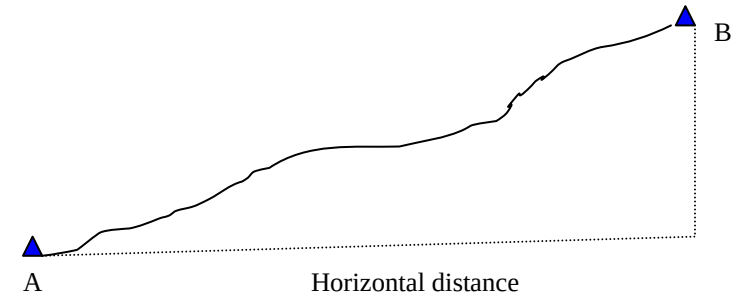
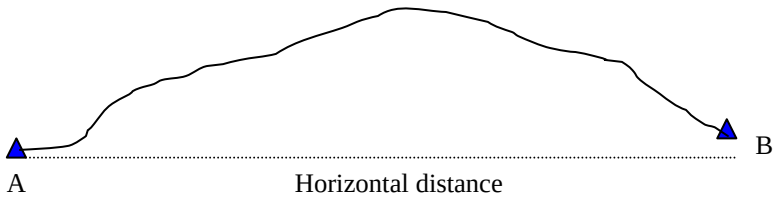
FE 308
Lecture 3 – Horizontal Distance





Horizontal distance can be measured a number of ways including:

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-
-
-
-

Taping (formerly called chaining)

Equipment used:

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-
-
-
-

Crew duties:

- Head Chainman - HC
- Rear Chainman – RC
- Notes - 

Other crew duties:

- Party Chief - PC
- Instrument - 
- Rodman - Rod or 

HC

-
-
-
-

RC

-
-
-
-

Notes

-
-
-

Party Chief

-
-
-

Instrument

-
-
-

Rodman

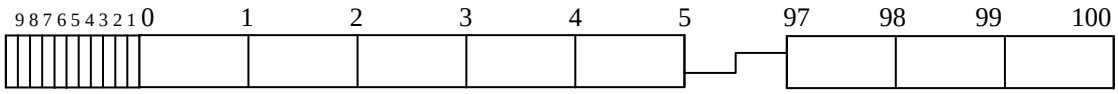
-
-
-

Measuring horizontal distance

Steel tapes

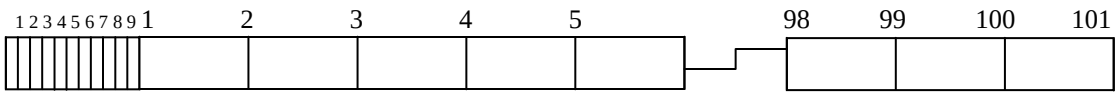
- 100’ steel tape used commonly – 2 types

1. **Addition** tapes are 101’ long graduated to 1 foot increments with the zero end preceded by 1 foot incremented to the tenth.



Addition tape

2. **Subtraction** Tapes are 101’ long graduated to 1 foot increments with the zero end to 1-foot end and the 99-foot to 100-foot end incremented to the tenth.



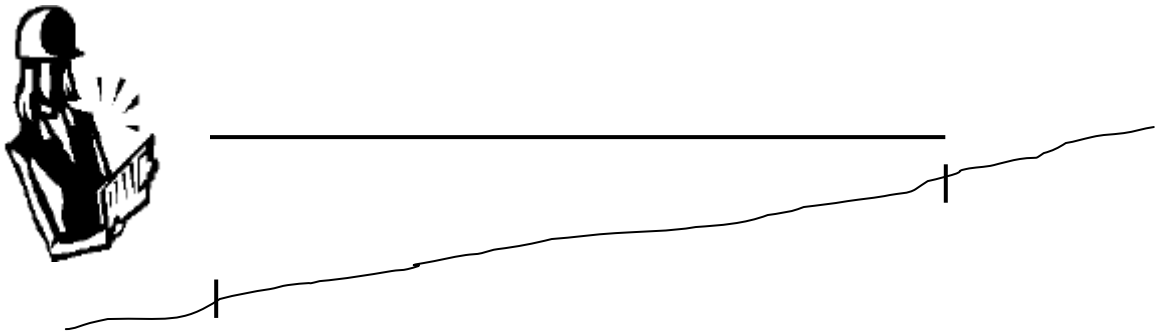
Subtraction tape

The distance measurement

There are 2 primary ways to take distance measurements:

1.
2.

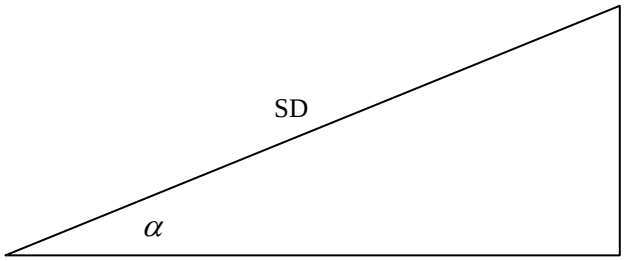
Horizontal



Horizontal distance is read directly

Slope distance

- Actual slope distance is measured and recorded
- Horizontal / vertical distances and/or angles measured and slope is derived



From trigonometry relationships:

If α is in degrees, then:

Example:

You measured 87.55 feet on a 37 degree slope. The horizontal distance is:

If α is in percent, then:

Example:

You measured 87.55 feet on a 40 percent slope. The horizontal distance is:

Breaking Chain

The concept of breaking chain is the measurement of a long distance divided into short horizontal steps.