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P READI
TRAINING, SCOUTING
VATION-& CAMOUFLAGE.
By "THE SCOUT"

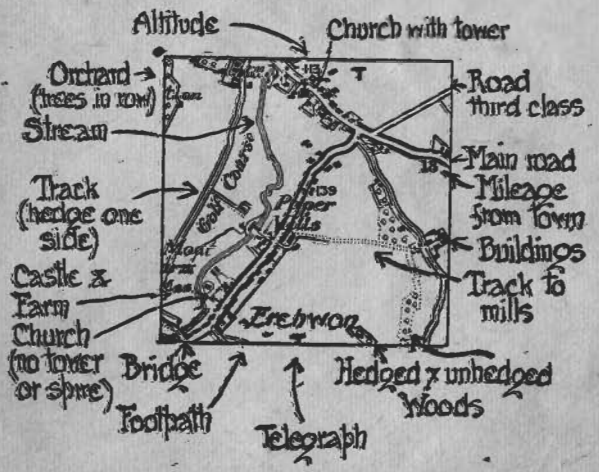
SUCCESS
DEFENCE

6

MAP READING
and
FIELD TRAINING
FOR
HOME DEFENCE

By

"THE SCOUT" (A.S.M.)



THE ORDNANCE MAP
Diagram 1

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Preface . . .

IN compiling this book on map reading, field training, scouting and observation, I have had in mind that great mass of our citizens who in their generations have had little or no training or tuition in such matters which are now vital to HOME DEFENCE. And to these folk, who may have to undertake graver duties than ever before in our history if paratroops or other forces were to invade our land, I have endeavoured to explain, in as simple language as I can command, some of the essentials which must be understood and appreciated in order to engage in the form of guerilla warfare which alone can combat modern invasion methods. I have based my text on active service experience as a scout, sniper, and observer, with the added experience gained with Lovat's Scouts and South African Sharpshooters.

A. S. M.

LIST OF ILLUSTRATIONS AND DIAGRAMS

INDEX

The Meaning of Contours

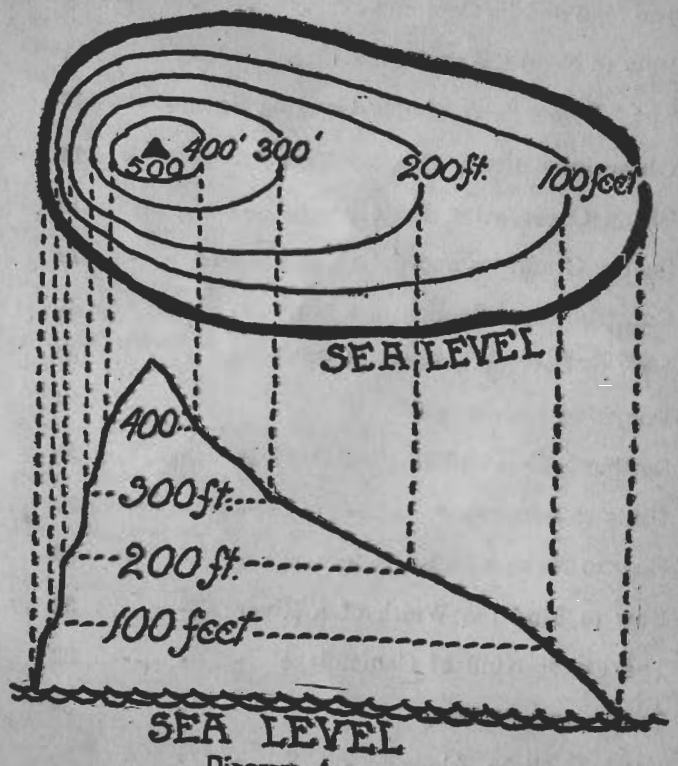


Diagram A

What is a map? . . .

Strategy plays an important part in offensive and defensive tactics; and in either role the strategist, even though he be a unit in the Home Guards, should be capable of surveying the terrain over which the possibility of campaign may be conducted.

His most reliable comrade is a good map!

It tells him of streams, fordable or otherwise, mountains and swamps to be circumvented; woods; isolated farms, where invaders through the night may be lurking, and gives him invaluable information.

A map is simply a plan of the ground under observation, with the lay of the land marked in contour lines showing the respective altitudes over sea level.

Other ways of denoting altitudes are by "hachuring," those feathery lines—thick at the top and tapering away down to the plains—which we used in our schooldays, and which are often used in newspaper maps; and by colouring, as in the excellent maps of Bartholomews, where deep browns denote mountain tops gradually fading into the light greens of pastoral plains.

The diagram "A" opposite illustrates in simple fashion the meaning of contours.

The lower section pictures a Gibraltar-shaped island as it would appear through a periscope from the sea; while the upper section shows how the island would appear from an aeroplane.

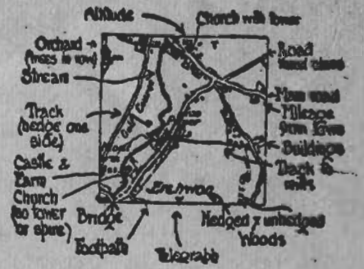
Dotted lines cut the island in layers of 100 feet thickness, making the highest altitude of it into 500 feet above sea-level.

Dotted lines also carry these layers of thicknesses to the plan or map above.

The thick line denotes the shape of the island—the sea level, of course, signifying its shores.

The small rings, or *contour lines* run round the island at the various altitudes marked on them, while the little black triangle denotes the peak, 500 feet high. The steepness of the left side of the island is shown by the closeness of the contour lines on the section above.

The Map and its Contours



A HOME GUARD should get himself well acquainted with the whole surrounding country of which he is but one of many patrollers, and the most concise way to do that is by studying the Ordnance Map—preferably the "One Inch to One Mile." Every Home Guard should be trained to read the map, precisely and quickly; and be able to picture the terrain it plans, the ways where the going is good, and those that are just the opposite. By the contours he should learn where to take cover and the route to take—unseen by the enemy. In fact, his whole plan of campaign can be plotted by glancing at that small bit of papered canvas.

A MILE to an inch Ordnance map is a wonderful fount of intelligence. For instance, in the square inch illustrated in diagram 1 (also see inside title page), which has been chosen haphazard (with only the name altered), there are at least 20 objects marked—each telling its own story. Nothing apparently is missing.

From the main highways down to the wildest of paths all are indicated in their respective styles and colours—private roads; unfenced; if the rise is above 1 in 7; and the mileage between places; railways, canals, lines of all kinds, bridges, over and under roads; viaducts and cuttings, churches, with spires, towers or neither; windmills and pumps; parks, woods, orchards, hedged or not; post and telegraph offices, and even ferries, rocks, lighthouses and ships, and beacons well out at sea.

Contours, a labyrinth of brown lines, are of the most military importance. The diagrams speak for themselves! In diagram 2 the rising contours denote a hill, and vice versa, a valley; also spurs overlooking a valley or ravine down which a stream is flowing (the stream must flow from the apex towards the open base of these V shaped contours).

The contour lines are graded in 100 or 50 feet as a rule, although in very flat lands like Lincolnshire, they may be graded even in 10'.

In mountainous regions, where the 50 feet contours run close together, one line in five is numbered, thus rising numerically in 250 feet—this line is marked thicker than the others, to make it easier to follow round the mountain's side.

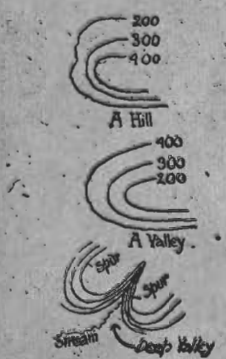


Diagram 2

CONTOURS
Diagram 3

If the contour lines run closer together at the summit (as in Diagram 3) on the left slope, it means that the slope is concave, so that an observer on the hill-top would be able to see a man at the bottom or climbing up. But, if the lines run closer together towards the base, as on the right-hand slope, then that slope is convex; thus the man at the bottom or climbing up, would not be visible to an observer on the top, whose line of vision would go well above his head.

Diagram 4 depicts a rough contour map of Black Hill in the Pennines—strangely known as Soldiers' Lump (probably it was a British camp in the days of the Romans, who had a large camp at Almondbury a few miles away). In shape, it looks like a gigantic squashed tomato. The black triangle denotes the summit, as in all such maps, with the spot altitude above sea level (1908 feet). The 1900 contour must measure almost a circle, about half a mile diameter, of plateau, as the highest part is only 8 feet higher.

The map suggests it was a good site for a camp, as the Saxons must have discovered—even though they had no maps. [My old friend, Ammon Wrigley, the moorland poet, has dug up many flints and arrow-heads on these wild mountains.] There is no doubt it would be a formidable position to attack, with bold spurs like C and B, and deep ravines like A. On the western side D, the slope is more gradual into an expansive range of the Pennines.

THE contours would decide the plan of attack on such a stronghold. The scouts would be the first to reconnoitre for the possibilities, and on their advice would largely rest the responsibility of the assault.

One can picture the character of the ground, mountain torrents tearing down the ravines over boulders

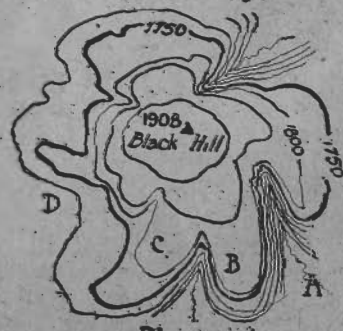


Diagram 4.

of millstone grit, of which the Pennines are chiefly formed. These streams would be easy to cross, because so near their sources with many rocks strewn

about to make excellent cover. On the west side, the going would be easy, although inclined to be marshy, but dry beds of new-born streams would be hard, and gravel sandy.

It would be interesting for a Home Guard, to picture in the mind's eye a portion of map such as this, and to describe its many points of vantage, and the character of the terrain generally, and then go over it to see how correct were their surmises.

How to read the Ordnance Map

Diagram 5.
An actual square of a certain ordnance map of an unmentionable district.

HOME GUARDS grumble that they get too little instruction in map-reading, and letters to that effect have appeared recently in the Press, so a few instructions should be appropriate. England is mapped out in sections, numbered from one to over a hundred (including one section for the Isle of Man), by the Ordnance Survey under the Authority of the Ministry of Agriculture and Fisheries. Although Maps may be in any scale, the most useful for Home Guard purposes is the 1 inch to 1 mile, or 1/63,360.

[In the "Modified British System" the scale is 1/25,000 or 2.5344 inches to the mile, where each square is a kilometre each way, which, rising in tens, makes simple reckoning. For military purposes these squares are marked in purple on their 1 inch to 1 mile maps.]

TO study the Ordnance Survey is an education and a fascination; and to the rambler, a reminder of "Happy Days."

THE ordnance map is on the Grid System, divided into squares of 2 inches, which conveniently measures out 2 miles each way. These are lettered in rows downwards, the letters being marked in the margins at each side; they are also numbered in vertical rows from left to right, i.e., west to east. The lines of the squares run due north and south and east and west, but not the north of the compass. For the vertical lines to point to the Magnetic North, the map would have to be switched round to the left 11°, as the Magnetic N. is so far to the west on a line running towards Greenland. This difference is marked on the right-hand margin of the map by pointers—it is over 14° on my map, which was registered in 1924. This angle of difference is getting smaller each year by approximately one-tenth of a degree.

The roads were revised on this map up to 3/27, so more margin information says, i.e. March, 1927. Of course, there has been a lot of new road construction since then!

IF we desire to give a map reference, taking Diagram 5 as a convenient example, we take a point in the square at the bottom right-hand corner, say the last dwelling going up towards the right slope of Longstone Edge in the hamlet of Rowland, marked just under the "d" in "Old lead mine."

IN a map reference, this spot would come in the square marked 19.N. (i.e. square 19 counting from west to east—which is termed "Eastings"; and letter N upwards, termed "Northings"). All points are

reckoned from the west-south corner of the map, and the "Eastings" are always read first. To get a more exact reading, it is necessary to divide this square into a hundred smaller squares by imaginary lines (or real) after dividing each side by 10, as in Diagram 5.

Thus in the further divided square the house marked with a cross is in 8 (easting), 5 (northing), or to go to another decimal stage, 83 and 52. Thus the position would be 19.N.8352. Eastings and northings must always contain the same number of figures, and it is as well to use the smallest reference that leaves no doubt.

The "Romer"—
A simple gauging square

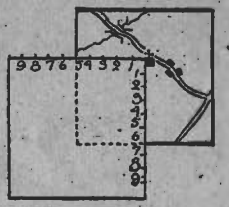


Diagram 6

A SIMPLE device to find the position of a point in a square of the "One Inch" is to cut out a piece of thin card the same size (2" by 2"), and divide each side into 10 and number them, but adverse ways as in Diagram 6. Then, by putting the corner where the "1's" meet on the desired spot, and keeping the edges parallel with those of the map square, the figures where the edges of the two squares cut will give the readings. The gauging square is called a "Romer." So the reading of the church in Diagram 6 is 51.65. The end joint of the little finger is a good measure for a mile, being usually an inch long on normal persons.

Besides the mile scale being on the bottom margin of these Ordnance Maps there is also the kilometre scale, besides a fount of other information.

Observation Posts—Siting a Target

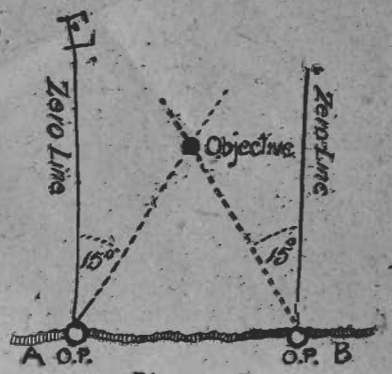


Diagram 7

IT is often said against the British that they fight a war on the same lines as they fought the last one, which might be true—for a very short time. However, there is always something to learn from a previous war; and as far as Home Guards are concerned, the ideas of Boer Commandos can be very useful—they waged a guerilla war for three years, against better armed forces. In the last war, there was a system of observation work in the trenches, which could now be useful and adaptable to a certain extent in watching for the invader.

DURING the Great War (1914-1918) a system of observation work in the trenches was used which is well worth while studying by amateur scouts. In the front line trench were concealed observation posts (O.P.'s) at intervals, which were manned by the scout-observers, who, as a rule were qualified snipers, too. In the posts were powerful telescopes, compasses, and trench maps—a maze of many colours, which told of everything that had been proved (or suspected), from previous observation reports, viz., cyclists' tracks from headquarters to the line, company headquarter dug-outs, snipers' posts, gaps in wire, camouflage screens, saps, tunnels and mines under suspect, light railways, rail-heads; in fact, practically everything.

By mutual arrangement, each of these O.P.'s fixed on a line through a certain point of the compass which they made the Zero line—and due east was often a suitable Zero line.

KEEN eyes were at the telescopes before day-break, patiently waiting, for dawn was the most important part of the day. The enemy were apt to be careless—thinking they could not yet be seen—and many paid the penalty. Supposing from O.P. (see diagram 7) A (the observer) should notice something happen on a line 15° on the right of Zero line; and from O.P., B (the observer) at the same time, should see the same happening on a line of direction 15° to the left of his Zero line; then, where the two lines of direction crossed would be the exact spot where the episode, gun-flash, or whatever else it might be, occurred.

It is the method on which all range-finding is based—knowing the base and two angles of a triangle to find other angles and sides.

As also the Zero line was definitely marked on the map, it was simple to draw a faint line, by means of protractor, on the map of the direction required.

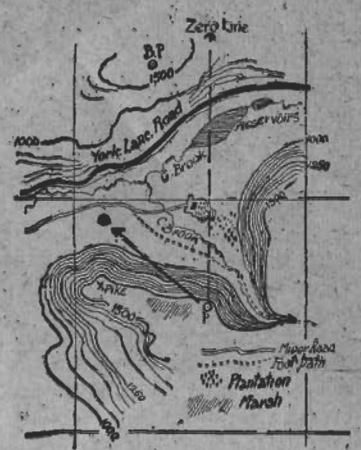
THIS idea could be made very useful here. In all our counties are elevations which command extensive views, which would make splendid sites for O.P.'s. Anything suspicious that might happen on the terrain in view, should be positioned by lines of direction at angles noted from the Zero line, and the spot should be located on the map. A quick decision should be made, and if necessary an ambush made on the spot.

On laying an ambush, the map again is very useful in showing the folds of the terrain, where one can advance without being seen.

It is common-sense, that if invaders land by parachute through the night, they will keep as concealed as possible, and wary when they look around to find their whereabouts.

DAWN therefore, will be the time for Home Guards to have their "eyes skinned."

Siting Observation Posts . . .



Ideal Position.
Diagram 8

HOME GUARDS, and scout-observers on the look-out for parachutists and other threats of danger in the open country should have a well-hidden Observation Post on a high altitude which covers an extensive field (not *on* the top of a hill, but *near* it). Vimy Ridge was one of these during the Great War, with the result that it was violently contested. This famous ridge, where the Canadians won glory, commanded a view that extended for miles,—especially to the east over the enemy lines, with the crumpled devastated Lens, Souchez, etc., at its foot.

Many important railway lines could be seen, which gave away troop movement; this was specially pronounced before the great German offensive towards Amiens. As observers, we could see through our telescopes, girls going to Mass in Lille on the Sabbath morn—which would be almost twenty miles away; but the day must be one of good visibility and the white head-gear of the girls in mass stood out comparatively conspicuous.

There are many ridges like this in the country that have as extensive a view nearly all round the points

of the compass. Settled in his O.P., the observer should have spread before him an ordnance map, 1 mile to 1 inch. On it could be marked in blacklead his own Zero line (as shown in a previous article), picking some conspicuous object in the distance, and set it also by his compass (in this case a tall tree in the plantation is chosen to set the Zero line by, which happens to be due North). As a diagram, I have sketched roughly a map of part of the northern moorlands, with the names slightly camouflaged. (Diagram 8.)

A fine O.P. position would be as marked on the map at P., not as high as X to the left; but a better viewpoint to look up the valley on the right, besides the other two valleys. An O.P. on the highest peak X would not overlook the former valley, owing to the spur on which our O.P. has been chosen; as a line of sight will show.

The Zero line, in this case marked by the broken line runs north, so that any object observed will be on a line of sight so many degrees West or East of it, which could thus be faintly drawn on the map by aid of the protractor and compass. By judging contours and other markings on the map the exact spot of the invader or object spotted could be marked (as in black dot). To facilitate this the squares which are 2 in. by 2 in. on the 1 inch map could be divided again 10 divisions each way, as mentioned previously.

The British Ordnance map squares are numbered on the top margin and lettered down the sides; so that the object marked with a big dot would read:—13.D. 15.90

It will be seen that this O.P. observer has a very large angle of view looking down on three valleys; and should be able to spot anything untoward happen-

ing beneath his survey. He also has command of the main arterial road, and could see everything passing over it through his telescope or binoculars, as the road is on the rising contours.

Any suspicious character near the reservoirs he could detect. The footpath below him must be of a wild nature according to the map; and from the contours almost running into each other, must rise steeply into a ravine, down which a torrential stream must tear, with steep rocks on each side. He could easily heave boulders down on the enemy, and by reaching the skyline (unseen by anyone below) could signal by semaphore or morse to headquarters down the valley.

His glasses could scan the side of the opposite mountain, which also would provide a good position for an O.P.

The marshy land around him would detract from anyone taking him by surprise; and also nature, in the shape of grouse, pipits, merlins, etc., would give him warning of danger. If, perchance, a parachutist or two should land through the night, one would surmise that an attack would be made on the isolated farm in the plantation; and that the invaders could be spotted and ambushed.

In the stillness of night on these wild moors, aeroplanes could easily be heard,—and seen; for no night is too dark to a trained man, who has got his "night-eyes."

Any suspicious light shown in the night should be marked on a line of vision from one (or more) O.P.'s to be traced later in the daytime

One good way is to sight it with a rifle, which should then be fixed,—very definite proof.

Scales, Gradients and their Calculation . . .

THE Ordnance Map, Scale 1 inch to 1 mile, is the one most useful in these islands. In the margin beneath it is measured out 5 inches representing 5 miles—the first inch before 0 being divided into 8—representing furlongs. "Scale of One Inch to One Statute Mile $\frac{1}{63,360}$":—so 1 inch on the map represents 63,360 on the ground. (It also gives the scale in kilometres, but that can go by the board at present).

So any length measured on the map represents 63,360 times that length on the land, and this is expressed as a fraction—the *Representative Fraction*,—the "R.F." The numerator and denominator must, of course, be in the same units of length. For instance, if the scale is 6 inches to 1 mile, then 6 inches on the map represents 63,360 on the land—so 1 inch will represent 10,560 that length on land—so the R.F. is 1/10560, $\frac{1}{10,560}$.

For example, to find the real distance between two points on a map; measure the distance on the map and multiply it by the denominator of the Representative Fraction.

Supposing a distance is 3 inches on the map and the R.F.=1/6000. So that 3 inches represents 6,000 as much in reality.—18,000 inches,—500 yards.

There are two ways of expressing the nature of an incline, e.g., "one in six," meaning one climbing unit for six horizontal units on the ground; or in degrees, e.g., 10°, meaning an angle of 10° upwards from the horizontal.

To express a gradient in degrees, multiply the gradient fraction $\frac{\text{Height}}{\text{Distance}}$ by 60. Thus a gradient of 1 in 60 represents one degree—that is 1°.

In a similar way, a gradient of 1 in 15 = 4°.

To all practical purposes, in expressing the gradients of roads, this method serves; as a road seldom rises more than 1 in 4 or 15°; but one can realise that in going up a steep mountain side, the distance to travel is much greater than the horizontal journey would have been. For example, climbing (the gradient of) a ladder, the horizontal equivalent is next to nothing.

Finding the "angle of sight" comes in useful to gunners, and other target finders. In the case of a road rounding a hill, it may be useful to know the gradient from a point on that road to the target on a distant hill. According to the map, the road runs round the 400 feet contour line, and the hill is 700 feet high,—a difference of 300 feet, and the distance away is 2,000 yards. So the gradient fraction would be in yards $\frac{100}{2,000}$ —that is 1 in 20 or 3°.

Useful Hints . . .

Learn conventional signs and indications at foot of map, and scale.

Read magnetic variation on right margin and year of survey.

Bring same up to date by subtracting about one-tenth of a degree per annum in London.

"Picture" the land from the contours.

The closer the contours the steeper the hill.

If the contours are closer towards the top of a hill, the slope is concave.

If the contours are closer towards the bottom of a hill, the slope is convex.

Constructing a section of a map . . .

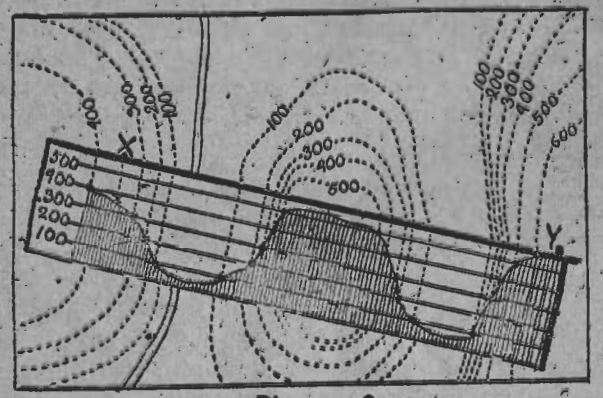


Diagram 9

A SIMPLE way of finding out when certain objects are Mutually Visible is to make a "section" of a map; and also, in this way, one can form some idea of the lie of the land or road on which one must traverse.

Putting it bluntly, making a "section" is like cutting with a knife perpendicularly downwards, just like cutting through a loaf of bread.

As an example, supposing one desired to know whether X and Y on the map were visible to each other, a "vertical section" would be made by putting the straight edge of a strip of paper to make a line between these two points. Then mark on the strip of paper parallel lines to the edge of the paper equidistant apart to represent the contour lines, and number

them upwards from sea-level. (In diagram 9 they are numbered in hundreds of feet.)

The intervals between matter little if they are uniform, but one must understand that the section will be exaggerated.

Now from the point where each contour-line (and also X and Y) touches the edge of the paper, draw a dotted line perpendicular down, until it contacts its corresponding numbered horizontal line, and there make a mark. When all these marks are joined up the "vertical section" will be made.

So, in this manner the land takes shape, but in an emphasised way. It shows that objects X and Y are "Mutually Invisible" owing to the lump of hill between. It also shows the convex and concave slopes of the hills. X might just be able to see the road that runs down the left-hand valley; but Y would see nothing but the top of the middle hill. He could not see into the second valley until he came down to the 500 contour-line—a descent of over 100 feet.

This exaggeration of the altitudes or "vertical sections" is useful, for it can well be understood that if the heights and horizontal distances were given in their real proportions that "Mutual Visibility" would not be as plain to see. In making a "Section" of a winding road, the distances are measured with a pair of dividers and measured on the strips of paper, and in this case arrows are marked at the turns with the compass degrees on them, like "→ 90°." So a circular road would have marked on it all the degrees of the compass.

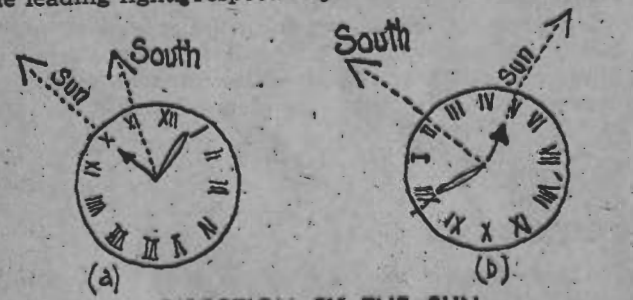
How to develop a sense of direction . . .

With the lack of sign-posts and road-signs, it is essential to acquire the sense of direction, not only by aid of the map after setting it, and finding your bearings.

The compass, in addition to the map, is a great aid, but many other means are useful.

There is a simple way of finding the points of the compass from a watch—providing the sun is shining. The sun gives you east and west in its rising and setting, and also south and north at noon—depending on which side of the Equator.

At night the North Star and Southern Cross are the leading lights respectively.



DIRECTION BY THE SUN
Diagram 10

To find the south by the sun, it is only necessary to lay your watch flat in such a position that the hour-hand points in the direction of the sun. Then a line marked half-way between the direction of the sun and twelve o'clock is due south. In the morning the half-way line is **forward** of the hour-hand, as in the diagram 10 (a); while in the afternoon it is reckoned **behind** the hour-hand, as in Diagram 10 (b).

The halving process is necessary because a watch is only a 12-hour circuit, while the sun's is 24.

The Pole Star, which is only two degrees out of true north, is easily found from the pointers of The Plough (with the W formation of the constellation

of Cassiopeia on the opposite side).

It is useful and fascinating to learn the many star formations by observing them as regularly as possible, and also the different planets that are prominent in their respective periods.

There are many other ways of finding direction; by the prevailing winds for instance. Especially is this noticed near the sea-coast, where the trees have a leaning towards inland. The south, or sunny side seems also to draw the foliage; and tree trunks are more colourful (with lichen, moss, ivy, etc.), on the north and damp side.

Particularly is this noticed in the beech tree. Climbing ivy and other ornamental parasites will naturally seek the moisture, which is also, naturally, the side on which the sun never shines.

If you notice which way the wind is blowing when you begin your journey, it will help your sense of direction; but one should be accustomed to note a change—especially the violent ones, which forecast storms.

Points to remember . . .

A river flows from the "hairpin bend" of contours towards the "mouth."

Most "spurs" of hill are convex and difficult to defend because attacking troops are hidden in "dead ground."

A "re-entrant" is a valley running up into a hill, most have concave slopes, difficult to attack, as attackers are "in view."

A "col" or "saddle" is a hollow connecting two hills.

The Pole Star is within 2° of true north.

Setting a map and finding one's bearings . . .

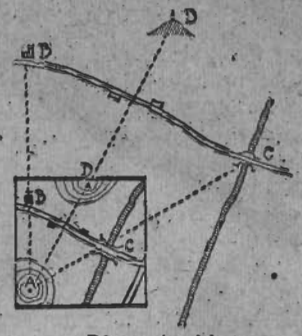


Diagram 11

BESIDES being able to read a map quickly and accurately, it is essential that a Home Guard or scout-observer should be able to "set" a map, and also to "find his bearings."

To "set" a map is to so fix it on the ground or a table so that points on it should tally with the same point on the landscape, and should be on the same line of direction.

For instance, in diagram 11, the square represents a portion of a map laid down, with "A" as the position (on a hill, as denoted by the contours) of the observer.

When the lines of sight are extended off the map, they "find" their objects on the ground.

A to B takes the symbol (black square and cross, denoting a church with a tower) "in its stride" on the map, on its way to the real church in the view.

The same thing happens with the high-spot on the hill, as denoted on the map with a black triangle. The line of direction here, it may be noted, goes between the two buildings on the road B to C.

The same thing applies to the bridge C, which carries the road over the river.

There are several ways of setting a map. The most simple and common way is to find such conspicuous objects in the landscape as the church, A; hill, D or bridge, C, and so turn your map on the ground that the marks denoting such objects on the map point on the same line of direction.

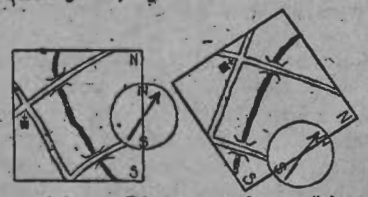
It is then simple to find all other places marked on the map in reality.

Another way is to take a road like B, C, and run in a parallel line its marking on the map—or in a similar way with the river. This method, of course, is fairly simple if one's position is on the road, but not so simple if one's position is not on some conspicuous spot.

When the terrain is difficult to read, the best way probably to set a map is by compass, and thus placing the map on a true north and south line.

Ordnance and military maps are marked off in squares with vertical lines running due N. and S., and horizontal, E. and W. It has been shown how to set by sun (by aid of a watch) and Pole Star in a previous article, but the sun doesn't always shine—especially in this country.

The North point on the compass is the Magnetic North, which as far as this country is concerned, takes a line of direction to a point of the north coast of Canada, through Greenland; and is roughly 11° West of the true North line. This angle of difference is getting less each year, by about one-tenth of a degree.



(a) Diagram 12 (b)

Diagram 12 demonstrates the setting of a map by compass. The compass is placed on a meridian line (or edge) of the map, which denotes true North and South; but in (a) the compass point is well on the right of this line. But as the Magnetic North is 11° on the West of True North, the map must be veered round until its True North line is 11° on the right of the line of direction of the compass point. Thus will the map be set true north and south, as in (b).

With the map truly set, it is simple to find any required point in the country, which is marked on it.

Also, if the observer is uncertain of his own position on the map, he can find it by a retrospective plan. Supposing the observer "A" in diagram I wanted to find his position, he would draw lines on his set map back from the church "B" and other points like "D" and "C"; and thus where these lines crossed must be his own point on the map and ground.

Hints to remember . . .

A "Bearing" is always in degrees of the compass —not N., E., S. or W.

Bearings are always read "clock-wise."

"Bearing" just means direction.

If from True North, it is a "true bearing."

If from Magnetic North, it is a "magnetic bearing."

"Bearings" are "True" unless otherwise stated.

A "grid-bearing" is from a "gridded map."

There are 360 degrees to the compass. 360°.

In map references, "Eastings" are always read before "Northings."

Use the smallest reference that leaves no doubt.

Make a "Romer."

Reconnoitre before making a "Field Sketch."

Study the stars.

Mark a conspicuous object before going on patrol or reconnoitring.

Feel also, the direction of the wind.

How to make a map . . .

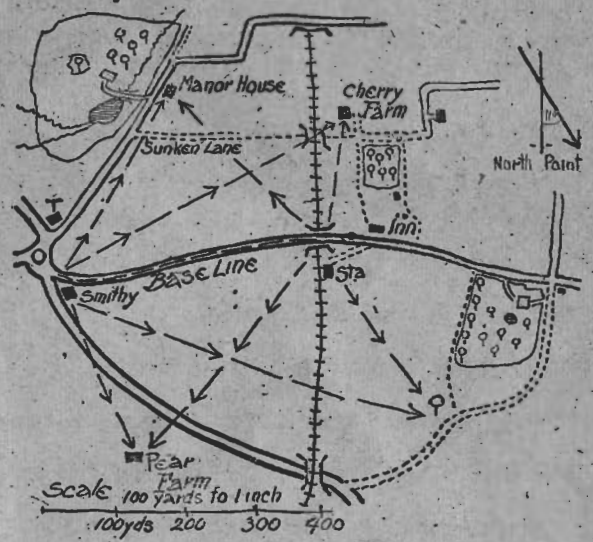


Diagram 13

AN interesting and useful way of spending an hour or two's training for Home Guards, is to reconnoitre the terrain over which your observation duties take you, and to map it out, putting in important points that would be of military use, if the occasion should arise.

After deciding on the maximum dimensions of the area you intend to map out, it is essential to decide on the scale, which should be as large as possible, that the extent of your paper will allow. The scale should be so many hundred yards to the inch, and a scale line should be shown at the bottom of the map-to-be. A base line must be chosen on which to build the sketch—a road is probably the most useful, and if this should pass through the middle of your map, all the better.

In the example, Diagram 13, that I have chosen, near to where I live, a main road portion makes a good base line, and as it runs over a main railway line, that runs practically north and south, the sense of direction is simply demonstrated.

Having estimated the length of your base-line (which in the diagram is from the smithy to the bridge over the railway line—and a simple way is by pacing it—as when measuring out a cricket pitch) plot it out on your paper. Then from one extremity of your base-line, make a line of direction on certain prominent objects, and note, by compass or protractor the angle (in degrees) this line makes with the base-line. Now from the other extremity of the base-line take lines of direction on the same objects, and note their angles also from the base-line. If similar angles are marked on your map, where the lines of direction cross, is where the objects must be marked down on the map. If you do not happen to have a compass, these angles can be roughly judged by eye. By holding a piece of paper or thin board, horizontally just beneath the eye, you can mark on it the direction of the base-line, and, by keeping the paper still, also the line of direction towards the object chosen.

This shaping of several triangles is like the range-finding triangle method from observation posts mentioned in a previous article.

With these points of intersection definitely placed on your map, their distance away can be calculated from the known length of your base-line and the scale-line.

The triangles formed by base-line, and the lines of direction from the framework of our field map, other objects and details can be roughly estimated and placed in comparison from judgment by eye, and so will your map take shape.

Mark on the margin the direction of the true north, with an arrow cutting away from it towards the magnetic north, i.e., a difference westward of 11°

In the Diagram 13, which is field sketch of actual country in a flat district, where distant objects are

visible, the base line taken is on the main road running east and west, which passes over a main railway line, running north and south. The arrow lines indicate rays from either end of the base-line, intersecting at prominent objects to fix their positions on the sketch. From these fixed positions, Manor House and Cherry Farm on the south, and Pear Farm and an isolated tree in the north, can be detailed other objects by eye judgment or by pacing.

The station bridge on one extreme of the base-line makes a fine observation post for the whole surrounding district. The map indicates points of military value, such as the sunken lane, a nature-made trench (France is full of these), the round-about near the smithy suggests where machine-gun fire could be brought to play on all main roads, besides, there's a telegraph office (and telephone) there, which must be protected. Then there are woods to hide troops in for protecting the railway line.

Having put your north point on the right margin and your scale at the bottom, also add the heading, "Sketch of —— (locality with approximate map reference), at the right-hand bottom corner, your signature, rank, date, visibility and time. All names should be in block letters, information of military value should be added, and conventional signs used, and it should be drawn facing where the enemy are likely to attack, or the same way your own troops would be facing.

How to find the Width of a River . . .

To find the width of a river which is too wide to cross, take a standpoint opposite to some conspicuous object on the other bank, a tree, for instance. Call your standpoint (A) and the tree on the opposite bank (B). Now walk along the bank at right angles to the line of the width of the river you want to find. Then at a certain interval—say 10 paces, plant a staff, walking stick or something into the ground (C), and

pace out equidistance, in this case another 10 paces (D). Now walk at right angles from (D) until you come to a position exactly in line with both the staff (C) or walking stick and the tree (B) on the opposite bank. The distance from (E) to (D) then is the same as the width of the river.

This is easily proved:—

In the triangles (A) (B) (C) and (C) (D) (E) the sides (A) (C) and (C) (D) are equal (10 paces); the angles (A) (C) (B) and (D) (C) (E) are equal because vertically opposite angles are equal; the angles (C) (A) (B) and (C) (E) (D) are equal, because both are right angles. Therefore, the triangles are equal in all respects, since two angles and one side of a triangle are equal to the corresponding two angles and one side of the other triangle; hence (A) (B) and (D) (E) are equal. Therefore (D) (E) is the width of the river.

METHOD II

Again from the standpoint (A) mark an object (B) on the opposite bank of the river, and walk at right angles, taking with you a 45° set-square. Walk along until your set-square tells you that your position (C) makes up an angle of 45°, and then you will know that the distance you have walked (A) to (C) is the exact distance of the width of the river.

As proof of this, the angles (A) (C) (B) and (C) (B) (A) are both 45°, so the triangle is an isosceles; and consequently the two sides are equal—and one of them is the width of the river.

Finding the Height of a Building or Tree.

Plant a staff or stick in the ground (which should be fairly level) a known distance from the building —say 50 yards. Then walk away so far that by putting your head on the ground you bring the top of the staff or stick in line with the top of the building. Then pace from this position to the foot of the building, taking special notice how many paces it takes you to the staff. Then as the distance from where you start to pace is to the whole length to the foot of the building, so does the height of the staff compare to the height of the building.

So supposing the length of your pacing to the staff is 10 yards, and the remainder to the foot of the building is 50 yards, five times as much, and the length of your staff is 8 feet, then the height of the building will be five times as much, that is, 40 feet.

How to Tell a Jerry.

If you suspect one of the paratroops or invaders of being a German, ask him to say quickly, "Wendell Wilkie," "Which wood were we wandering in when we woke Willy," or something with letter "Ws" in, for the German cannot pronounce a "W"—he makes it sound like a V.

Hence the correct pronunciation of the great composer is "Vagner."

The finest kind of Camouflage . . .

The finest camouflage artist is Nature! Look how perfectly the tiger's coat fits in with the bright sunlight and dark shadows of the jungle thickness; the giraffe's, with the patches of shadow from large overhanging leaves; the lion's, with the sun-baked veldt, etc. In fact all denizens of the wild have protective coverings! To come nearer home, we have the brown hare, sable fox, the stoat, weasel, etc.—all difficult to see cowering down in their natural surroundings.

And where is there finer camouflage than that of a sitting partridge? One can practically walk on a partridge before seeing it.

Besides, nature often varies her camouflage schemes to the seasons. For instance, the stoat and Scotch hare go almost white in winter to blend with the snows, as does the silver fox. Ermine is only the stoat's winter mantle. But nature plays pranks! She leaves the black tip to the stoat's tail, and tips with black the hare's ears; while she gives the rabbit a white tail. If black-tipped ears are so that hunter stoat can see the hare in the snow, the hare also has a chance of seeing its enemy the stoat, from its black tail.

This is one of the problems of nature I have not been able to fathom.

A good scout is always scouting. (There was no better example than Baden-Powell.) He will learn from Nature how to make himself inconspicuous—*how to see without being seen.*

This latter phrase sums up pretty well the whole craft of scouting, and with it, of course, must go the aptitude of taking cover.

Outside the simple means of camouflage,—dressing oneself in the colour of one's background; disguising oneself as a tree or shrub, etc. (even as the famous wood mentioned in Shakespeare, which fulfilled the fore-telling of the witches of Macbeth's doom) there is the more important precaution of "assumed immobility."

By "assumed" immobility, I mean that action should not be seen.

An enemy cannot look one way *all* the time, and it is when his attention is turned elsewhere, that a scout moves, and then only very slowly, unless it's over open country. For instance, if crawling through cover such as long grass, one leg should be cautiously moved at a time, and then the rifle pulled afterwards and placed in front. All movement should stop, as the enemy looks in your direction.

How effective this is, one can soon prove by standing against a tree-trunk a yard or two off a lane. Probably not five in fifty would see you if there was no movement. A good scout would never have more than half a face showing—and one eye; and this would be on the "blind" side of the tree following the passer-by round. Again, one can notice this with animals. If you should see a stoat, hare, or squirrel coming up a lane, and you should keep perfectly still, that animal will continue to approach you—evidently thinking you a part of nature's furniture, a tree or stump, and will canter past your feet. But just move one foot, and off it will scamper.

It is better to look through the fork of a tree than round it, and when up a tree it is well to make yourself look part of the tree by lying on a thick branch or standing in the fork. A small slot or hole close up to the eye allows an extensive field of view.

In fact, there is so much cover available in these islands that really one eye only need be exposed to the enemy and that should be in shadow.

A good scout should be able to "dissolve" himself into the background of a colour nearest to that of his dress. There is always the temptation to the untrained to peep over the crest of a hill—often a fatal mistake.

Better to look round the side of a hill some distance down from the top; and much better still to look round a hill that has a much bigger hill behind it in which your head gets "lost."

To help in hiding your face (which should be anything but clean) a good idea is to hold a branch of leaves in front if it.

When recommoitring from a wood, disguise yourself like a shrub, with leafy branches hanging over your head, and rub your face with leaf-mould. Wear nothing that catches the light or shines, and carry nothing that rattles. If you carry a staff or stick, have one without tip that may catch and make a noise on stones.

You will soon learn how to tread your way without noise. Dry leaves crackle and so do twigs. It is more silent going after rain or on boggy or marshy turf.

If perchance, you think that the enemy has spotted you, carry on as though you had not suspected it, to give him the impression that you had not seen him, and thus put him off his guard.

And if you pass in view of a watcher, don't turn your eyes to show that you have spotted him, until you're safe from view and suspicion.

Even a stoat knows this trick. When he escapes to his hole he can't resist coming out again to have a peep at you,—that's when the gamekeeper shoots him.

Tracks and Stalking . . .

INSTEAD of too much squad drill, musketry and ceremonial drill, it is more fitting that the Home

Guard should be trained in guerrilla warfare after the model of the Boer commando, who, with their guerrilla tactics, sniping, efficiency in ambush and concealment, defied the British troops for three years. The Home Guards should know his rifle, Bren or "Tommy-gun" well, and be able to use it effectively. He should know *how* to aim, and *when*.

He should see without being seen.

Find tracks and *read* them.

Never get lost, day or night.

In fact, he should learn all the ethics of good scouting.

Gamekeepers and poachers make good scouts because they are trained in the art of tracking and stalking. (Lovat's Scouts were enlisted from gamekeepers, gillies and deer-stalkers.) A good scout should have "an eye of an 'awk" and should miss seeing nothing.

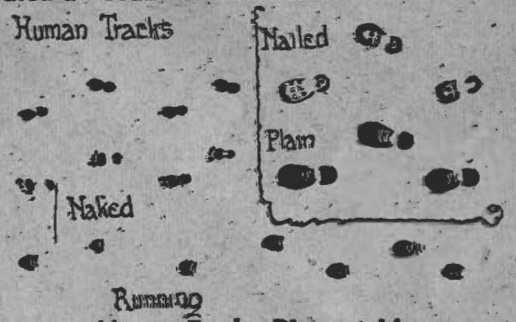
Buffalo Bill had restless eyes! Even while in conversation, his eyes were "all round the room," as the saying goes, after "sizing" the person up he was in conversation with.

Besides following a track, a good scout must also be able to *read* it.

An African native, for instance, through generations of hunting and being hunted, will instinctively track his victim, "following the spoor." He will crawl on all-fours cautiously to the ridge of a hill, raise his head very slowly among the boulders till his eyes just peep over the top. Having seen what he wanted, he will lower his head and retire just as cautiously. Now, supposing a good scout had been passing beneath the ridge. He would have noticed, perhaps, six round boulders on the ridge-top—one darker than the rest. He would notice this "without looking," and pass on. *Then* he would turn round to look and notice five boulders instead of six—the dark one was missing.

That scout had *read* the sign, and could act accordingly—no doubt, to the detriment of the natives acting on their tracker's advice.

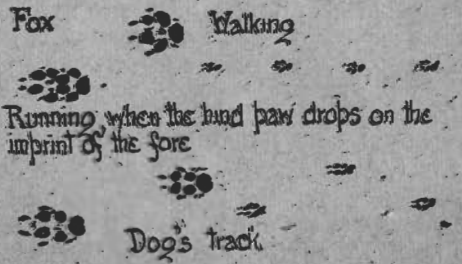
There was evidently no good scouting shown recently when the parachutes dropped. Anyone dropped down with one would have been bound to leave a track, if not in the near vicinity of cornfield or wood, on a path or patch of ground near by. There's always a dirt or mud track in the English countryside, even round a cornfield, where a farmer always leaves uncultivated a "road" for his cart.



Human Tracks. Diagram 14.

In reading a human track, the scout must notice whether the boots are nailed (and on which pattern) or plain (like rubber gum-boots, that parachutists would probably wear), while the unshod or naked foot is easy to read. From the size, he should judge the sex and stature of the person, and, naturally, the weighty one would make a more deeply indented imprint.

Natives boast that they can also tell the character of a man by his impressions.



Animal Tracks. Diagram 15.

Turned-in toes do denote the person of weak intellect, while foot-marks at the angle of "a quarter to three" suggest that a person is "splay-footed" or a bit "wonky" on his feet.

With the aged the imprints are at shorter intervals with a "slither" between for the feeble.

When a person is running, only the imprint from the ball of the foot to the toes is made—the faster the pace the longer the stride.

One can easily tell the heavy tread of the farmer and gamekeeper, both strongly nailed, and also they will have their faithful dogs with them—the type one can read by the pad-marks. For instance, besides considering the size, such dogs as labrador, spaniel, retriever (favoured by gamekeepers) would show signs of the fur between the pads.

A fox has a similar, though narrower, pad-mark, but its impressions are in a stralght line, while the dog's are slightly straggled.

Home Guards in many parts of the country are mounted, so horses' trails should be interesting to follow.

Horse Tracks. Diagram 16.

A horse walking makes the indent of the hind hoof just in front of that of the fore, and it is somewhat longer and narrower.

The impressions are rather similar when the horse is trotting, although the intervals are greater, while

a horse at a canter shows two separate imprints followed by two together.

A horse at the gallop leaves a track of hoof-marks practically in line and isolated—the longer the distance of space the more frantically is the horse being whipped.

A man with an urgent message will gallop his steed, if the journey is not too long; otherwise he would ride it at a steady trot.

A cantering horse is often at exercise—a hunter, perhaps, or a charger.

The sedate tread of a plough-horse is well announced. Accompanying tracks to those of the horse tell their story—wheels, heavy or light, iron-tyred or rubber; a man's track denoting leading, and possibly a dog's evidence besides.

When following a track, it may be that it gets "lost"—perhaps going over rock or hard ground which does not show the impression; so, in such a case, it is as well to mark the direction of the last foot-print and carry on, until the track is again found.

If this is not successful, the way is to make a "cast" by planting your staff or placing some object on the ground, and making a large circle round it, choosing your way over patches of soft dirt on which impressions of foot-prints would be made. By widening the circle, if not at first successful, you would be bound to pick up the trail again.

You might find the trail again by noticing the grass shining where it has been trodden down to catch the light—especially if there is dew.

Nature's Night Alarms . . .

EVEN before daybreak, nature will give the alarm when danger is nigh.

Wherever a parachutist lands in this small island, he is bound to disturb something.

If he should alight in a cornfield or on the stubble, he is almost sure to disturb a covey of partridges to cause their piercing cry, "Te-week! te-week! te-week!"

Pheasants, too, often "lay in" the fields, out of the breeding season, and their alarm note is one that rings clearly through the night air—"Kuk! kuk! kuk! kuk!"

If it should be a fox that is causing the disturbance, the calling of both birds would be more continuous, because in this case the fox would be pursuing, while the parachutist would stop dead, as soon as he had

The Jay Diagram 17.

raised an alarm, to listen what effect to the human world the alarms had given.

Other birds, too, would raise the alarm, like the meadow-pipit, with its tweezy sound, and the lark, with its sharp, short whistle—so very different to its melodious song when soaring to the heavens.

A few years ago the corncrake, or landrail, would have been a useful scout in an opposite way, by going silent. Its almost continual "cracking" stops when there's need for caution; but for some strange reason, this bird is rare in England nowadays.

But, if an invader should seek the shelter of the woods, his intrusion should cause many warnings from the denizens of the wild.

First and foremost, the jay, "blue-winged Judas" (as the Poet Laureate calls it), would earn its name as "Sentinel of the Woods." Screaming its complaint, it would "squawk! squawk!" in a piercing tone, like a duck with a sore throat. To aid the jay in giving an alarm would be the chittering of blackbirds and other thrushes; the whistling of starlings and the calling of others of the feathered world that seek a night's "doss" in the woods.

"A dog is a man's best friend!" is a saying so often proved, and in the country the dog, whether it be farmer's, gamekeeper's, shepherd's, or even a gypsy's lurcher, is usually the first to give warning of danger.

Also, if a dog defies an intruder, it will not stop barking until there has been a satisfactory understanding about the intrusion, friendly or otherwise.

The alarm will also be taken up by other dogs for miles around, by instinct bred from their wilder generations.

It is easy to tell by the bark of a dog what message it wishes to convey.

A dog chained up has a far different voice from one straining at the leash when taken for a run. There is the howl of a bitch, which a vixen fox has in a more musical tone, under the same circumstances. Then there is the cry of the dog in pain or cruelly imprisoned, and the exact opposite, the joyful high-pitched yap-barking of the farm dog following the hay-cart—one of the happiest sounds of the countryside. Then, also, we hear the dog that is asking to be "let in."

Living in the country, one can tell what's happening to a large extent through the barking of different dogs—for no two seem to be quite alike. I can tell what time certain farmers are going to the fields, and the toils they are going to, by the voice of their constant companions. One can also tell when "So-and-so's" dog is let off his chain.

What a fine Home Guard the Shepherd of the Hills would make, with the aid of his intelligent and faithful servants.

Reynard, the fox, has a more musical bark than a dog. The vixen "calling for love" (to quote Masefield) is more of a "crooner," while the dog-fox gives a sequence of short barks, more like yaps. By this travelling voice one can judge where the fox is going, and the speed of travel will suggest the cause or object—hunted or hunting.

To intrude into the neighbourhood of a rookery is asking for trouble, and an extremely noisy reception; and to enter a wood which large armies of rooks have made their winter quarters for generations is pandemonium.

We have such a wood in Mid-Cheshire where each winter night tens of thousands of rooks roost, coming from all points of the compass.

The alarmists of the waterside are all raucous in their calls, from the quacking of the different species of duck to the loud "kra-king" of water fowl, coots and grebe; and in the case of the two latter, the sound of flapping wings and dangling legs would add to the sound.

Water Fowl.
Diagram 18.

If the patient and lanky fisherman, the heron, should be aroused from peaceful pursuits, he would rise in the air, languidly but loudly complaining "krank! krank! krank!"

One can surmise that parachute invaders would endeavour to land on the mountains, moors, fells, screes or Highlands, but still, even in these areas, they would not be alone. On the whole long range of the Pennines and its far-flung spurs the "Sentinels of the Moors"—grouse—would soon raise a noisy alarm, and a definite one, "Go-back! go-back! go-back!" Blackcock, too, would add to these calls, particularly so the further north one went.

On the screes of Lakeland the musical mewing of buzzards would announce the trespass of any on their heights of solitude, whether fox or human; and besides, being of the eagle breed, would not hesitate to go into battle, as the King of Birds would do in the remote parts of the Highlands.

When day breaks and nature wakes

The Wood Pigeon

Diagram 19.

HAVING written of the many wild birds and animals that will sound the alarm of an invader on their domains in the dark hours, it stands to reason that when day breaks, the actions of such, well observed, will add to the warnings given. Besides knowing the different calls of birds and beasts, a good

scout should be able to identify a bird at a glance by its shape and flight.

Few species of birds fly alike—as a species, for example, I group thrush, missel, and blackbird together, although each so different in appearance and call. These have a straight flight, as also has the woodpigeon, though on stronger and more noisy wing (the pigeon's flight is probably the nearest to the aeroplane's).

The tits all have undulating flights—the longer the tails, the more "swinging" the flight; for the long-tailed tit's appendages plays its part on the wing, besides being of great help in acrobatic antics around the twigs.

Wagtails too, have undulating flight, with more prolonged waves.

The hawks from buzzard, peregrine down to the smallest, the merlin, have wheeling flights on apparently motionless wings, as also have the gulls and and larger sea-birds, gannet, kittiwake, etc., in equally graceful action.

When an invader, who may have arrived through the night, wishes at daybreak to prepare for action, there are many things to give away his position on the slightest movement.

If in pasture or cornfields, when least expected, he will "get up" on loud whirring wings, partridges, and may be, pheasant. They will retreat noisily from his advance, and denote his presence to within a few yards; for neither will get a-wing until an "enemy," human or otherwise is near.

Larks and lapwings, too, will rise,—the former in direct, not soaring flight and the latter wheeling around until danger is over.

Although vocally, the jay gives the noisy challenge to one entering or moving in the wood, it is the woodpigeon that is more useful from an observing point of

view. While the jay keeps within the precincts of the trees—its brilliant plumage makes it very conspicuous—the wood-pigeon seeks safety by emerging from its shelter on noisy clattering wings. It rushes out, but if with its quick eye it sees threatened danger waiting for it, it doubles back to come out of the opposite side of the wood. This "hard-cased" bird has an uncanny sight for a man with a gun (or similar-looking walking stick).

Other birds will also emerge, and if a fox should break cover, you can be assured that there is more than one stranger sneaking around.

On the Pennines and similar mountain ranges, it would be quite feasible that parachutists should seek a landing. In the hollows of such solitudes, they might consider themselves safe from detection, till such times as they could marshal their forces.

But they would not be alone!

"Sound the Alarm" will be sounded by many grouse and in wilder and more northern regions, black game will add to the call.

In these regions, too, sheep, which are comparatively wild (so seldom are they folded) will say "Bah!", and one may see them gather together and move herd-like away from threat of danger. On the distant screes they look like a huge snake wriggling down towards safety—to the shepherd and his dogs.

Gillies and deer-stalking gamekeepers were enlisted in Lovat's Scouts; if they could stalk a deer, they should obviously be a match for the enemy.

Deer have the herd instinct highly developed, especially in danger.

When quietly browsing on the haunches of the Highland mountains or in Lakeland, they are difficult to spot from other heights, even through the glasses, so well does their sable coat blend with the background of rusty bracken; but in action, the trained eye will follow their movements.

He would be a pains-taking invader indeed who could escape their vigilance.

At the slightest sign of danger, the "Monarch of the Glen" (possibly from a sign from one of the herd nearest to the enemy) would raise his Royal antlered head, quiver his nostrils and with a low call, gather his retinue of young bucks and hinds. Quickly gathering great speed, the whole herd would be off like the wind; and what more graceful action than that of a deer, especially if leaping is introduced. It is only when deer are on the move—like a brown mist—that they can be really observed, from a distance.

Buzzards go soaring and wheeling in the air for safety, to announce the disturbance, with wings, tipped up at the ends, and a span of about five feet. Theirs is a majestic flight, effortless and so graceful! They are not afraid of giving battle, as becomes their eagle breed.

A good scout with keen eye like a hawk should learn from the behaviour of such a bird what is happening beneath.

Take for example a kestrel!

The trained eye should be able to see it almost a mile away, poised in the air on seemingly motionless wings (but which are quavering at lightning speed). Left alone, the kestrel will perform its natural routine.

With its field of expansive view below, its keen eye will spot its victim—furred or feathered. One deadly swoop, like a stone, and the hawk's cruel claws are fastened on its prey.

The hunter will then alight on some boulder or tussock to tear its victim to shreds and devour what it fancies.

If the ground beneath is barren of prey, the kestrel will move off in slow graceful sweeps to another aerial point of view, with hopes of better luck.

But if the hawk should move off in a direct line and not so leisurely, you may rest assured that something unusual is happening in the bird's field of view, and your fieldglasses should search for the reason.

When peace reigns again . . .

WHEN these dark days of war are passed, and we can look over those cherished maps that have guided us over this treasured land in times of peace, then can we seek out again lovely paths from them that lead to alluring spots, without fear of a lurking enemy.

"There will we sit upon the rocks
And see the shepherds feed their flocks,
By shallow rivers to whose falls
Melodious birds sing madrigals."

For Peace has her victories, no less renowned than War! Then may we conquer again the mountain tops and the screes, with none to defy us but the elements and the wild mountain winds that with their battle songs challenge those that seek their solitudes.

By opening again old maps one can resurrect happy days in good companionship—or alone.

That dotted line, for instance, over Striding Edge, the knife-edged pony track that leads up to the summit of Helvellyn, that pops its nose through the 3,000 feet contour line.

How the winds screamed defiance, and the path so dangerous! But it was a lovely day, with Ullswater in a white wave-furrowed rage, as we looked down on it from Place Fell in the morning—Place Fell, the haunt of the buzzards.

Here is the path marked over the Wrekin, a mountain of less importance, but sole sentinel of the vast plain of Shropshire. From its Eagle's Eye we could see miles of the lovely Severn winding like a silver snake over the rich greenness.

Caer Caradoc, where the last of the Britons,

Caractacus, fought his last battle, and Great Ness, on which is the site of a Roman Camp from which Romans of more honourable days could look over the extensive Welsh Marshes, which they could never conquer.

Those little blue markings of charming streams that trickle down Derbyshire Dales, in which brown and rainbow trout sway, and where the dipper, white-bibbed and polite in its curtseys, trills its lovely lay to the lullings of the water.

Then there is the path that runs on the white cliffs of Yorkshire, Speeton, Bempton, on to Flamborough Head, with its smugglers' caves—lovely white cliffs over three hundred feet high, that the morning sun streaks with bright blue shadows. That coast must be bristling with guns at present; but even in times of peace there is nearly always a derelict wreck at the foot of Bempton Cliffs—a victim of the rage of the wild North Sea. Fisherfolk say, with awe, that those formidable cliffs have a sheer drop of well over three hundred feet beneath the sea's surface.

We had walked across the Broad Acres from Harrogate to the coast in pleasant stages, and the map had been our only guide. And it took us through Knaresborough, with its romantic pile, the Castle, overlooking the Nidd, Boroughbridge on the Swale, where the Romans used to holiday from York; Thirsk, sleepy old Helmsley and Rievaulx Abbey (the old monks knew the bonny spots); quaint market town of Pickering; Thornton-le-Dale, and on to enter Scarborough by Forge Valley, Hackness and Lady Edith's Drive.

Ah, well, we could go on for so long with such recollections of Bohemian wanderings, those "Happy moments, day by day."

Karel Capek, the great Czech writer, wrote of maps in his charming manner that breathes peace. The war killed him—he died of a broken heart.

". . . But the maps where the lowlands are painted

green like the loveliest meadow, in which a man can wade up to his eyes, and the hills are shown in a pale tawny colour like the young rye, making you think of sun-baked loam and the white gleam of ripening crops; and the higher mountains are brown like rocks, russet like moss, and the still higher mountains are frowningly dark, the colour of bare stone, and right at the top are white points and expanses—the eternal snows. And then there are little blue veins, which are rivers, and they wind about so that one must follow them; and azure lakes the colour of the sky, like mirrors in which not even one tiny cloudlet is reflected; and marshes sprinked with blue commas; and eternally blue seas; and, finally, deserts all dotted over like the sand we used to play in when we were little.

". . . Here you wander along tawny paths, the sun burns the back of your neck, and a yellow brimstone butterfly flutters in sail-like flight over the shining ripples of corn. You see, too, the red walls of villages, for the towns have gone right down into the valleys and are stuck like bulging eyes on to the blue veins of the rivers. You wander from town to town; you find little out-of-way towns, hidden away like keepsakes at the back of a drawer; you read names that are never in the newspapers, for in them folk live a quiet and uneventful life; you find names that lure you on as if something beautiful and strange were waiting for you there.

". . . You discover valleys full of solitude, where there is not even a path but along which you long to thread your way, for who knows if you would not find there the loveliest place in the world? You are seeking *your* path through mountains and men; you are seeking for a solitude, abandoned not by God but by men. . . .

"Only sometimes you conquer a silent path across it with your eyes; and you see a multitude of things, like a pilgrim who has no goal, but who does not journey in vain."