

Plane table survey

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Plane table survey

- The plane table surveying is the fast method of surveying.
- In this type of surveying plotting of the plan and field observations can be done simultaneously.
- In case of plane table surveying geometrical conditions of site are manuscript in the map sheet using plane table.

Plane table survey equipment's



❖ General equipment used for conducting plane table survey are

- Plane table
- Alidade for sighting (telescopic or simple)
- Plumb bob and plumb fork
- Compass
- Spirit level
- Chain
- Ranging rods
- Tripod
- Drawing sheet and drawing tools
- Paper clips or screws

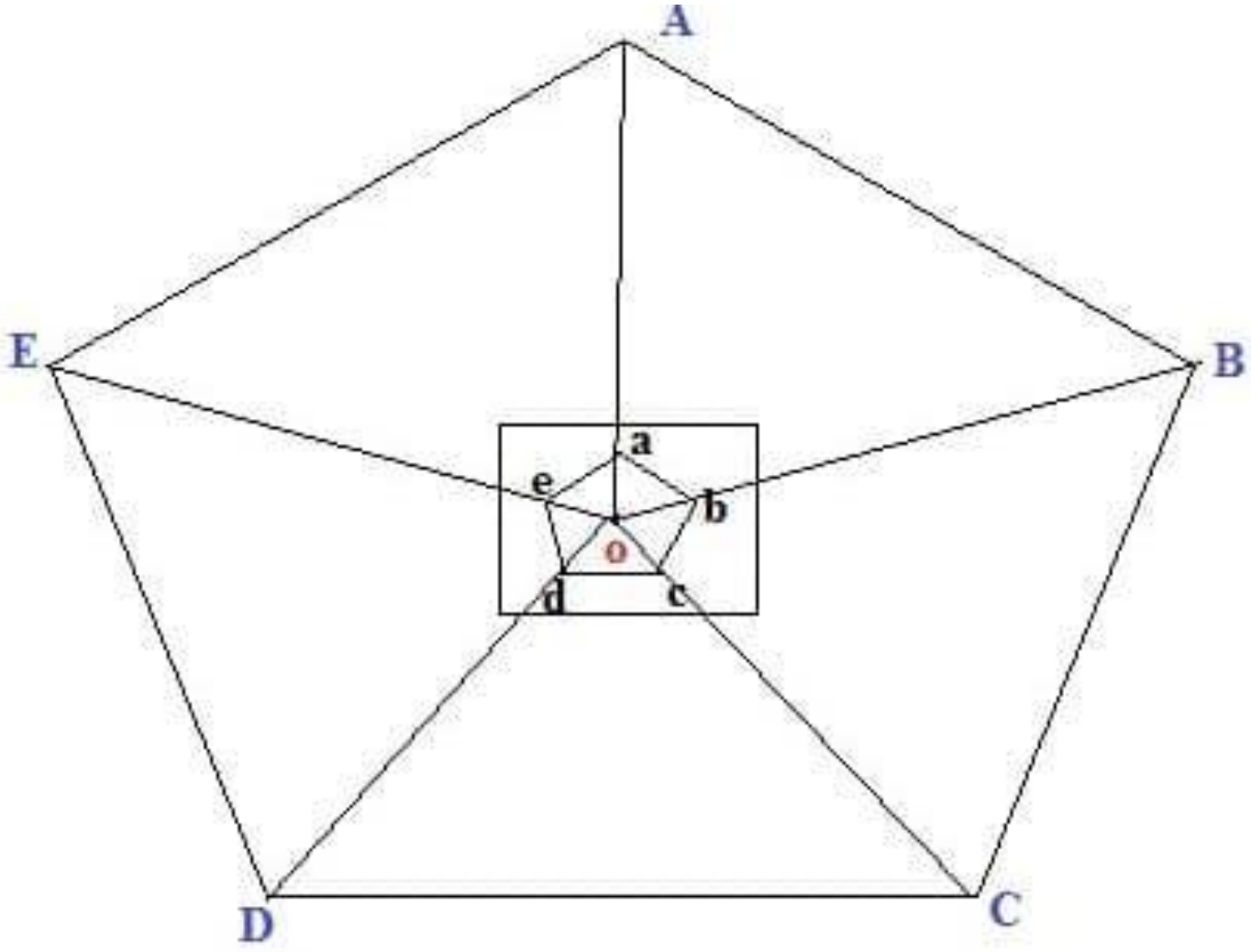
- **Plane table survey equipment is arranged in 4 steps as follows**
- **Fixing of Plane Table**
- Fix the plane table to the tripod stand. Arrange the drawing sheet on the plane table using paper clips or thumb screws. The sheet should be in one position from first to last.
- **Leveling of Plane Table**
- Plane table should be leveled using spirit level. For small works, eye estimation can be ok.

- **Centering of Plane Table**
- The table should be centered by using plumbing fork and plumb bob. By which we can arrange the plotted point exactly over the ground point.
- **Orientation of Plane Table**
- Whenever we are using more than one instrument station, orientation is essential. It can be done by using compass or back sighting.
- Table should be kept parallel in position as it occupied in the first station.
- Plotted lines in the drawing sheet are parallel to corresponding lines on the ground.

- **Methods of Plane Table Surveying**
- Generally there are four methods available to perform plane table surveying. They are
- Radiation
- Intersection
- Traversing
- Resection

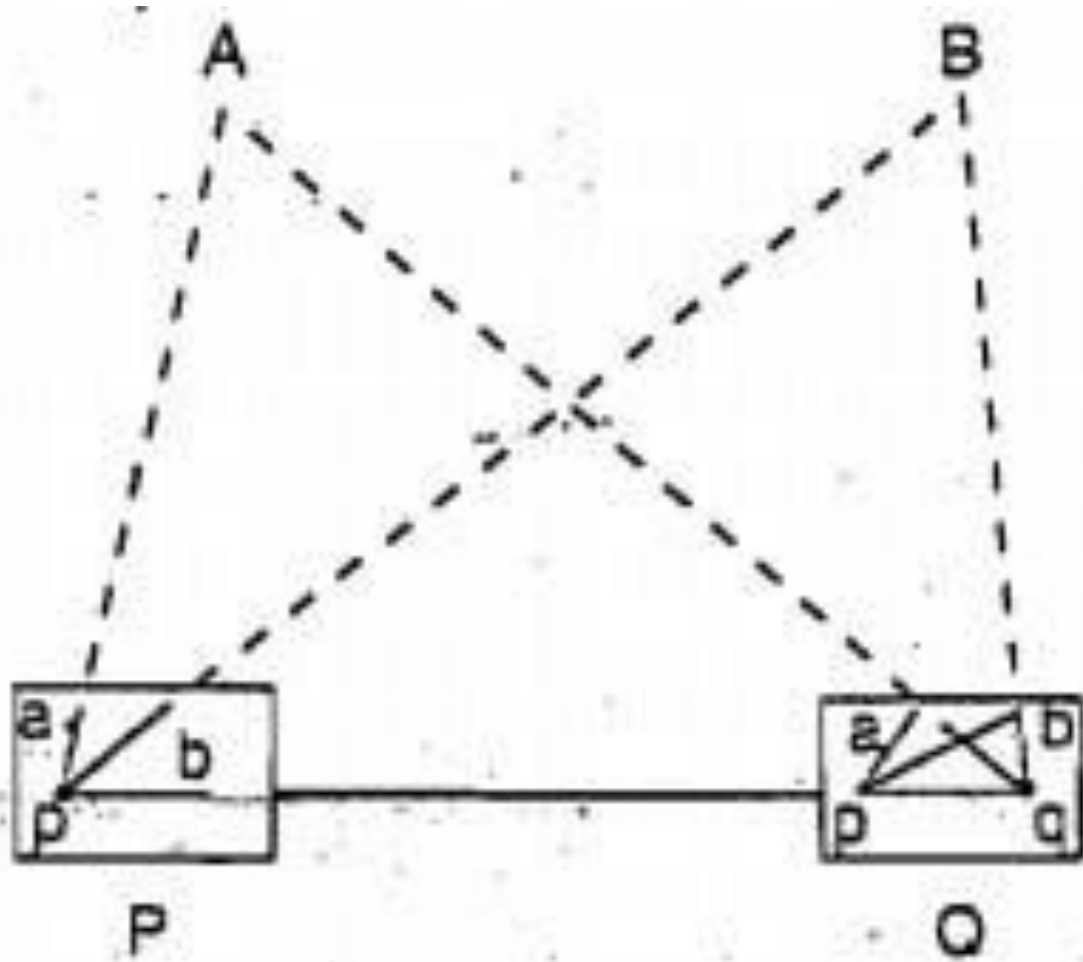
- **Radiation**

- In this method, plane table is located at one point “o” as shown in fig. and whole survey is performed from that point. From point O, sight the points A,B,C,D and E using alidade, locate and plot the points as a, b, c, d and e in the drawing sheet.



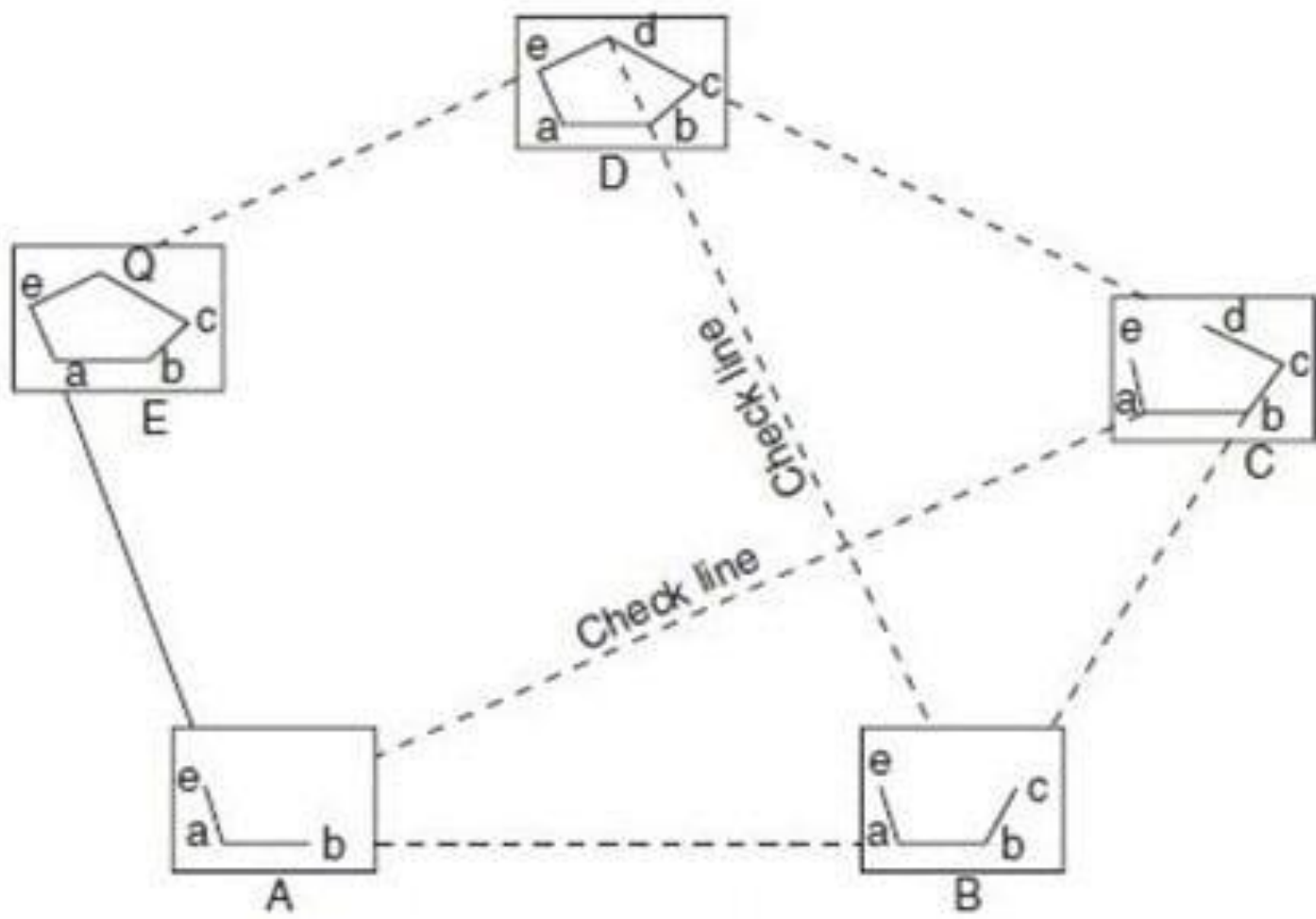
- **Intersection**

- In this method we can locate the point by plotting two rays from two known stations. As shown in figure, P and Q are the known station. First the equipment is placed on P and plot the lines by sighting the stations A, B and Q. then shift the equipment to station Q and plot the lines by sighting stations A, B and P. Finally, the intersection of A and B rays is the required location of point of intersection.



- **Traversing**

- Traversing is the connection of series of straight lines. In case of traversing, plane table is located at one point for suppose A as shown below. From that point sight towards B and measure the distance AB. Then shift the plane table to point B and sight towards A and measure BA. Average distance of AB and Ba are plotted to scale in drawing sheet. Then Sight the point C from B and measure BC and repeat the same procedure until last point. Conduct some checks at some points. Finally traverse lines are plotted on the drawing sheet.



- **Resection**
- Resection is a method of plane table surveying in which location of plane table is unknown and it is determined by sighting it to known points or plotted points. It is also called method of orientation.
- This method is suitable for establishing new stations at a place in order to locate missing details.

