

Basic Land Measurements & Traversing

OBJECTIVES

1. To (re-) acquire knowledge in using basic traversing tools through
 - a. Calibrating one's pace, and
 - b. Learning the two basic uses of the hand compass:
 - i. Determining the direction to a *known object / landscape feature* (to transfer field measurements to a map), and
 - ii. Determining what object / landscape feature is found in a *given direction*, (to transfer map measurements to the field),
2. To run a simple closed traverse and calculate error of closure.

FIELD WORK

Equipment: Compass, clinometer, 100-ft cloth tape, appropriate field apparel, Rite-in-the-Rain notebook.

Work in teams for this exercise. Each team member should perform the following tasks:

- 1) Calibrate your pace (a "left-right" pair of steps) by determining your average pace. Accomplish this by walking a three-chain course you set up with crew partners somewhere on Rainier Vista a total of *three (3) times* (be sure to record all three observations) and taking their average.
- 2) Assess the claimed map scale by identifying two objects on the map that are easily identified in the field, pace between them, and record the result.
- 3) From your assigned vantage point specified during field time, measure the direction to the named object / landscape feature.
- 4) From the same assigned vantage point, identify the object / landscape feature found by looking in the given direction.
- 5) Perform the four-point closed traverse as identified in the field. This is accomplished by picking one station as the starting point and working either clockwise or counterclockwise around the course, measuring foreshot angles, backshot angles, slope distances, and slopes between each of the four identified stations.

OFFICE WORK

The report for this module should include the following (neatness counts!):

- 1) The average, the standard deviation, and standard error of number of paces **per chain** for each individual crewmember.
- 2) The map scale you computed from your field observations, for each team member.
- 3) Direction to the identified object / landscape feature from the vantage point assigned in the field. Report your answer both as an azimuth and as a bearing.
- 4) Identified object / landscape feature from your vantage point assigned in the field.
- 5) Correct the angular measures for your traverse, then correct the linear measures by balancing the latitudes and departures. Calculate the Latitudes and Departures from your closed traverse. Compute the Error of Closure (EOC).
- 6) Complete your data by calculating the area enclosed by your traverse using the Double-Meridian Distance Method.

Include a brief introduction and conclusion for your report stating your findings and any observations you had.