the proper orientation helps one see the three-dimensional aspects of the problem more clearly.

PLOTTING A PLANE CONTAINING A LINE (Fig. 11.7)

1. To plot the plane:
   (a) Mark the direction of strike on the primitive (in this special case, the north mark serves this function).
   (b) Count off 45° from the left on the east-west diameter of the net.
   (c) Trace in the great circle on the overlay (dashed arc on Fig. 11.7).
2. To plot the line:
   (a) With the overlay oriented to north, mark the trend of the line.
   (b) Revolve this mark to the north point of the net. Count off 31° from this point along the north-south diameter.
   (c) Plot the point.
3. Just as the line lies in the plane, so too must the point representing the line lie on the great circle (solid arc of Fig. 11.7). If it does not, then an error has been made, either in plotting or in the original measurement.
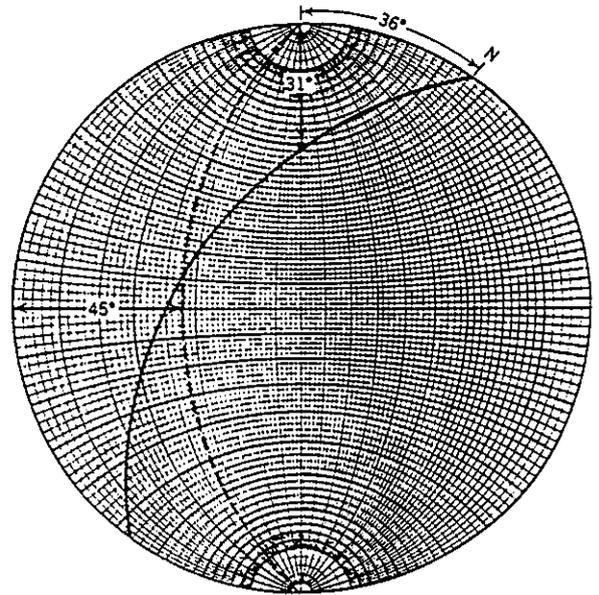

FIGURE 11.7 Stereographic plot of a plane containing a line: the overlay in position for locating the line on the plane.

ATTITUDE PROBLEMS

Problems dealing with angular relationships of planes and lines which were solved by orthographic methods in Chapters 1 and 4 can be solved directly on the stereonet.

PROBLEM

Given an inclined plane (N 50 E, 50 SE), find its apparent dip in the N 80 E direction.

CONSTRUCTION OF APPARENT DIP (Fig. 11.8)

1. To plot the plane:
   (a) Revolve the north mark on the overlay 50° anticlockwise.
   (b) From the east point of the net, count off 50° along the east-west diameter.
   (c) Trace in the great circle.
2. Revolve the overlay back to the starting position, and mark N 80 E on the primitive.
3. Revolve this mark to the east point, and read off the angular position where the great circle crosses the east-west diameter.

ANSWER

The apparent dip in the N 80 E direction is 31°.

From such a diagram, the pitch of a line on an inclined plane can be obtained by determining the angle between the primitive and the point measured *along* the great circle trace. In the example, the pitch of the line is 42° NE (that is, measured from the northeast end of the great circle).
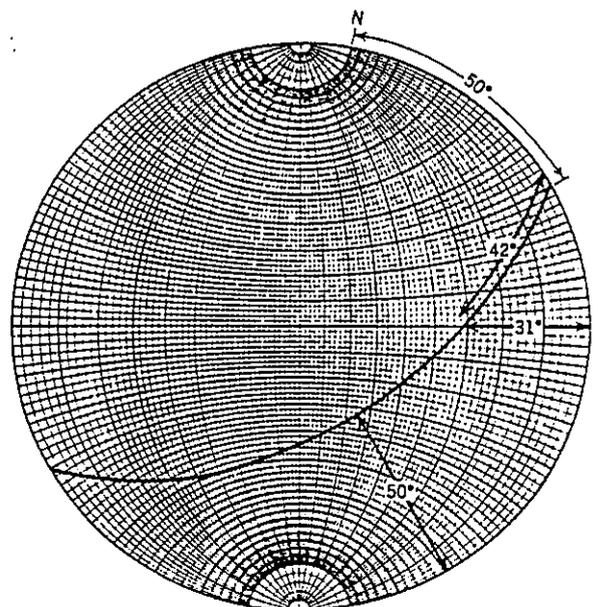

FIGURE 11.8 Apparent dip from true dip and strike: the overlay in position for measuring the apparent dip angle.