Laxmi Narain Dubey College, Motihari
(a constituent unit of B.R.A. Bihar University, Muz.)
NAAC Accredited 'B+'
National Cadet Corps (NCC)

Topic: Types of Bearing and Use of Service Protractor

NCC – Map Reading
B/C Certificate Examination

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[MR6: Types of Bearing and use of service ~~[illegible]~~ PROTRACTOR]

Bearing and its conversion methods

26. A bearing is always measured clockwise.

27. The clockwise angle formed by a straight line joining two points and direction of North is called bearing between the two points.

28. Bearing is of three types :-
 (a) Grid bearing. measured on a the map from the Grid North by the help of a protractor.
 (b) Magnetic bearing. measured from magnetic north by the compass.
 (c) True bearing. Calculated by finding out the relation of true north and Grid north or magnetic north

Conversion of bearings.

~~[illegible]~~. From Magnetic Bearing to a True Bearing

29. Suppose the bearing of a certain point P is measured with a compass and is found to be 160 degrees. Now this can be converted as follows: First draw a verticle line to represent magnetic north. Next draw a line PO at P an angle of 160 degrees. Next, draw the true north line approx. 11 degrees East of magnetic north. With this diagram it becomes clear that true bearing is smaller by.

11 degrees. Therefore the true bearing of O is 149 degrees. (Fig-1)

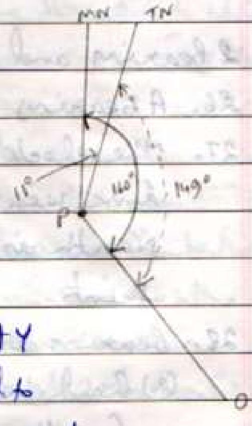

Fig-1

From Grid Bearing to magnetic Bearing

measuring with a ~~protrac~~ protractor on the map, the bearing of a wind mill at Y from a church at X is found to be 120 degrees. Now to convert this Grid Bearing to a magnetic bearing, draw a diagram as in Fig-1 but this time starting with the Grid north line. The magnetic bearing is larger than the grid bearing by 11 degrees and is therefore 131 degrees.

Back Bearing

30. It is the bearing taken from the observation point back on to the original position.

31. The rule is that if the bearing is large enough to have 180 degrees ~~it~~ subtracted from it this should be done. If it is smaller this figure should be added.

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Service Protractor

32. The service Protractor "A" Mark IV is an instrument used for plotting and measuring bearing on the map.

33. It is the essential link between the compass and the map.

34. using service protractor, magnetic bearings have been converted to grid bearing and transfered to the map.

35. The Protractor is made of cardboard or ivorine.

36. It measures 6 inches long and 2 inches wide.

37. The main purpose of the protractor is to measure angles and bearings.

38. The front face of the protractor has 360° of a circle.

39. The service protractor is an essential item of map reading. with its help one can:-

(a) Plot and measure bearing on paper or on a map.

(b) Measure distance in inches/cm correct upto 1/100th.

(c) measure distance in yards, metres or miles on a map by using the appropriate scale.