PLANE TABLE SURVEYING

In the chain and prismatic compass surveying, the sides and bearings are measured on the ground, noted in a field book and finally plotted on a sheet of paper. Now we come to another type of plane surveying in which surveying and plotting go together in the field itself. The laboratory work does not involve plotting of the data; it involves only fair drawing.

Plane table surveying is a graphical method of surveying. It is based on triangulation done graphically. It is one of the simpler methods of surveying. It is speedy also. The errors are easily detected in the field itself. The horizontal distance of only a base line is measured. The plotting is so done that the measurements of angles are not necessary. Plane table survey, unlike other types of surveys, can be completed single handed. There are no chances for discrepancies resulting from the presence of magnetic materials. Further, plane tabling can be stopped temporarily and taken up subsequently without having any adverse effects on survey results.

With the advantages listed above, plane table survey has certain disadvantages also. First, even small obstructions make plane tabling difficult. It cannot be used in wooded areas, for example. Secondly, it is not suited to areas having frequent rains. The sheet of paper on which the results are plotted has to be used in the open. With sudden changes in weather the paper contracts or expands and the ac-

curacy of the work is marred. It is not suitable for large scale surveys covering extensive areas.

Equipments

Plane table: It is a drawing board fitted to a tripod. It can be rotated freely and fixed in any desired horizontal position. The table has a brass plate with a bossed head which fits into the hole of the plate of the tripod. It can be tightened with the help of a clamp to keep the table in a fixed position (Fig.79).

Alidade: It is a ruler with parallel edges. There are two flaps at the two ends of the alidade. One flap has a slit and the other has a vertically fixed wire. The method of observing the objects is the same as in the prismatic compass surveying. A telescopic alidade (Fig.80) is used to observe distant objects.

Chain and tape: A chain or a tape is used to measure the base line.

Trough compass: A trough compass is a rectangular compass used to determine the magnetic north.

Spirit level: It is used to set the table in a horizontal position. There is an air bubble in the level. If the table is fixed horizontally, the bubble rests in the centre. Some of the alidades are fitted with a spirit level.

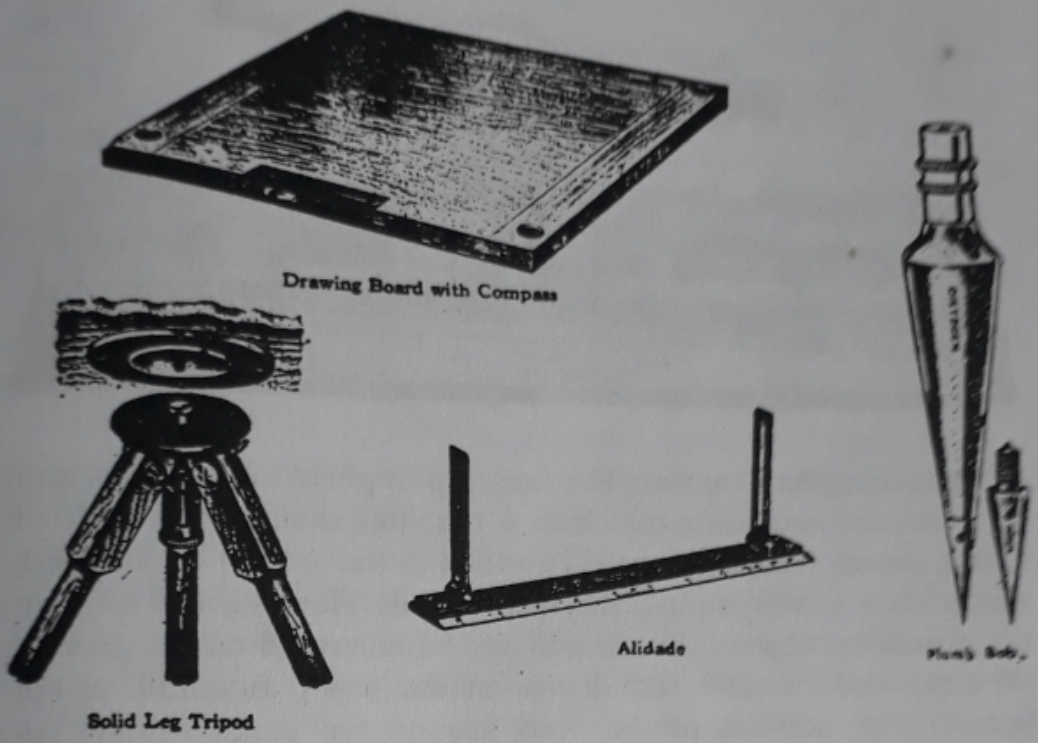
Ranging rods and wooden pages: These are needed for marking the stations or objects to be included in the survey.

Plumb bob: A fork or U-shaped frame with a plumb bob is ued to centre the table exactly at the station.

Field glasses: Those are used to get a clearer view of distant objects.

Thumb pins: Thumb pins are used for fixing the paper to the table.

Fig. 79



Drawing equipment.

Procedure

Preliminaries: Before starting the actual survey, the surveyor should see that the equipments he is going to use are in perfect working order. The sheet of paper to be mounted on the table should be larger than the table so that it can be thumb pinned underneath the board of the table. It should not be pinned on the board because the pins will hinder the free movement of the alidade. They will also make the surface of the table rough.