

# WTC Long Beach Group #3

## NAVIGATION ASSIGNMENT FOR CONDITIONING HIKE, DUE LECTURE #3

- 1) Using fine color pens or pencils mark the following on the topo map:
  - A) The trail up Little Santa Anita Canyon from Sierra Madre to the Mt Wilson Road and on to the summit (5710') of Mt Wilson
  - B) The 2000, 3000, 4000 and 5000 elevation contours in different colors.
  - C) With a ruler & black pen draw vertical (North-South) lines on your map no more than 1 inch apart. Instructions on next page (back side)
- 2) Make a trail table from trailhead to Mt Wilson via the route described in #1A:
  - A) Use at least 8 points along the route such as the trailhead, major switch-backs, stream crossings, prominent features, trail junctions, summits, etc.
  - B) Calculate elevation gain & mileage between each point and cumulative.
  - C) Calculate travel times between each point using the Naismith rule:
$$(\text{distance})1/3 + (\text{elevation gain})1/2000 = \text{Time}$$
  - D) Determine rest & lunch intervals (5 min per hour rest, 45 min lunch)
  - E) Calculate the total time required to climb Mt Wilson.
- 3) Make a trail profile using the trip table generated in question #2:
  - A) Label vertical axis of graph with elevation, label horizontal axis of graph with mileage.
  - B) Plot a point on the graph corresponding to the elevation & mileage of each point on the trip table.
  - C) Draw a line connecting each point.
- 4) Using a compass as a protractor draw the following bearings on your topo map and label with degrees:
  - A) To Mt Wilson from the trailhead. Will you be able to see Mt Wilson?
  - B) To Lookout Point from the trailhead. Will you be able to see Lookout Pt?
  - C) To San Gabriel Peak from Mt Wilson. Will you be able to see S.G. Peak?
  - D) To Muir Peak from Mt Wilson. Will you be able to see Muir Peak?
  - E) To Lookout Point from Mt Wilson. Will you be able to see Lookout Point?
- 5) During the conditioning test hike do the following:
  - A) At the trailhead orient your map (North). Using the bearings written on your map try to identify Mt Wilson and Lookout Peak.
  - B) Record starting time of the hike. Record the time at each trip table point.
  - C) Check your location at each rest stop. Orient your map and compare the land form around you with the contour lines on the map.
  - D) On the Mt Wilson summit orient your map and find San Gabriel Peak, Mt Markham, Muir Peak, Mt Harvard and Lookout Point

### 1C) INSTRUCTIONS FOR DRAWING MERIDIAN LINES ON TOPO MAPS

- The right and left edges of the map are true north-south lines (Meridians of Longitude).
- Each quadrangle map has two or more Longitude tick marks along both top and bottom edges; they are identified by 1/16 inch long black lines extending from the edge into the mapped area. These tick marks (circled below) can be matched with four 1/4 inch black crosses in the middle of the map. Using the above tick marks, two more highly accurate meridian lines can be drawn.
- Construct three or more additional meridian lines parallel to the first four. The lines should be between 3/4-inch and 1 inch apart.
- Red section lines that appear on many maps may sometimes be used as true north-south meridians. But they often vary from true north. If section lines are inaccurate or don't exist, draw your own meridian lines. UTM grid lines typically vary 1° to 3° from true north and are no substitute for meridian lines.

