

The background features a complex network of thin, light gray lines connecting various points, creating a web-like structure. Scattered throughout are numerous triangles of different sizes and orientations, some with solid black dots at their vertices. The overall aesthetic is minimalist and geometric.

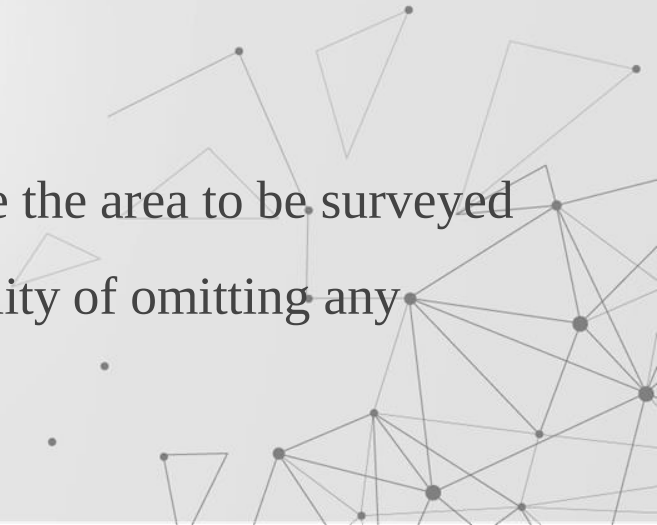
PLANE TABLE SURVEY

STEFFI STEPHEN
Asst. Professor, PHCET

INTRODUCTION

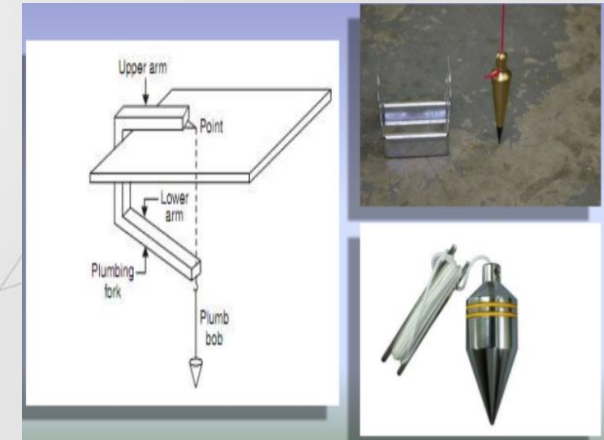
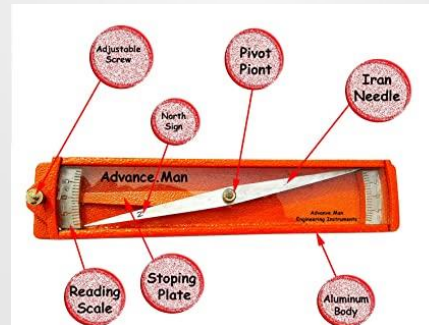
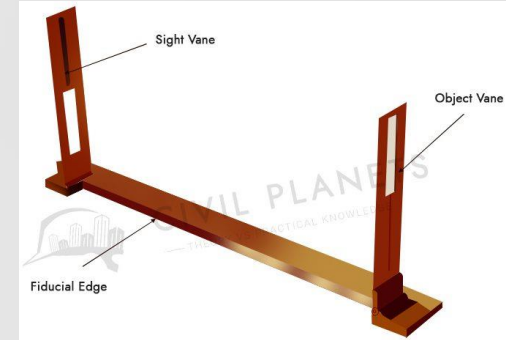
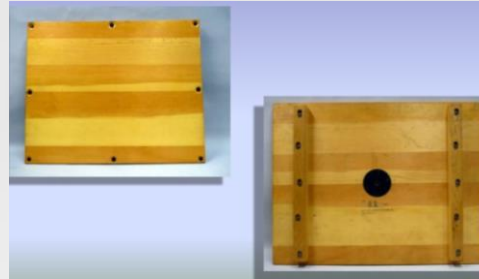


- Plane table surveying is a graphical method of survey in which field observations and plotting are done simultaneously
- Simpler and cheaper than theodolite survey
- Suitable for small scale survey
- Plan is drawn by the surveyor in the field, while the area to be surveyed is before his eyes. Therefore there is no possibility of omitting any necessary measurements



INSTRUMENTS & ACCESSORIES

- Plane Table with Tripod
- Alidade
- Trough Compass
- Spirit Level
- U fork with Plumb bob
- Drawing paper & necessary accessories



ADVANTAGES

- Since the plan is drawn in the field, there is no possibility of omitted measurements
- Simple and cheaper than other methods of survey
- Suitable for small scale maps
- No great skill is required
- Useful in magnetic areas where compass cannot be used
- Less number of control point required
- Depiction of irregular details and contours can be done easily



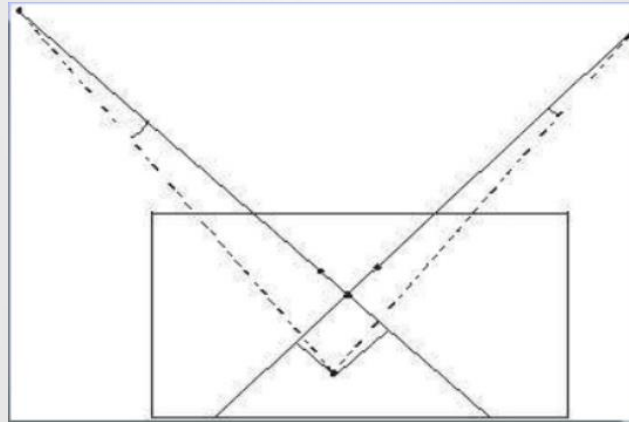
DISADVANTAGES

- Plane table and its accessories are cumbersome which are required to be carried to the field
- Considerable time is required for surveyor to gain proficiency in plane table survey
- Practically more time is required in the field
- Method can be used only in open country with clear visibility
- Rainy season and cold wind affects the progress of survey considerably



PRINCIPLE OF PLANE TABLE SURVEY

- Principle – Parallelism
- Lines joining the points on the plane table are made to lie parallel to the lines joining the ground points while working at each station
- All rays drawn through various details should pass through the survey station



WORKING OPERATIONS

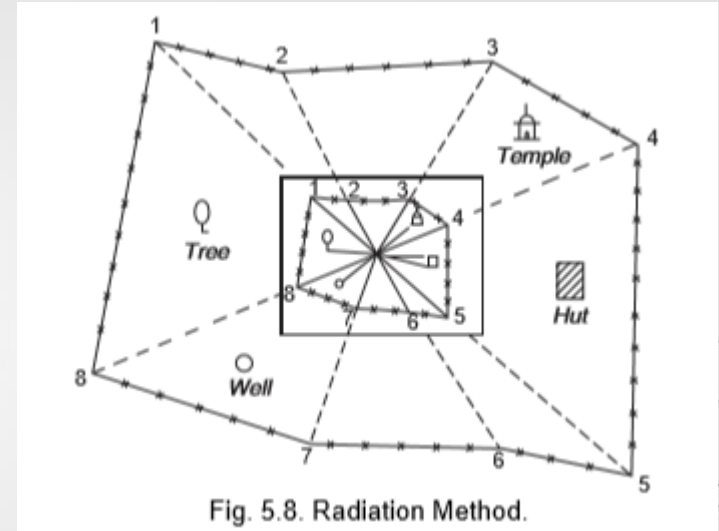
1. Fixing the plane table on tripod
2. Setting up the plane table
 - a. Levelling
 - b. Centering
 - c. Orientation : process by which the positions occupied by the board at various stations are kept parallel. Two methods-
 - i. Orientation with compass
 - ii. Orientation by back sighting
3. Sighting the ground stations



METHODS OF PLANE TABLING

1. RADIATION METHOD

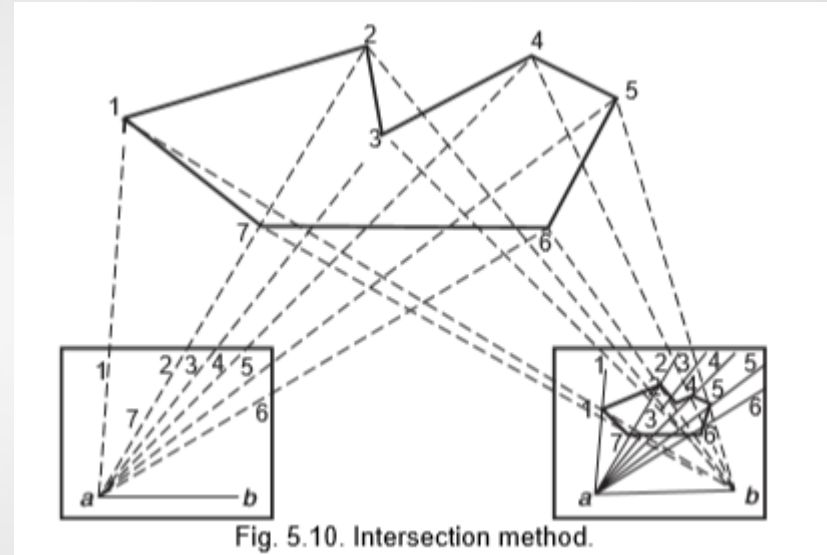
- Table set at a commanding station
- Details are plotted on their radiating lines drawn from the location of instrument station, after reducing their respective ground distances
- Suitable for survey of small areas which can be commanded from a single station



METHODS OF PLANE TABLING

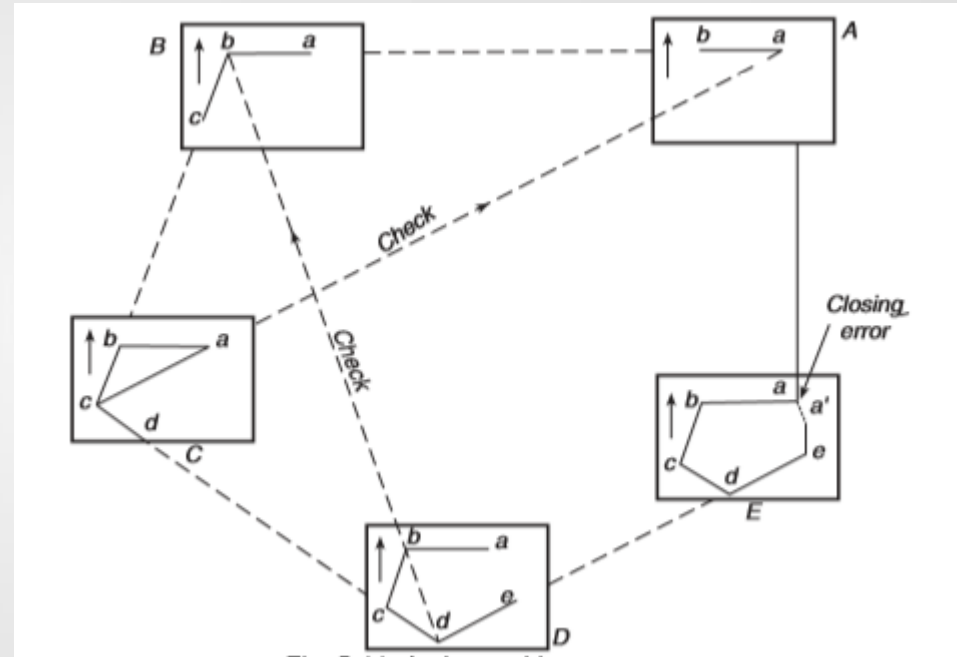
2. INTERSECTION METHOD

- Two instrument stations at a known distance is required
- The point of intersection of the rays drawn from the ends of base line gives the location of details
- Also known as graphical triangulation
- Suitable when distances between detail points are either too large or cannot be measured accurately due to undulations



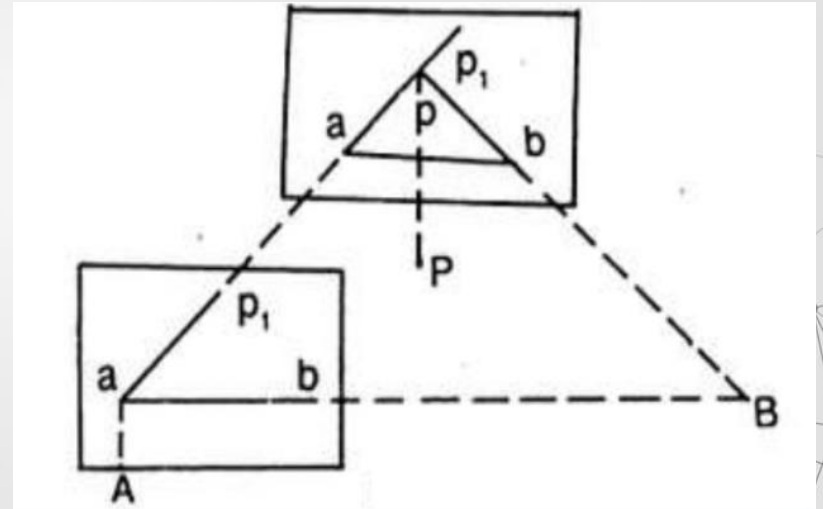
TRAVERSING

- Method similar to traversing by compass or theodolite
- The table is set at each station and a foresight is taken to the next station and its location is plotted on the foresight ray by measuring distance on ground
- To survey areas where clearings are rare and distant views seldom obtainable
- Also suitable for areas which are magnetically disturbed



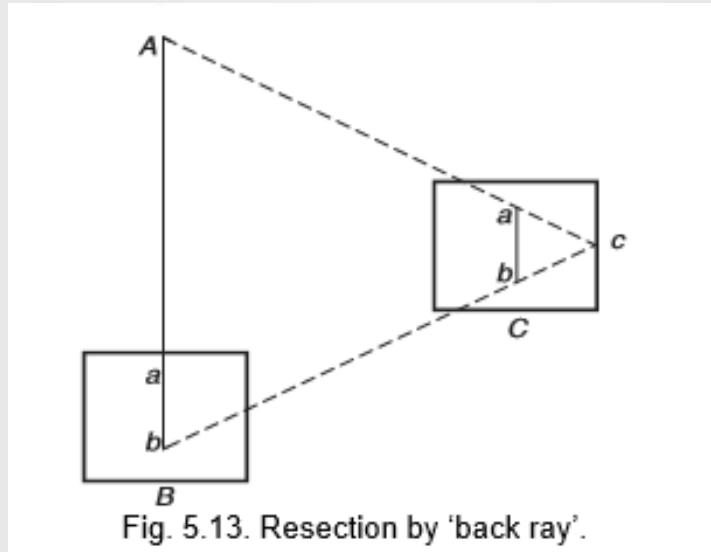
RESECTION

- Process of determining the plotted positions of the station occupied by the plane table, by means of sights taken towards known points, locations of which have plotted
- Three methods
 - By back sighting
 - By two point problems
 - By three point problems

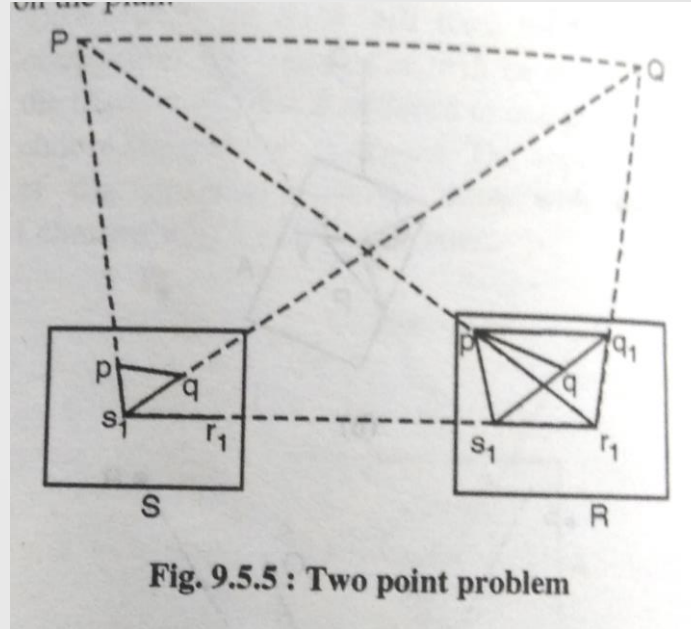


RESECTION-BY BACKSIGHTING

Also known as back ray method



RESECTION – TWO POINT PROBLEM



RESECTION-THREE POINT PROBLEM

1. Mechanical Method

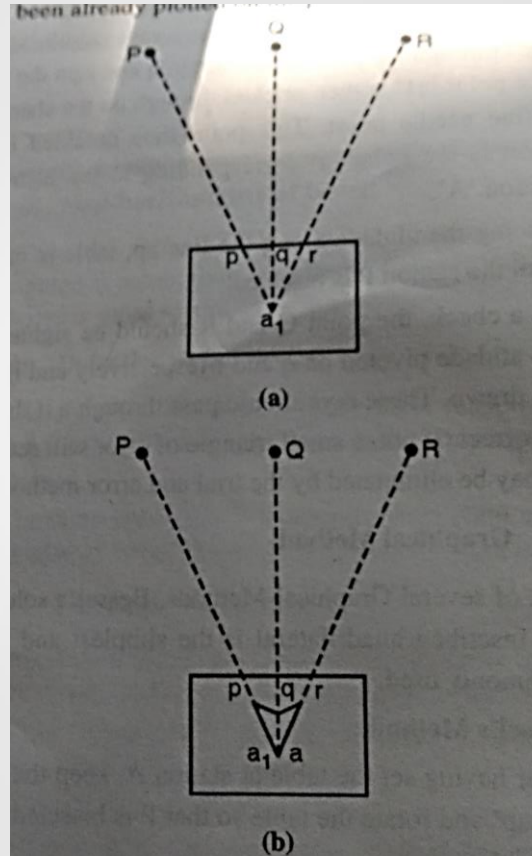
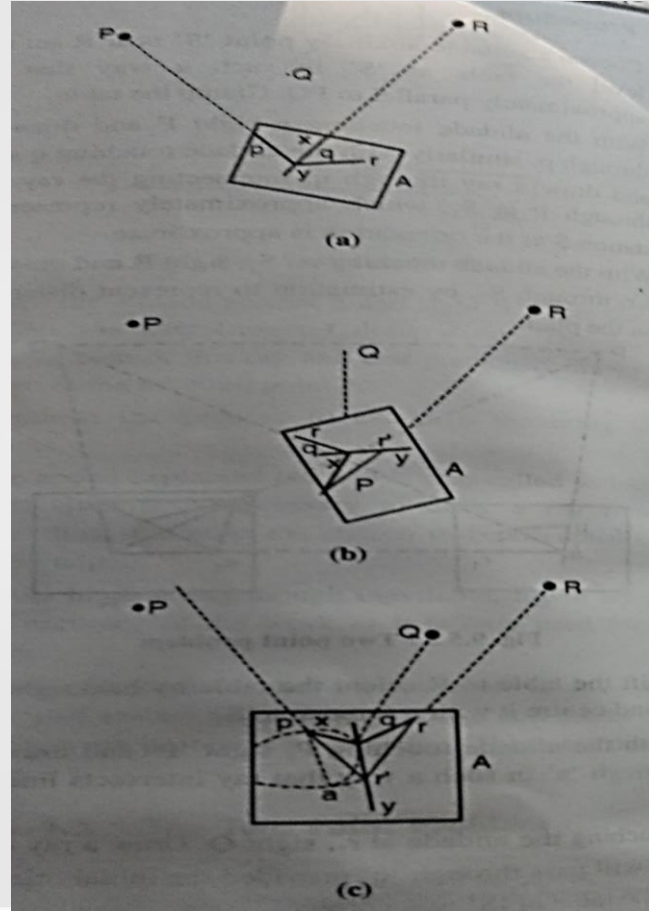


Fig. 9.5.6. Three point problem

RESECTION-THREE POINT PROBLEM

2. Bessel's Method





THANK YOU