FE 308 Lab #1 – Pacing

Equipment:

Silva hand compass
Logger's tape (also called a Spencer tape)
1 set of chaining pins (11 red and white thin, pointed steel stakes)
1 clinometer
1 hardhat
As always: Field book (Transit style for today's lab) and pencil

Exercise:

This lab is an introduction to one of the most used measurement tools in forestry: your feet. The first objective of this lab is to establish your pace on the ground and to test your pace against a known measurement. The second objective of this lab is to start you on your way to good note-keeping practices.

What is a pace? Technically some consider a pace to be two steps and are comfortable counting every other step when trying to measure distances that they cover while walking. Others are more comfortable using and counting a single step. Regardless of whether you will calculate a one- or two-step pace, make sure that you use normal (not large) steps in the calculation process, similar to what you might be able to maintain over long time periods.

Preliminary field work

1. Prior to starting the lab, your field book should be complete for the following:
   - Front cover
   - Inside cover
   - Table of contents setup
   - All pages numbered

Field work

1. Locate and identify the test courses in the field. You may begin at any of them, however you should measure and pace courses A & B, before you attempt to complete the mystery course. This is a team assignment so you should find another lab member to work with.

2. Measure the length of courses A & B once with the logger's tape to the nearest 10^{th} of a foot. You are to measure the horizontal distance of each course and not the slope distance. You will need to work with your teammate to coordinate measurements. The tape should be held as close to level as possible throughout all measurements- use the clinometer when in doubt. You will have to "break tape" several times to cover the courses while maintaining a level tape- you can use a chaining pin to mark the location where you begin a new measurement.

   It is OK to record this information in a single field book.

Logger's tape: be careful about "walking out" the end of your tape. This occurs when you near the end of the tape and it breaks or disconnects with the metal casing. To avoid this problem, do not extend past 70' with a 100' tape (and do not go past 50' with a 75' tape).

Also be careful that you don't allow a tape to rewind itself (let go of the end) without letting the person holding the tape know. The end has a sharp point and can "whip" back toward the person holding the tape.

3. Each group member should pace up and back each course three (3) times to develop a reliable average pace number for each course.

   - A field notes page should be set up for each group member.
   - Identify a pacer and a note-keeper in your group.
   - The pacer should keep careful count of paces while the note-keeper records final numbers for paces in the proper columns.
   - Switch positions and notes and repeat for each person.

4. Locate and identify the starting position for the mystery course.

   - Identify a pacer and a note-keeper in your group.
   - Carefully describe the beginning position point in your notes.
   - Traverse the following using pacing and your compass:

"Beginning at a metal rod and stake marked "D", proceed 128 feet at an azimuth of 308 degrees, thence proceed for 70 feet at an azimuth of 330 degrees, thence proceed for 155 feet at an azimuth of 62 degrees, thence proceed for 65 feet at an azimuth of 120 degrees, thence proceed for 80 feet at an azimuth of 205 degrees." Place a chaining pin in the ground at this point.

- Using the logger's tape and compass, measure the distance and azimuth to the beginning point. Record this in your field book as a "closing distance and azimuth."
- Don't forget to draw a sketch of the traverse as you go along. Include any and all pertinent information about the traverse.

Post fieldwork

1. Complete and final check your notes.

Office work

1. Draw to scale, a map of the mystery course traverse to fit on an 8 ½ x 11 sheet. Be sure to include:

   - ✓ All points labeled clearly including the starting position.
   - ✓ Nearby roads or other significant landscape features.
   - ✓ Scale and north arrow.
   - ✓ Appropriate title.
   - ✓ Clearly labeled starting and ending position of your traverse.
   - ✓ Note any errors.
   - ✓ Author and date.
   - ✓ Closing distance and azimuth.

Deliverables

Each team should hand in the following:

1. A typed letter of transmittal. Make the assumption that you were hired to do this job. This should be done in standard business letter format and addressed to me at the FERM Department. The transmittal letter should indicate what products are being delivered and should be signed by all team members.

2. A one page typed executive summary. The executive summary should provide a brief description of the survey methods and provide a tabular summary of the key results. Key results will be the length of each pacing course (A & B), the number of feet per pace (nearest 10^{th} of a foot) of each team member, and the closing distance and azimuth of the mystery course. The closing distance and azimuth are the distance (feet to the nearest 10^{th} of a foot) and direction (in degrees) from your ending position to the beginning of the mystery course.

3. Scale map of the area as described above.

4. Original or copy of field notes in proper format (one field book from each team). It is OK to take original field notes and transcribe them in a "clean" field book- just indicate on all field note pages that the information is copied from another field book (specify the owner and name of the field book).

    - ✓ Notes should be complete and signed.
    - ✓ Field book should be properly labeled with your name and class.
    - ✓ Table of contents should be up to date at the beginning of the book (Remember to leave some blank pages!).
    - ✓ Voided pages should be marked as such.
    - ✓ Pages should be numbered.
    - ✓ Remember, **NO ERASURES**.

The above items should be delivered in a manila envelope large enough to prevent folding any of the papers. The papers should be in order: transmittal letter, executive summary, scale map, and field notes.

Lab day	Due dates
Monday	Friday at noon
Tuesday	Monday at noon
Wednesday	Tuesday at noon

Please put your assignment in the mailbox outside my door (Peavy 275) or in the FERM office (Peavy 204).

Please write on the front of the envelope your name(s), course number (FE 308), and whether you are in the Monday, Tuesday, or Wednesday lab.

Field Book Considerations

Field notes are a written *record,* made by you in the field and meant to be interpreted by a person having some knowledge of surveying.

Assumptions:

The person reading the notes:

- Has poor eyesight
- Is not clairvoyant
- Will try to find errors or ambiguities

1. **General requirements for a field book**

   5 main characteristics:
   - Accuracy -
   - Integrity – No missing measurements – field check
   - Legibility – notes must be readable
   - Arrangement – note form should be appropriate to the type survey
   - Clarity – Easy to read – no crowding.

2. **Original vs. copy**

   Notes should be distinguished as either original or copy. Copy notes may not be admissible in court due to uncertainty.

3. **Types of field notes**

   Transit book

   Level book

4. **Note form**

- Book Front

  Name

Address
Phone #
Class #
Number book of books

- Front page inside

Same as book front

- Page numbering

Leave the first couple of pages free

Left / right pages numbered the same

- Notes pages requirements

Each page of measurement notes should have an accompanying sketch

The following information should be contained in the notes or sketch pages for every project

Project name

Date / time
Weather
Party names
Instruments used and instrument numbers where appropriate
Sketch with North arrow and scale
Signature
"Original" or "copy" statement
No erasing
If an additional page is needed for notes, include a "continued on p. x" note and a "continued from p. x" on the respective notes pages.