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SETTING OF A MAP, FINDING NORTH AND OWN POSITION

LESSON PLAN MR 2

(Part 3)

MAP SETTING BY VARIOUS METHODS

Setting of Map

A map is said to be set or oriented when it is placed such that it corresponds directly with the ground. **i.e., when true NORTH on the map points to true NORTH on the ground.**

There are two methods of setting a map

- (i) by compass
- (ii) by objects on the ground.

Setting by Compass: Draw a line showing magnetic NORTH from a point on a grid line. Open the compass and lay it flat on the map over the above drawn diagram, which will show the magnetic variation so that the hair line on the window lies along the magnetic NORTH line on the diagram. Then turn both the map and the compass till the needle points along the hair line. The map is now set, since the magnetic NORTH line on the map is pointing in the direction of magnetic NORTH as indicated by the compass needle.

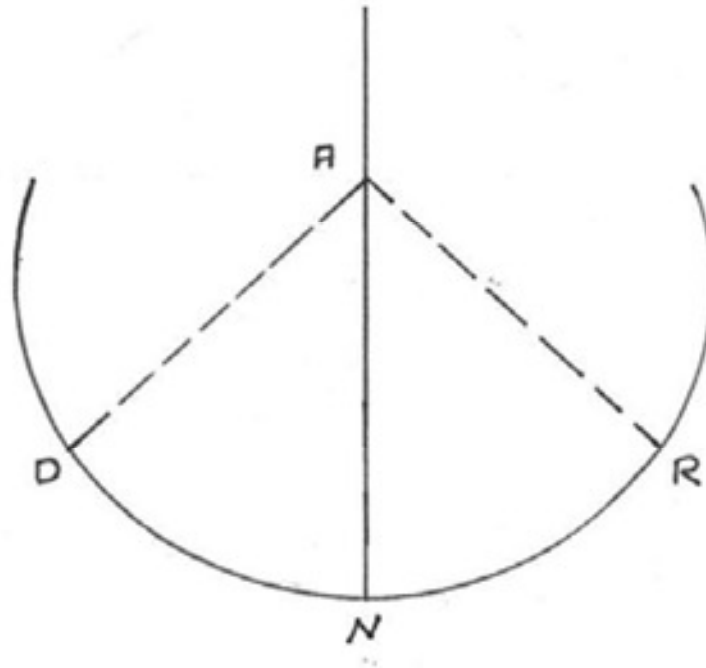
Finding North and own Position (without Compass):

The position of NORTH can be discovered by

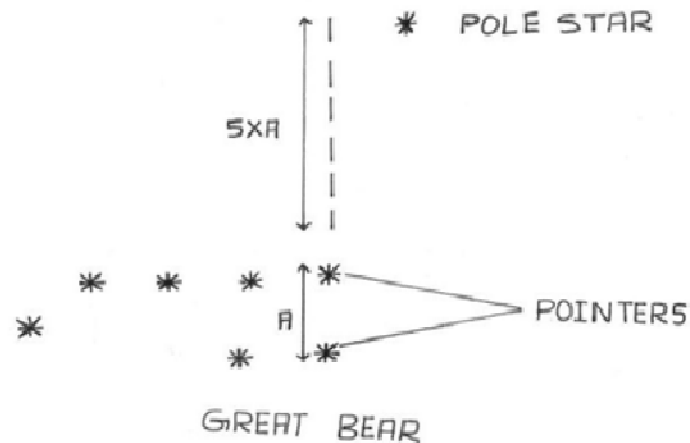
Equal Altitude Method

- (i) Take a fairly large piece of paper or card board and spread it flat on the ground. In the centre fix a pencil or piece of wood perpendicular to the ground. It can be done with the help of a coin fixed at the base of pencil or wood with sealing wax or by directly pushing it in the ground.

- (ii) Wait till after mid-day until the sun has moved around sufficiently to throw another shadow as indicated by the dotted line AD i.e. of the same.



(b) **By Stars:** In the Northern hemisphere, the Pole star indicates the position of True North to within 2 degree. It is a bright star and it can be found by protruding a line from Great Bear. The pole star will be found slightly off this line on the side remote from the remaining stars of the Great Bear.

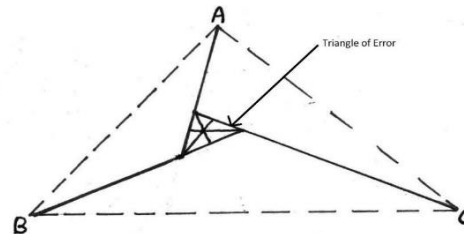


Methods of finding own position on Map

- (a) By resection method or Compass method
- (b) By resection method without Compass
- (c) By Inspection method.

Resection with Compass Method

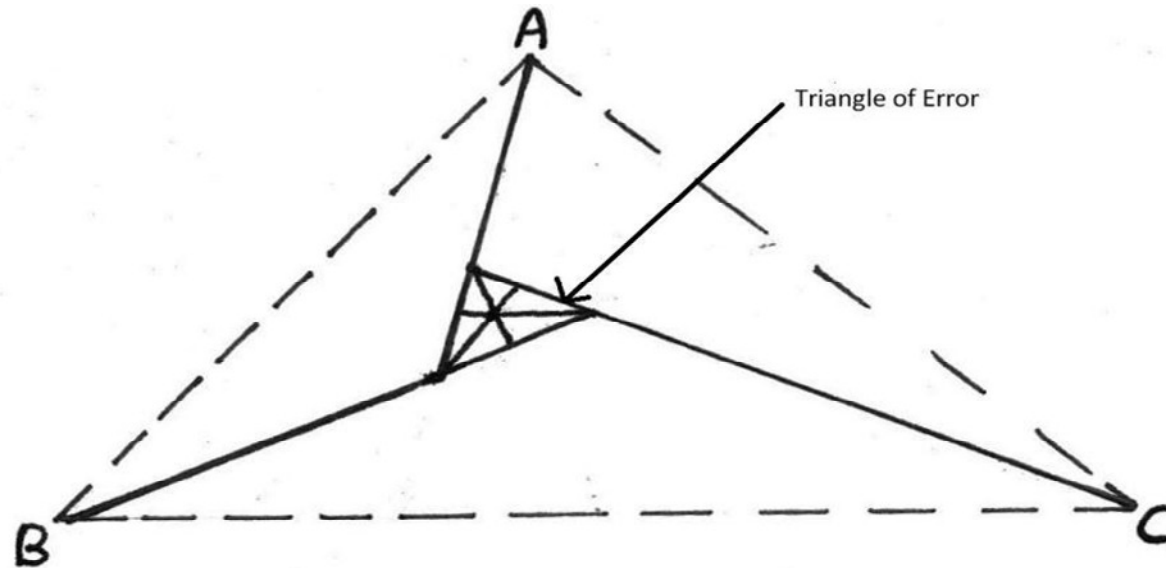
- (a) Recognise three prominent features (A, B, C) on map and on the ground as well. These three prominent features must not be more than 180 or less than 30 apart. They should be as far as possible and clearly visible.
- (b) The bearing of these points be taken and converted into Grid bearings.



- (c) Then, on the map the back bearings from these points must be plotted, and the point of intersection will be the required position.
- (d) In order to do an accurate resection, three or more objects are necessary. But in that case if the three rays do not intersect at the same point, a triangle of error is obtained. The centre of triangle is the point of your own position

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Resection without Compass

In case compass is not available, resections can still be carried out with the help of a piece of tracing paper. Identify three distant prominent objects on the ground and map. Take a piece of tracing paper and pin it on to a map board, make a point on it to represent position. Then draw a straight line along the straight edge of ruler through the point and in the direction of one of the three distant prominent objects.

Now without moving or disturbing the board, repeat the process for the other two objects. Remove the tracing paper from the board and apply it to the map so that the three rays pass through the corresponding distant objects marked on the map. The point, where three rays intersect each other will be the required position.

By Inspection Method

By inspections is meant a careful and detailed study of the ground and features both on the map and the ground and features on the map and on the ground. The method consists of

- (a) Setting the map.
- (b) Recognition of general area of own position on the map.
- (c) A close study of the ground details.

CONCLUSION

Setting of map and finding own position is the essence of the map reading training. One should be able to set the map with the help of compass and without it in minimum possible time. After setting of map, find out the two or three objects present on the ground and map be selected and resection method or compass method be used to find out the own position. Finding correct and accurate own position is very important for the navigation.

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THANK YOU



JAI HIND

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