SER No	CONTENT
(a)	**LESSON PLAN : MR 2** **SCALES AND GRID SYSTEMS** Period - Two Type - Lecture Code - MR 2 Term - I --- **Training Aids** 1. Map Sheets,Computer Slides, Pointer, Charts, Black board & Chalk. **Time Plan** 2. (a) Introduction and Aim - 05 Min (b) Definition, Methods of expressing a scale - 35 Min (c) Definition and methods of Grids Reference - 35 Min (d) Conclusion - 05 Min **AIM** 3. The aim of this lecture is to introduce the JD/JW NCC Cadets to the method of learning scales and method of finding Grid Reference. **PREVIEW** 4. The lecture will be conducted in the following parts:- (a) Part I - Definition and methods of expressing a scale (b) Part II - Definition and Methods of finding Grid Reference **PART I** **Definition of Scale** 6. Scale is the proportion which the distance between the two points on the map bears to the distance between two points on the ground. Everything on the map must be reduced and the extent

to which the size is reduced constitutes the scale of the map. The essence of a map is that it is a drawing to scale and it bears a definite ratio to the size of the actual country which it portrays.

Methods of Expressing a Scale

7. There are two methods of expressing a scale:-

(a) **In Words**. 1 inch to 1 mile, it means that 1 inch on the map represents 1 mile on the ground.

(b) **As a Representative Fraction (RF).** This is the scale expressed in the form of a fraction, if the scale of a map is given as 1/100000 this means that one unit of the map represents 100000 of the same unit on the ground. It could mean that one centiméter on the map represents 100000cm on the ground.

Scale Line

8. Underneath the scale is the scale line which is drawn in two ways and by means of this, distance on the map can be measured. On the 2 cm to 1 km map one shows 1 km along its length, and is similarly divided intometres, with sub divisions in the left hand section.

9. The large divisions on these scale lines are called primaries and the small divisions on the left secondaries. An example of the scale line for a scale ”2 cm to 1 km” is at Fig-2 below.

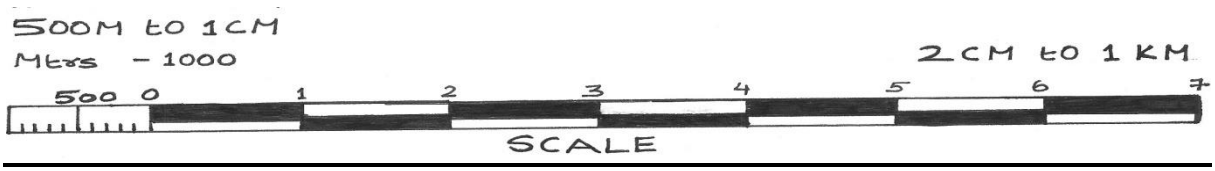

Fig-2

(b) **PART II**

Definition of Grid

10. A map is covered with a network of purple lines, some running North and South and others West and East. These form a series of small squars all over the map.These lines are known as Grid Lines.

Purpose

11. The purpose of Grid Lines is to make possible giving and reading Grid References and to facilitate measurement of bearings.

Method of Grid Reference

12. In giving a Grid Reference there are four rules to remember:-

(a) A reference must always contain a even number of figures. Normally it contains six figures.

(b) Always count along the EASTING lines first from the WEST to EAST and then from SOUTH to NORTH along NORTHINGS.

(c) For six figure Grid Reference the third and the sixth figure represent the divisions of 1000 meters square to the nearest 10th part, so they have to be estimated and for these figures a slight latitude is allowed.

(d) If a general Grid Reference is to be given or there is only one such object in one square e.g. bridge, temple, road junction then its identity and four figure grid reference would suffice.