

Laxmi Narain Dubey College, Motihari

(a constituent unit of B.R.A. Bihar University, Muz.)

NAAC Accredited 'B+'

National Cadet Corps (NCC)

Topic: Relief, Contours, and Gradients

NCC – Map Reading

B/C Certificate Examination

Instructor

Lt. Durgesh Mani Tewari

ANO- 4/25 COY.

dmtewari@gmail.com

[MK4 : Relief, Contours, and Gradients]

Relief

1. Relief is a general term applied to the state of the ground in a vertical plane.
2. Representation of a relief on a map means showing of heights and shape of the ground above or below which is normally sea level.
3. Thus it shows the broad features and relative heights of highlands and low lands which are portrayed on the map.
4. Relief is shown with means of hachures, shading, form lines, lower tints, contours, spot heights, trig heights, bench marks and relative heights.

Slopes

5. The closer together the contour lines are, the steeper is the slope of the hill which they show where they are far apart, the slope down is gradual.
6. There are two types of slopes, convex and concave. A convex slope is the one which bulges outwards and concave slope is the one which curves inwards.

Contours

7. A contour is an imaginary line following surface of the ground at a certain level.
8. Following are the characteristics of contours :-
 - (a) It accurately show the height, the shape and slope

of the ground.

(b) Contours are shown generally in brown and rarely in black.

(c) Height is marked on every fifth contour on 1:50000 scale map.

(d) Contour lines vary in appearance.

(e) These lines never touch or cross each other.

Vertical Interval (VI)

9. The rise between successive contour lines is known as the vertical interval.

10. On map scale 1 inch to 1 mile, the VI of each line is 50 feet.

Horizontal Equivalent (HE)

11. The distance measured flat on the map between adjacent contour lines is HE.

Gradient

12. It is the ratio of the vertical interval to horizontal equivalent.

13. Simple formula is, $VI/HE = \text{gradient}$.

14. It is independent of any unit of measurement.

15. The gradient can be worked out quickly from a contoured map.

16. The rise or fall of a slope can be expressed in following two ways:-

(a) In an angle or degree of slope

(v) The tangent of the angle or gradient.

17. A gradient of 1 in 15 means that a horizontal distance of 15 m the ground rises or falls 1 meter.