the conventions, symbols and features used on the Ordnance Survey maps.
- (2) Learn the various conventions for route plotting (more on this later).
- (3) Practice:
 - (a) Get a local map, plot a complicated route which is not too long and drive the route, concentrating on keeping the speed down to enable you to follow the route accurately without overshooting landmarks or junctions.
 - (b) Learn to judge distances on the move, especially at night.
 - (c) Look out for features on the map which warn you of possible road conditions, eg a road crossing a stream could indicate a hump-back bridge or an icy road in winter.
 - (d) Develop a rapport with each other so that you can communicate without ambiguous instructions; it may be better for the navigator to give too much information rather than too little, but the information should be 'paced' so that the driver does not get overloaded with too much information all at once; the driver should confirm to the navigator when he has seen the briefed feature. An example:

“Nav-200 (yd/mtr) left bend 90 degrees”

“Dvr- seen”

After the bend

“Nav-300, T (junction) turn right 120 (degrees)”

“Dvr, K, before or after the trees?”

“Nav, just past the trees on your right. Then 500 straight”

- (e) Try some off road driving if you haven't done it regularly before. (All drivers of Mil Vehs must be familiarised on the vehicle and this must be recorded on their FMT600. This will be checked at signing on). It is worth doing some refresher training on a military training area. If you are using your own private vehicle, many clubs offer 'Pay and Play' days. There are usually lots of people on hand to help and advice. Look in <http://www.lro.com/>.

11. **Paperwork.** A few days before the event you should receive the FI. These will include any last-minute amendments to the ASR, administrative details and possibly a list of entrants showing your start number. There may also be some route or map information to enable you to be better prepared on the day of the event; if you already have the map(s) this preparation may include the following:

- a. **Map folds/cuts.** Sometimes the map sheets cover a greater area than you need so the organisers will let you know the exact coverage. You can then cut off any excess and stick together any adjoining maps (remember to keep the offcuts).
- b. **Grid line numbers.** These should be highlighted to make plotting easier.
- c. **Start point.** Mark the location on the map.

Event Day

12. On the day of the event you should arrive in good time feeling rested. Suffering the effects of a “night-before-binge” with little sleep will not stand you in good stead. If you have time to spare when you arrive, use it well by cleaning the windscreen, checking the oil level and tyre pressures, stowing equipment securely and stoking up at the burger van. You should also orientate yourselves and work out where you are in relation to the event area
13. **Pre Event Admin.** You will have to carry out the following actions according to a timetable published in the ASR (the sequence may vary but the nature of the activities seldom vary):

- a. **Fuel.** Ensure you have read the ASR in regard to fuel required.
 - b. **Scrutineering.** Your vehicle will be checked to ensure that it is roadworthy and meets the requirements of the MSA standing regulations and the ASR. The following will probably be checked: brakes, lights, horn, steering, windscreen wipers/washers, exhaust system, tyres, bodywork, seatbelts and battery security. During scrutineering you will also be expected to show that you have the equipment listed in the ASR and that this equipment is stowed securely. If everything is satisfactory, you could be given a scrutineering form signed by the scrutineer. Take this form to signing on. If you fail you could be given the chance to rectify faults and be re-tested.
 - c. **Park.** You should park your vehicle, as directed, in Parc Fermé, possibly in a space allocated to your start number. Strictly speaking, you should make no further adjustments or repairs to your vehicle in Parc Fermé.
14. **Sign On.** Both driver and navigator should report to the Event HQ. There will be a series of desks and notice boards. Firstly, you must prove who you are by presenting your membership card/ID card. The driver must also produce the documents listed in the ASR. Both driver and navigator must sign on, a form is provided for this. Sometimes you'll be issued with maps for the event, if so you'll get these at signing on. You may also be given some information ('Pre-Plot') and/or be directed to a notice board. You should check this now and at regular intervals for any Bulletins that may have been posted.
15. The Pre-Plot package that you may be given could include some of the following: a. Detailed times for the event.

Bramley Express 2014 MASTER TIMING LIST							
Control	Phase	Phase Description	Time Allowed	Due Time Car 0	Due Time Car 30	Colour of boards	Control
Pre event admin 0700-0900 Sunrise 0503 Sunset 2116. Total daylight is 16 Hr 35 min.							
MTC 1	1	Sequential start	45	0900	0930	yellow	Trg base A
TC 2		Sequential end		0945	1030		667567
TC 2	2	Orienteering start	60	0946	1031	kites	667567
TC 3		Orienteering end		1046	1116		Trg base A
TC 3	3	Scatter start	45	1047	1117	White	Trg base A
MTC 4		Scatter end		1132	1202		Trg base A
MTC 4	4	Lunch break start	60	1132	1202		Trg base A
MTC 5		Lunch break end		1232	1302		Trg base A
MTC 5	5	Aerial challenge start	30	1233	1303	yellow oct	Trg base A
TC 6		Aerial challenge end		1303	1333		Trg base A
TC 6	6	Safari start	60	1304	1334	Yellow	Trg base A
MTC 7		Safari end		1404	1434		Trg base A
Prize giving will be as soon as results are declared final. Not before 1500, no later than 1600.							

Figure 2 Example timings table.

- b. A list of officials.
 - c. Lists of various information to be plotted on the map; these can include:
 - (1) Main Time Controls (MTC) and Time Controls (TC), along with the directions of approach and departure and the times that Car 0 is due to arrive at them – add your start number to these times to calculate your due times.
 - (2) Black Spots or Out-of-Bounds areas.
 - (3) Quiet Zones (QZ), Give Way/Stop junctions (GW), Cautions and any other hazards.
 - d. Time card(s) – ensure that you write your start number on each card and insert your due time at each MTC/TC.
 - e. Damage declaration certificate – sometimes on the back of the final time card.
 - f. Start numbers – to be stuck on your vehicle, normally in the top left corner of the windscreen and the rear of the vehicle.
 - g. Route amendments – probably necessary as a result of unforeseen circumstances.
16. As soon as this information is given to you, get it plotted onto the map. Check the time cards so that you know what has to be written where and by whom. Set your watch to the event time, a master clock will be displayed in a prominent place.
17. Make sure that you attend any briefings.



Figure 3

There is sometimes one for beginners followed by the main briefing for all competitors. You will be given instructions on the event and probably some last minute route

instructions; make sure you make a note of these. This is your last opportunity to ask questions on anything you are still unsure of.

Road Navigation Events

18. You'll be given your route instructions as detailed in the ASR. This could be in advance of your start time, on your start time or at intervals during the event. Check your road book is complete and all the pages are legible – you'll not have a chance to ask for any missing pages once you have started. The road book should give you the following information:

- a. Possibly a page of instructions.
- b. The route sections themselves – check they are there, but be aware that some sections may be issued later at selected controls; in that case the road book should say what is to be issued and where.

19. You have no time to waste now; without delay find somewhere you'll not be distracted and where there is plenty of light. Your vehicle may be the best place if you've fitted a plotting light. Read through the road book quickly so that you understand its contents. You must then get on with plotting.

Plotting

20. You will be given a great deal of information on lots of pieces of paper. Try to plot all of it on your map so you won't have to search for a piece of paper in the dark, but don't use up too much space or you may obliterate valuable map information or even parts of the route.
21. Try to get as much as possible of the first half of the route onto your map before you leave the start. There is no immediate need to plot the TC locations for the second half unless you have time. Remember, there will probably be a rest halt and at this point you will be able to continue plotting.
22. How you mark the route on your map is a personal choice, but you would be well advised to use a pencil and not a felt-tip pen. The latter can be awful when the ink gets wet and difficult to erase if you make a mistake! It is considered best to mark the route with a continuous line alongside and, if you have time, to add a second line along the other side of the road (tramlines). Don't forget to add in the detail concerning Route Checks (RC). As you mark a piece of route on the map, tick it off in the road book so you won't try to plot it twice.
23. The route will be given in sections. Typically, a section will be between a known start and a known finish point, probably consecutive TC. By plotting every section you will be able to reproduce the whole route. Most sections will be given in the road book before you start, but some may not be issued until later, at TC along the route. You may therefore have a route with gaps, which you will have to complete when you are given the missing information.

24. **Types of Roads.** Each instruction will tell you what type of road is to be used; if the instructions tell you to use 'Down to and including 'Yellow' then ignore all lower classes of roads, ie 'Whites'. This is particularly important when you are working out tulips and, to a lesser degree, grid references. Roads that pass though out of bounds areas may be used to interpret the route instruction but must never be driven through.
25. **'Not As Map'.** Maps are often not completely up to date and there will be occasions when the map and ground do not agree; bends get straightened and new roads are built. If the difference is obvious or near enough, or errs on the side of safety, no mention will be made in the road book. If it is significantly or dangerously different, you will be given instructions to mark in a new road or the road book will say 'Not as Map', shown as **NAM**.

There may even be cautionary signs or arrow on the ground.

26. Typical methods of presenting the route information are as follows:

- a. Grid References (GR).

- (1) You should be familiar with conventional 6-figure GR. For the purpose of BAMA events, this is often not accurate enough, and so an 8-figure system is also used, sometimes with the 4th and 8th figures expressed as fractions ($\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$). This enables you to estimate a location to the nearest 25m when using a 1:50,000 map. It should be clear that GR of this accuracy cannot be plotted by eye; it is essential to plot accurately using a romer.



Figure 4 use of romer to plot 6517 5919

(2) When using this method of presentation, the route will be given as a list of GR. Plot the first GR and work out the shortest route to it (from the starting point) using down to and including the class of road indicated. Then plot the next and connect by the shortest route as before, and so on. Don't forget to insert any details of cautions, NAM or RC.

(3) . Remember also that GR have to be followed in a specific order. They may occasionally plot just 'off' the road; don't worry about this, it may have been done to make the numbers more manageable for you or it may be that a RC or MSC is in an unmapped lay-by.

(4) You may find plotting quicker if the driver calls out the GR while the navigator plots them. The driver should call out the 4 digits of the grid square first then, when you have your romer on the right place the driver calls the remaining digits, eg 123¹/₄ 456³/₄ would be called out as "12, 45", then "3¹/₄, 6³/₄".

(5) Directions of Approach and Departure. GR may be augmented by the inclusion of information to indicate the required Direction of Approach (DOA) or Direction of Departure (DOD). This is usually shown as a compass direction for example SW 123¹/₄ 456³/₄ NE means approach from the south-west and depart to the north-east.

b. **Trace.** The trace is a very simple presentation and the route you are to take is shown on the route instructions as a line drawing. All you have to do is trace the printed route onto an acetate sheet (or a piece of tracing paper), and then superimpose this onto your map. You should see the intended route quite clearly. If there is no obvious road under your tracing, don't worry, the trace is an accurate reflection of what's on the ground. Some of the traces you will be presented with may be cut up into smaller pieces. You know where you are so you know where to start the trace, just try each piece in turn until you have them all marked on the map. Don't forget to add in all the detail when you are making the trace, such as TC, RC and caution locations. It could save time if the driver does the tracing while the navigator transposes it onto the map. Keep the trace handy, so you can check later, if necessary, for errors.



Figure 4 Map in use

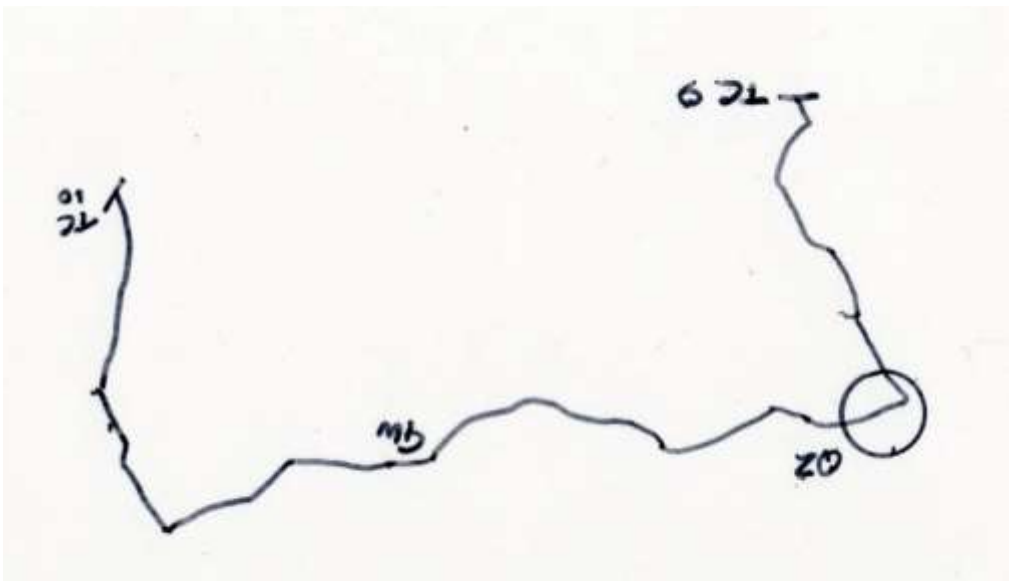


Figure 5 Trace from roadbook



Figure 5 Trace marked on the map

c. **Photocopied map.** The photocopy map method of presentation is simply a section of map with the route details applied and copied, usually black and white. If you have time, it's usually better to apply the route to your map. However, if time is short, then you may be able to follow the route directly from the photocopy. Sometimes the map is in the form of a puzzle and cut into smaller pieces. This can be more testing, but looking for clues like farm names, sections of forest or lake, pylon lines and road numbers should help.

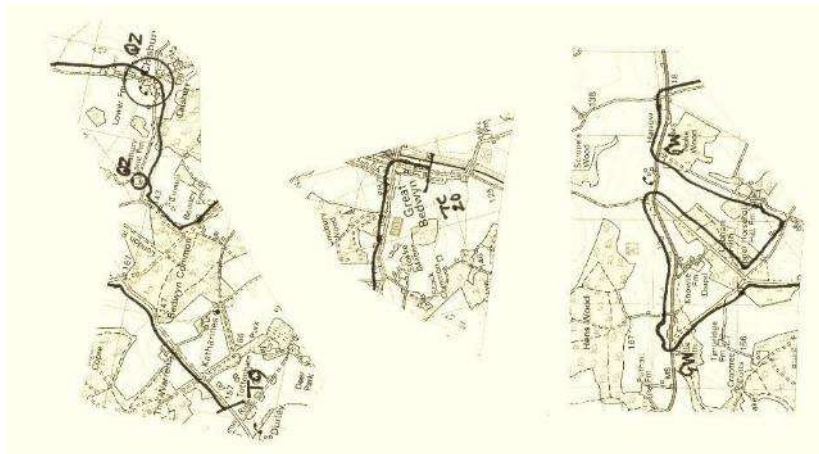


Figure 6 Photocopy map

d. **Aerial image.** The area traversed by the section is shown as an aerial photograph. The route you are to take is either marked on the photograph or given as a trace to overlay on the photograph. You might compare the photograph with the map and transfer the route to the map; beware that the scale of the photograph may not be the same as the scale on the map. As with photocopy map this can also come as a puzzle so apply similar clue finding.

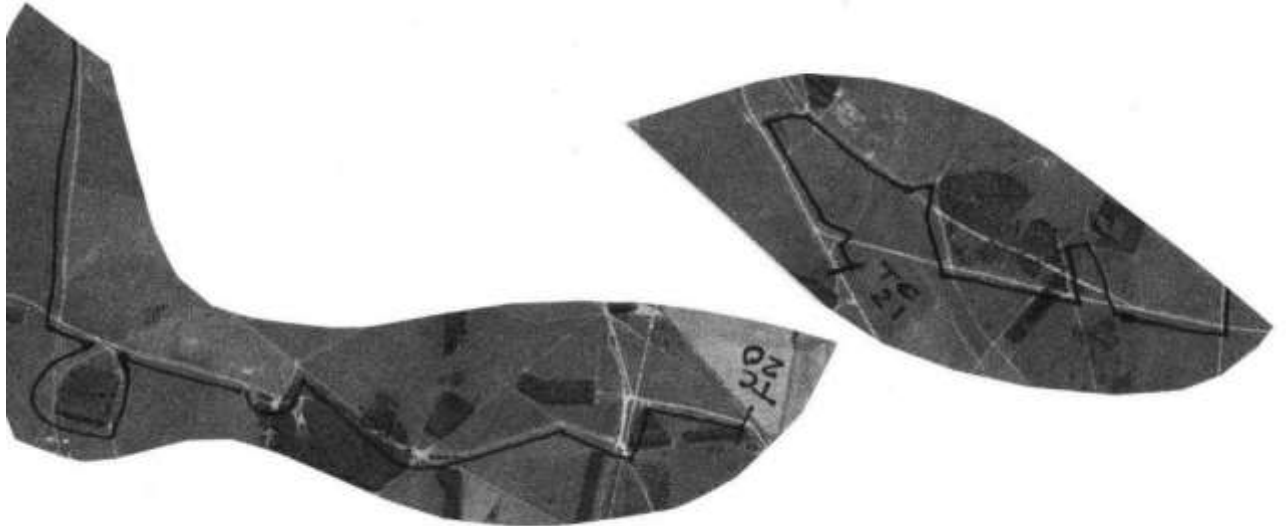


Figure 7 Aerial image puzzle

e. **Numbers.** Sometimes you may be given a string of numbers. These are often spot heights (SH), road numbers or grid lines and often a mixture, with the odd grid reference thrown in for good measure. For example: 92, 107, 176, 171, and 184. From the TC at the beginning of the section, you should depart in the specified direction then look for 92 along that road. From there you must cast around and look for 107. Take the most direct route and then look for 176 and so on. If the numbers are grid lines, from the TC follow the road until it crosses 92, then 107 by whichever roads take you over the line by the most direct route. Sometimes a full GR is inserted indicating a specific location within a grid square, probably a RC, which you should visit. The numbers may be a mixture of SH and GL. The numbers are not always separated by a comma or a space. You then have to be alert to work out where one number stops and the next number starts. Not all numbers are necessarily shown

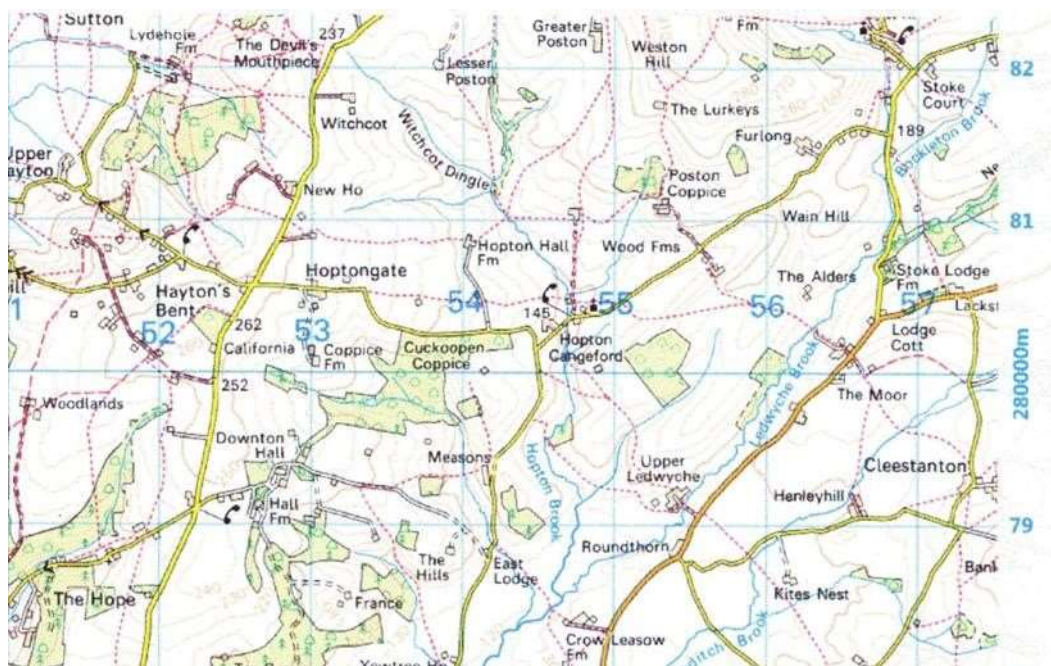


Figure 8. Your map

“Use the following numbers to plot the route to TC 13”: 79 56 80 81 189 56 81 55 145 54 53 262 80 252 53 540790

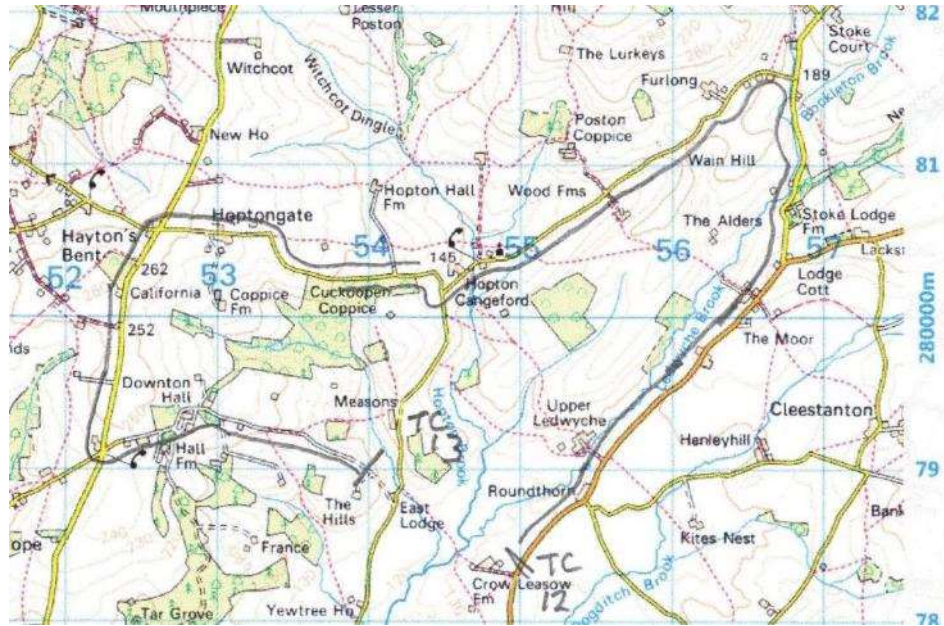


Figure 9 Route plotted on map

Grid line crossing uses the same principle but only uses grid lines, both northings and eastings.

f. **Tulip Diagrams.** Known as ‘tulips’ these are diagrammatic representations of junctions on the intended route. Usually they show a ball and arrow, the ball being where you should approach the junction and the arrow where you’ll depart. There are some things to note, as follows:

- (1) You should only use the class of road indicated.
- (2) Be aware that the tulips may not be in the order of the intended junctions
- (3) Sometimes you’ll come across tulips with no ball or arrow, this requires a bit more thinking about when plotting. This rare in BAMA events.
- (4) The tulips are not always as precise as shown in Fig 12, quite often they are hand drawn.

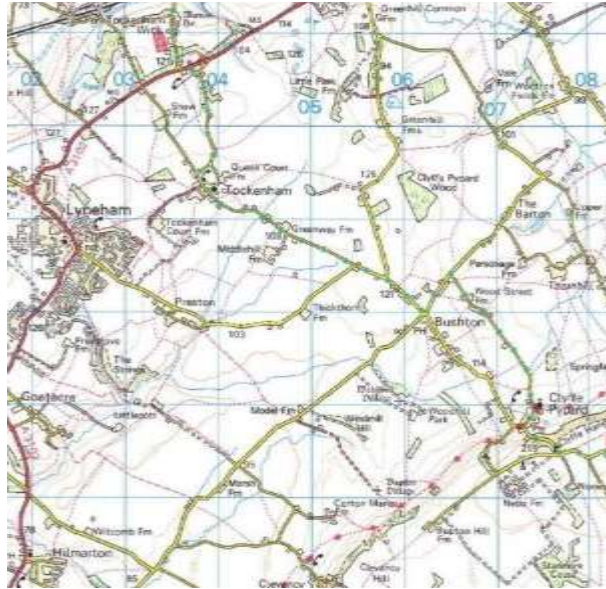


Figure 10 Your blank map

The roadbook gives you the following instructions for the next section:

“Plot the following in order tulips, using down to and including yellows”:

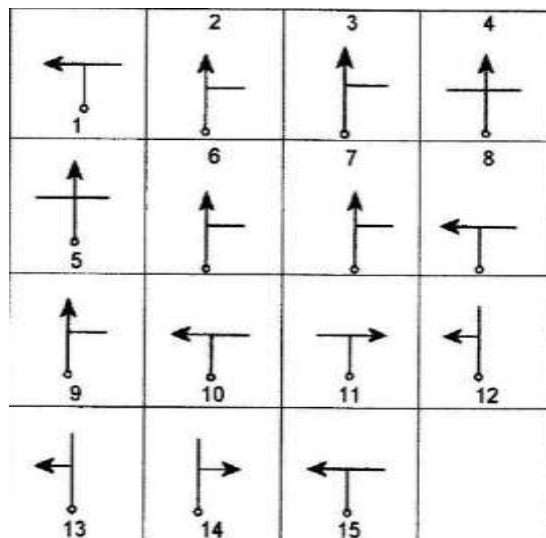


Figure 11 Tulips from Roadbook

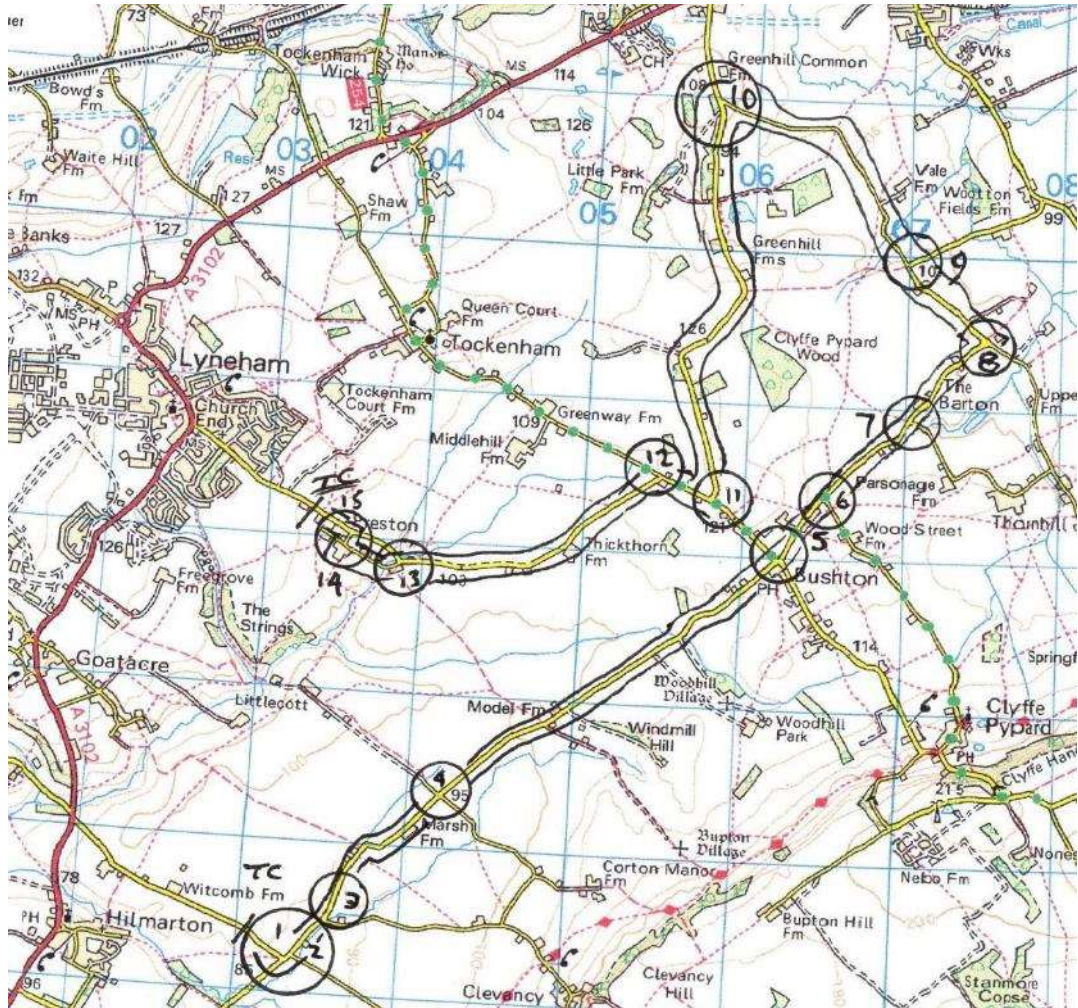


Figure 12 Map marked with route. (Tulip numbers are include for reference)

Following The Route

27. **Setting Off.** The following points should be borne in mind when following the route:
 - a. Get to the start in good time (beware it may be some distance from where you're parked) even if you have not finished plotting, and orient yourselves on the route out. Do your best to complete the plotting but it is better to start composed than with maps and paper flying. (You may have time at a rest halt to complete the plotting.) Stow all non-essentials away and make yourself comfortable.
 - b. Vehicles will set off at one-minute intervals according to start time. Car 1 will leave at one minute past the hour, Car 2 at two minutes past, and so on. Normally, experts will go first, then novices, and then beginners, seeded by the organizers and keeping different crews of the same team apart.

c. Present your time card to the marshal. At your 'due time', the marshal should have handed back your time card marked with their signature and your departure time. Leave in an orderly fashion – it is easy to make a mistake when you are over-eager and rushing.

28. **Drive Carefully.** Remember that it is a competitive event and that crews that finish are, naturally, the best of the starters. It is **not** just a wild thrash into the wilderness by a hung-over crew, in a ropey old vehicle, looking for a ditch to fall into!



Within the rules, follow the route you have accurately plotted. Do not be tempted to follow the vehicle in front of you – their map reading skills may not be as good as you think. Have confidence in your navigation and you will be pleasantly surprised. Some of the tracks will be twisty and bumpy and lined with trees and ditches. Stay on the tracks driving at a sensible speed. The time allowance takes account of the 'going'. Take care. On the other hand, when the navigator tells the driver to stop and turn around, do not go looking for a supermarket car park to U-turn in; stop and turn around at the first safe place. On offroad phases terrain interpretation is very important. It might take an additional 30 seconds to go round a puddle but getting bogged in could cost a lot more time and trouble

29. **Teamwork.** Working together as a crew is most important, particularly when on the move. The navigator can help the driver make the best progress by telling him what sort of bends to expect, as well as which turnings to take. The driver can help the navigator by telling him when they approach features that are likely to be marked on the map (such as junctions, buildings, pylons or the edge of a wood). The navigator must keep track of where they are at all times, and should update their position at every little confirmation. If the road you are on and the map disagree, you are wrong! Stop and go back if necessary to where you were last sure of your position. Every metre down the wrong road costs you at least 3 times the time from when you go

wrong – once to get to where you stop, again for the time taken to get to your last correct position, and again to get the same distance along the correct route.

30. **Controls and Checks.** Your passage of the route is recorded along its length by controls and checks; thus the organisers can determine how nearly you achieve the aim which, you may remember, is to follow the route within the time stated. A 'control' is manned; a 'check' is unmanned. The penalties for missing controls and checks are given in the ASR. Some or all of the following controls and checks may be encountered:

a. **Main Time Controls (MTC).** Each MTC is preceded by a 100m warning board. Your time of arrival will be recorded on your time card by the marshal. The marshal will also mark your card to indicate whether you approached the MTC from the correct direction. If you arrive early, the rules may allow you to 'wait in' at the control for the time that you require. Park so that other vehicles can pass. There will only be a few MTC and visits are usually compulsory.

b. **Time Controls (TC).** TC are exactly the same as MTC and are preceded by a 100m warning board but they aren't usually compulsory. However, if you fail to visit them within the time allowed you will be penalized. There will be quite a lot of TC and you may be given further route instructions at some of them. MTC and TC are in locations known to you. They are the most important of all controls and checks.

c. **Route Check (RC).** These are placed so that the organisers can be sure that you've used the correct route. They take the form of a coloured board with a letter on it. As you pass a RC you should record the letter seen in the next empty box on your time card. Your recording of the letter shown on the board is the only proof of your passage so make sure that it's written legibly and in the right place.

d. **Manned Secret Control (MSC).** As the name implies, the MSC will be manned and its location unknown to you. However, if you drive the route correctly, you will encounter the MSC identified by a 'Control' board but without a warning board. Stop at the MSC and a marshal will mark your time card with the appropriate details. Some MSC will be located in QZ to ensure that you are complying with the regulations concerning noise and lights. They are also used to monitor driving standards such as speed and stopping at GW.

31. **Signs.**

a. All the types of boards being used at controls and checks should be displayed at the start so you can get an idea of what you should be looking for.

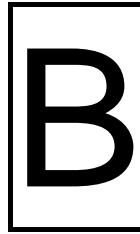


Figure 13 A sample RC board

- b. Some caution boards may also be used. If you see these then, for your own safety, slow down – it could be dangerous.

Figure 14 A caution board warns of a hazard.

32. **Timing.**

- a. **General.** Timekeeping is quite straightforward, but it can cause many headaches. Remember the aim of the event is to follow a specified route on a specified time schedule. You will be given sufficient information to know exactly what time you are due to arrive at every MTC and TC. This will be done by giving you the time that Car 0 is due. All you have to do is add your start number in minutes. However, if you arrive later than your 'due time', or you take an earlier time than your 'due time', you will be penalized. Your time card could also show the number of minutes allowed for each section.
- b. **Penalty Free Lateness.** Once you are late at a TC, you will be entitled to penalty free lateness at subsequent TC. So, if you are due at TC2 at 2021 and you arrive at 2022, you will be penalized for being 1 minute late. You may then

arrive at subsequent TC, 1 minute later than your due time without incurring further time penalty. This is because you have travelled the distance between the controls in the time allowed. If you arrive an additional minute late at the next TC, you will be penalized a further minute, and may then arrive at subsequent controls 2 minutes late, and so on up to the maximum permitted lateness.

- c. **Maximum Lateness.** Every event of this sort must have a maximum permitted lateness, otherwise it could go on for days. The maximum lateness at TC and MTC is usually, but not always, 60 minutes after your due time, ie if you are due at a particular TC at 2021 and arrive at 2121 you are just inside maximum lateness. If you arrive at 2122, you are Over the Time Limit (OTL) and will be penalized for failing to visit the TC within your permitted time. In reality, you have visited the TC but for the purposes of scoring you have 'missed' it. If you are OTL at an MTC you will be excluded, ie you will not be classified as having finished.
- d. **Early Arrival at Controls.** To discourage speeding, penalties for booking in early are twice as many as for booking in late. However, you may arrive early at a TC or MTC, enquire what the marshal's clock is reading, and then wait if necessary for your due time. Make sure you know what the ASR say in this regard.
- e. **Making Up Time – The $\frac{3}{4}$ Rule.** Once you are late, it is usually in your best interests to make up that lateness; you may have a puncture, or get disastrously lost, and in that case you will need as much of your maximum lateness as possible to give you the biggest margin for future errors. However, you are only allowed to make up a certain amount of lateness over each section of the route. The $\frac{3}{4}$ rule says that you must not complete a section of route between successive TC in less than $\frac{3}{4}$ of the time allowed. So, if the time allocated from TC10 to TC 11 is 20 min, the shortest time you can do that section if you are late is 15 min. To help you work out the number of minutes by which you can reduce your lateness, the time card will sometimes be annotated with the maximum make up time for each section. On certain sections designated as non-competitive, you may not make up any time on pain of exclusion. If you break the $\frac{3}{4}$ rule more than once in the same event, you will be excluded. This is to deter you from speeding and taking risks.
- f. **Time Card.**
 - (1) The time card is your score card and on it there is space for you record the letters found on any RC you come across. There is also space for a marshal to fill in their details such as time you booked in and, in the case of MSC compliance with QZ and GW rules. Make sure that you write clearly and legibly in waterproof felt-tip or ball-point pen. At every manned control, check what the marshal writes on the time card and ensure it is correct, because anything wrong will count against you. If the marshal makes a mistake, get them to correct the entry and initial the alteration.

(2) Your time card will also show which controls are compulsory and must be visited within maximum lateness to be classified as a finisher. If you are likely to exceed the time limit at one of these compulsory controls (eg, you are running around 55 minutes late and you may encounter difficult roads which will use up your replacement lateness) you should aim to miss parts of the route to arrive at least within your maximum lateness. This is known as 'cutting and running'.

g. **'Cutting and Running'**. Cutting and running is deliberately going off the route in order to make up lateness or to avoid going OTL. The route will lend itself for you to do this either by missing out little loops to gain a little time, or by missing out a big loop to make up a lot of time. However, give some thought to your cut before you do it. Don't cut such a big loop that you arrive back on route before your due time and then have to wait. Look at the time allowed for each section, work out what time you ought to be where, and aim to get back within your maximum lateness having missed out as little as possible. Missing a TC costs you penalties, although visiting these controls is not compulsory. Therefore, it is better not to 'cut' a TC, but you may consider the extra penalty worthwhile if, by cutting a TC, you can book into the next TC on time without breaking the $\frac{3}{4}$ Rule. Remember when cutting that you must not approach controls against event traffic. Indeed, never go against event traffic on single track roads; it is a recipe for disaster. Also, some white roads may not be 'as map' or may not 'go', so be careful. It is no disgrace to cut and run; many of the best crews have to do it at some time or other.

h. **Actions at TC.** To sum up, on arrival at a TC you should know your due time. Ask the marshal what time they've got, or are giving, and they'll either tell you or show you their clock. That time will enable you to decide what to do, as follows:

(1) If the marshal's time is earlier than your due time and you were not late at the previous TC, you should wait for your due time. Park where the marshal directs you, wait for your due time and present your time card to the marshal for them to sign. If you have a few minutes to wait, make use of the time by getting the driver to clean the lights, windows and do a halt parade on the vehicle. If you have a long time to wait, carry on with any plotting that you may not have had time to complete before the start. Or have quick brew and a fag!!

(2) If you were late at the previous TC, you need to determine your revised due time. This is your original due time plus the amount of time you were late at the previous TC. Try to determine this revised due time before you arrive at the next TC. If that marshal's time is earlier than your revised due time, check the time that you are allowed to make up on that section. Subtract this make up time from your revised due time. This gives you the earliest time you can book in without breaking the $\frac{3}{4}$ Rule. Be careful not to book in earlier than this new due time as you would be penalized for being early. You also have the option not to make up any time and to take your revised due time, making use of the waiting time.

(3) If the marshal's time is the same as your due time (or your revised due time if you had previously been late), present your card, check it and go.

(4) If the marshal's time is after your due time (or your revised due time if you had previously been late), present your card, check it and go. However, beware of accumulating too much lateness and be prepared to 'cut and run'.

(5) In all cases, check your time card after the marshal has written on it before you allow the driver to move off. Ensure that the marshal has put the right time in the right place and that they have signed the card.

33. **Quiet Zones (QZ).** A number of areas along the route may be deemed to be PR sensitive and extreme care should be taken. These QZ will be notified to you either in the pre plot information or in the roadbook. In such areas you must drive on dipped headlights and noise must be kept to a minimum. Failure to observe these simple rules will result in penalties being applied and 2 such offences could result in exclusion from the event. An upset farmer could put a trailer across the track, preventing the following competitors from using the correct route thus ruining the event. Spare a thought for the local residents and for the rest of the competitors, remember the penalties! There are often MSC in QZ to check driving standards.

34. **Judges of Fact.** There may be other controls where you will not necessarily be stopped but simply observed by 'judges of fact' to assess your behaviour – for example stopping at a 'Stop' sign. Improper behaviour may well result in exclusion, so be careful! Judges of fact are also used on special driving tests, to determine, for example, whether you stayed within the limits of a course, and they will award penalties accordingly.

35. **Marshals.** There will be marshals at each MTC, TC and MSC. Most marshals are volunteers, some inexperienced but all will have been briefed on their duties. They should be in the right place and will know where on your time card they have to sign. If you are uncertain of what a marshal has written, get them to explain it. If it is illegible, ask them to rewrite it and initial the correction. If you disagree with their decision, don't argue. Just note the nature of that decision and any supporting facts and wait until the end of the event – you may be able to protest. The marshals will be trying to be cheerful and helpful – help them in that. Above all, be polite.

Finishing and Scoring

36. Finishing.

- a. Remember the maxim "To finish first, you must first finish". It is better to drive steadily and safely, perhaps with a number of penalties, and finish within your maximum lateness than to tear around the countryside taking risks to cover the route on time and end up in a ditch or being excluded for a traffic offence. The crew that misses **many** controls or checks but does not go OTL is classified as a finisher and could be eligible for an award, especially one of the team trophies. The crew that misses **few** controls or checks but goes OTL is not classified as a finisher and is not eligible for any individual or team award.

- b. The most common reasons for not finishing are:
- (1) Going OTL, by doggedly following the route no matter how late you are.
 - (2) Breaking the $\frac{3}{4}$ Rule twice, by cutting and running without paying attention to the maximum time you are allowed to make up on a section.
 - (3) Making up time on a non-competitive section.
 - (4) Morale failure, which can be caused by a number of conditions, most of which you will experience during the event, for example: getting lost; feeling tired; travel sickness; argument between driver and navigator or the “what-ami-doing-here?” syndrome. It may be some consolation to you that every crew goes through the same difficulties. The cure? Don’t give up; take 5 or 10 minutes to remuster, and keep going! You need only visit the MTC within maximum lateness to be classified as a finisher. When it starts to get difficult, remember: it’s the same for everyone; the good crews don’t give up!

37. Scoring. The method of scoring is always explained in the event specific ASR

Off Road Events

38. All the information in the preceding paragraphs can be applied to the offroad phases of a BAMA event. There are some different aspects as follows:

- a. **Night or Day Navigation.** This is very similar to road rallying but usually on unsurfaced tracks. Crews could be presented a route in any of the forms described previously or on a marked map that they must follow. Along the route will be Route Checks (RC) in the form of a letter on a board which the crews must record in the appropriate space on their Time Card. The RC have been placed by the organisers to confirm adherence to the route.
- b. **Scatter.** This will be entirely off road and usually on a military training area. Crews could be issued a map or aerial image marked with numerous control locations. There will be a RC at each control location. Crews must visit as many controls as possible in any order, by any safe route within the allocated time and record the RC that are placed at the control location in the correct box on the Time Card.



Figure 15. This what you're looking for!

- c. **Aerial Challenge.** Crews are usually issued an aerial photograph marked with the RC locations. The RC will have different penalty values; each RC's value will be based upon its location. RC that are considered easy to find will have a lower value than RC located in more demanding positions. RC can be visited in any order by any safe route. Crews are to record as many RC as possible within the given time limit in the correct box on the Time Card.



Figure 16 Aerial challenge at Longmoor

- d. **Obstacle Trial.** Crews are to follow a route marked with arrows via obstacles that have to be negotiated without stopping. Crews are to complete the course within the allocated time allowance. Sometimes a trial is used. This means driving through a series of 'gates' without stopping or hitting a 'gate'. The terrain is usually quite demanding and good route selection is essential.



Figure 17 Safe and skilled driving on a trial

- e. **Safari.** The Swahili word for journey. This phase can be presented in many ways and is often presented in a variety of ways for different parts of the phase. Crews could be issued with a sketch map marked with a route. Crews should follow the route within a set time limit and record the RC that have been placed in undisclosed locations along the route. The safari is usually on tracks of mixed surface and severity of terrain.
- f. **Sequential.** Crews could be issued with the route in different ways. Usually some form of map is used and locations are either marked on the map or given as grid references. Sometimes these locations must be approached and departed from in specific directions. The Direction of Approach (DoA) and Direction of Departure (DoD) are as shown in paragraph 25a (5). The controls must be visited in order, hence the name, and RC found recorded on the time card, all within the allocated time. Some locations could be manned to ensure you visit in the correct sequence.
- g. **Orienteering.** This is exactly the same as orienteering on foot. Crews are usually issued an orienteering map marked with the location of the controls. At each location crews will find an orienteering kite. Using the pricker attached to the kite, crews must punch the corresponding box on the Time Card. Sometimes you visit the controls in any order sometimes the order is specified. Usually by any safe route and in a given time. There could be manned controls to ensure you visit in order if that is specified.

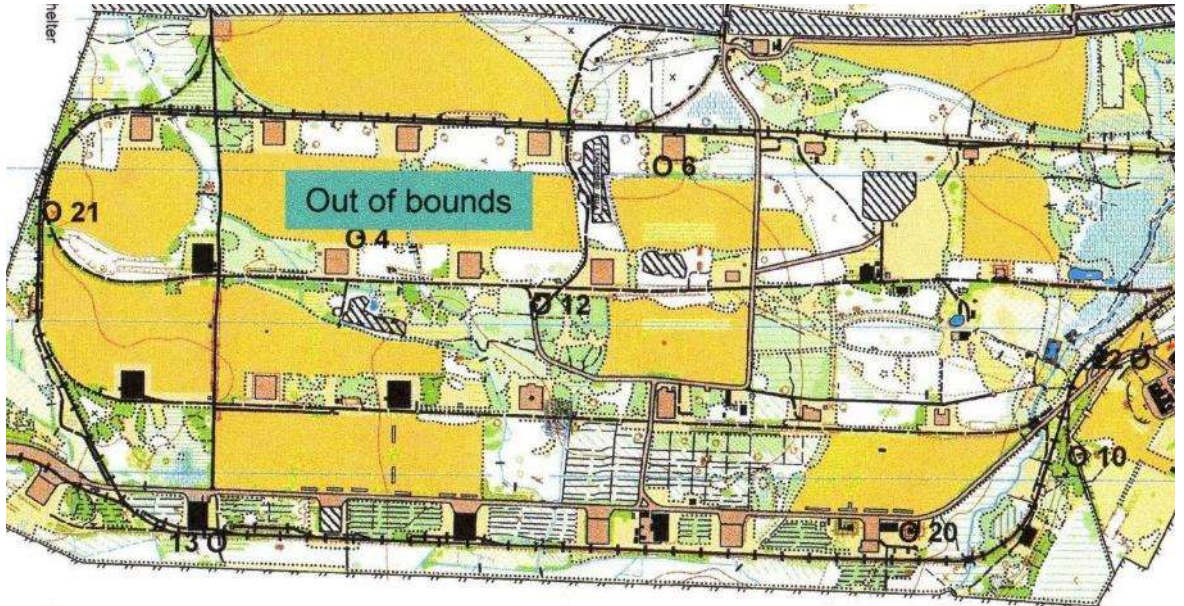


Figure 18 Orienteering at Bramley

Conclusion

39. These BAMA events could appear complicated to you at first, and that's part of the challenge. You will make mistakes, lots of them, but so will the experts. However, if you read this Guide carefully, and if you prepare yourselves between now and the event, you will stand a better chance of achieving a good result and you'll realise how much fun it can be and understand the training value for service personnel. If you have questions about this guide please email compsecbama@gmail.com