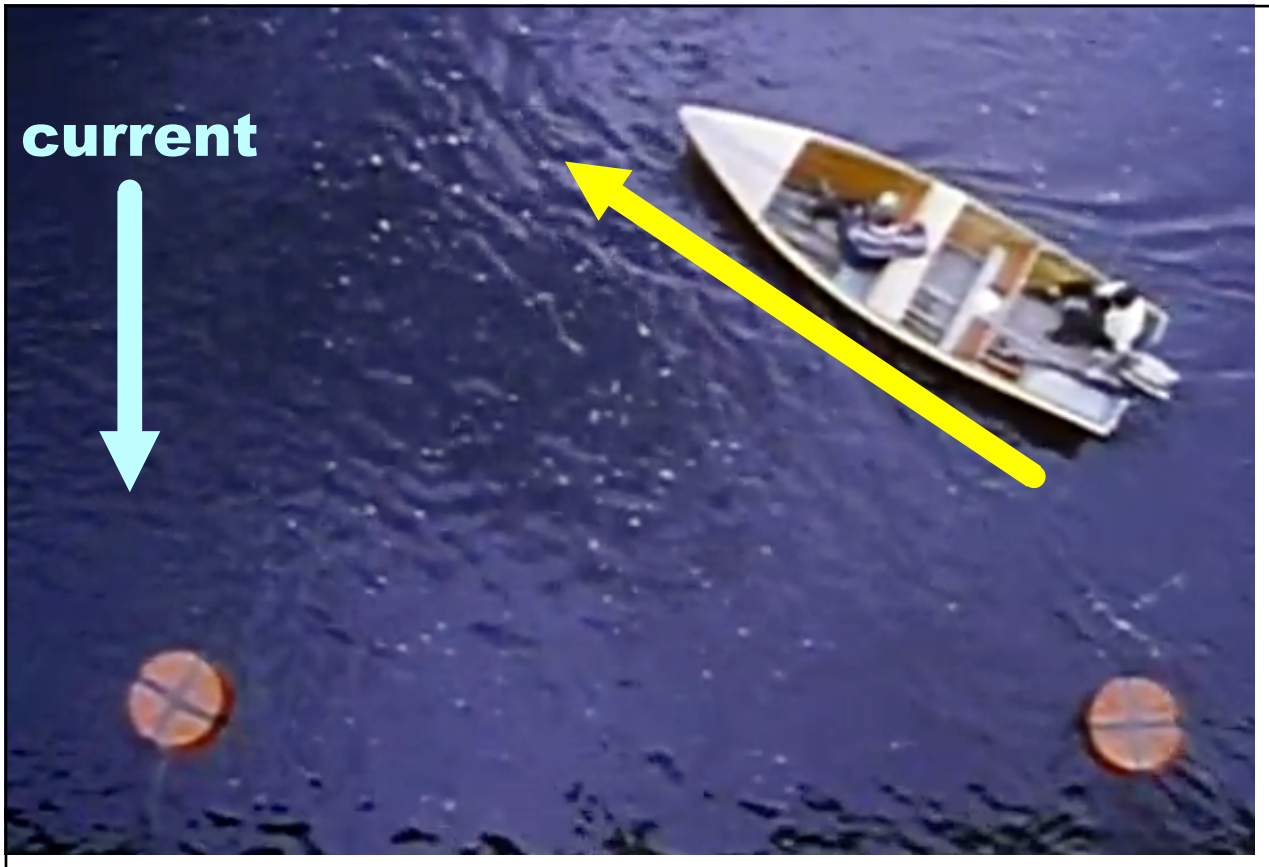
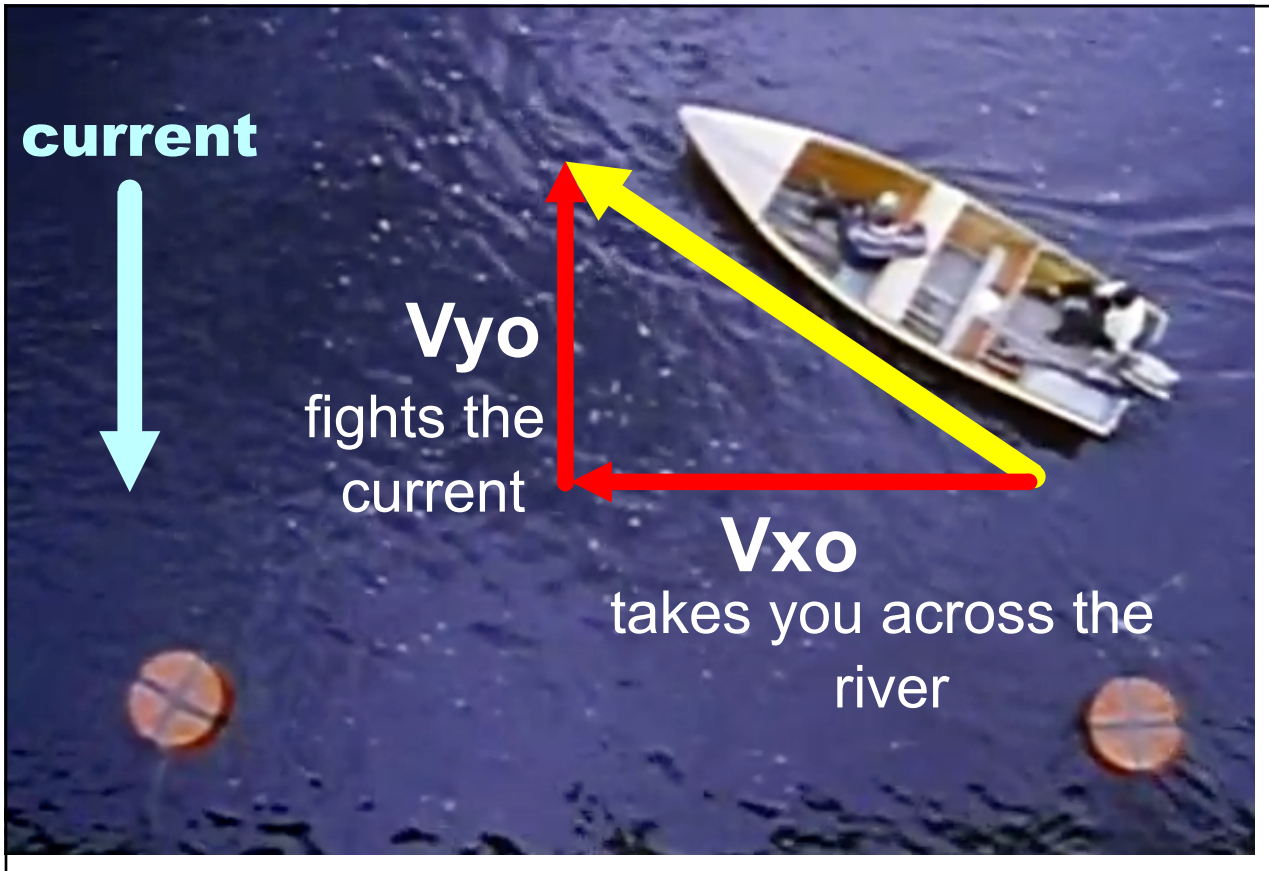
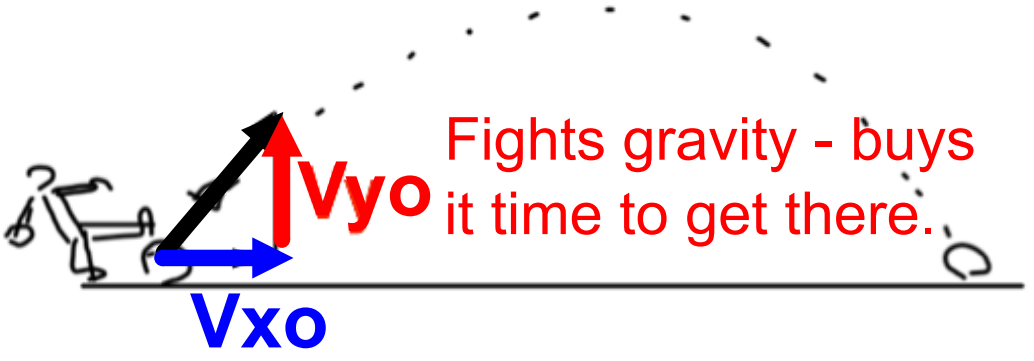

current


current
Vyo
fights the current
Vxo
takes you across the river


PHI 0
WSH 0
1st 14:51 1st & 10


Vyo
fights
gravity
Vxo
takes the ball to
the receiver
PHI 0
WSH 0
1st 14:51 1st & 10



Fights gravity - buys it time to get there.

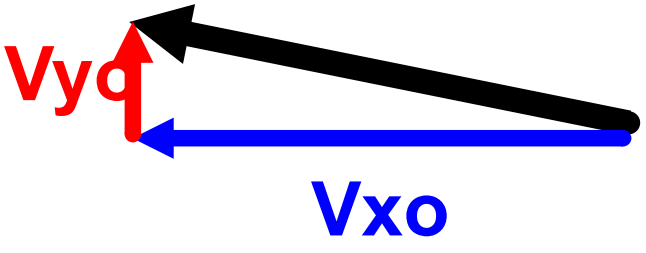
Takes it to the target.

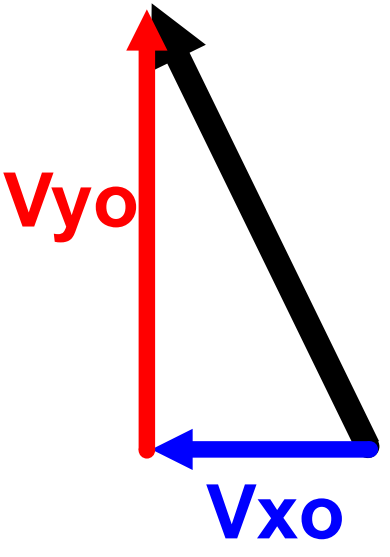
It's a trade off. You're sacrificing some of the velocity to buy time.

Changing the angle:

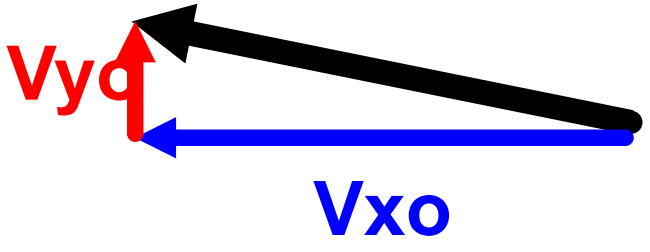
What happens to the range?

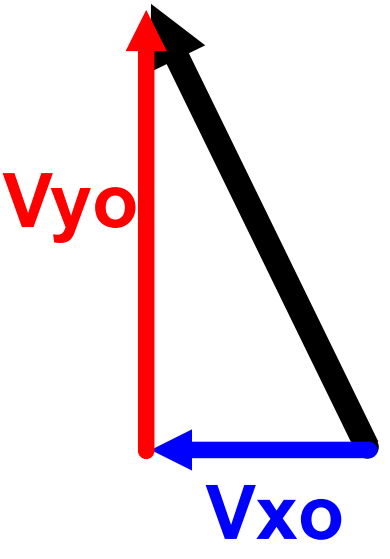
What happens to the time?

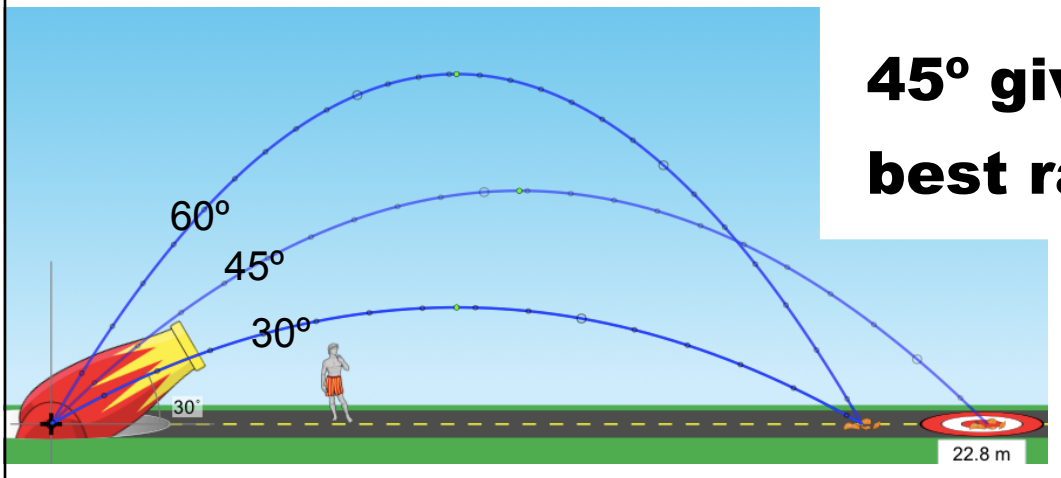




So what angle gives the best range?







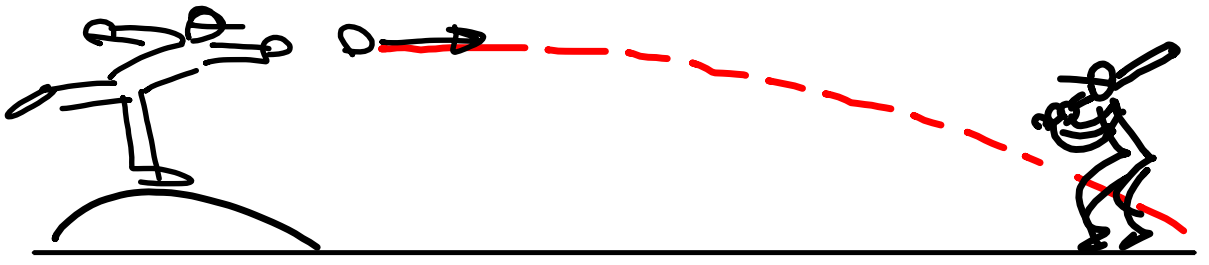
45º gives the best range.

Higher angles take more time to get there.

Complementary angles hit the same spot.

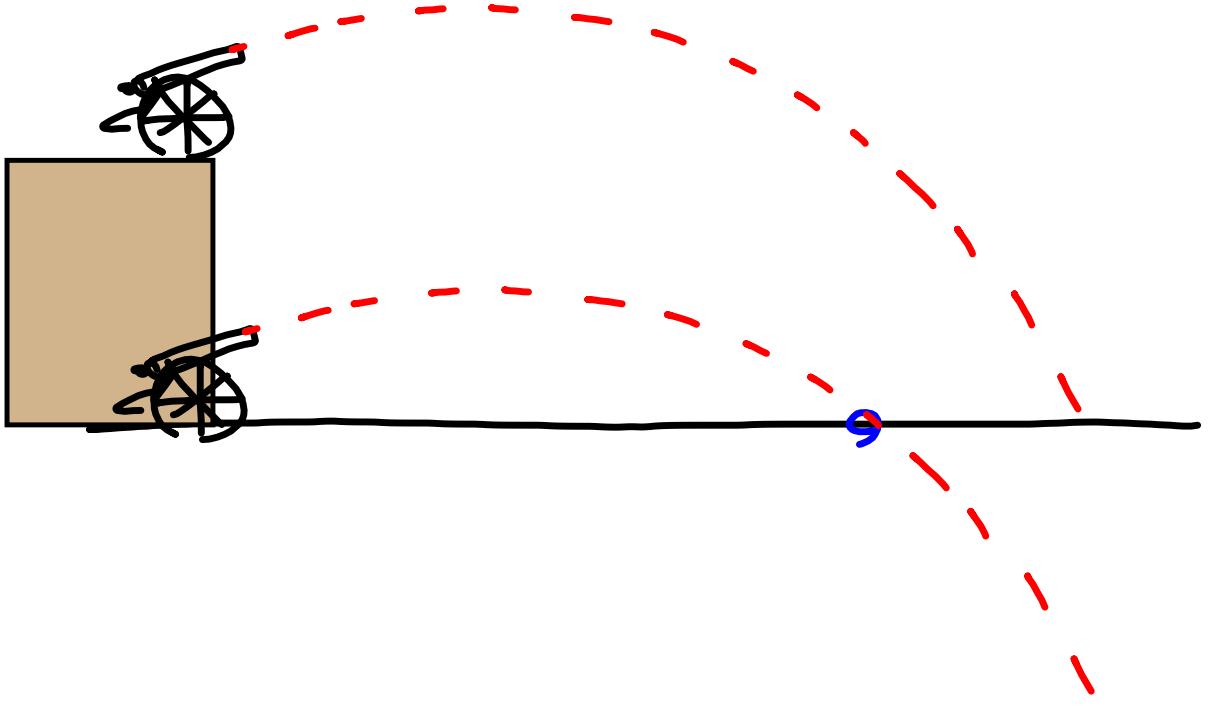
(Range is symmetrical around 45º.)

Pitching - you don't want to sacrifice your Vxo, but it will hit the ground too soon!

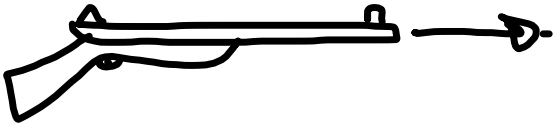


Solution: Put the pitcher on a hill (mound).

Height increases range. Taking and holding hills has always been a military priority.

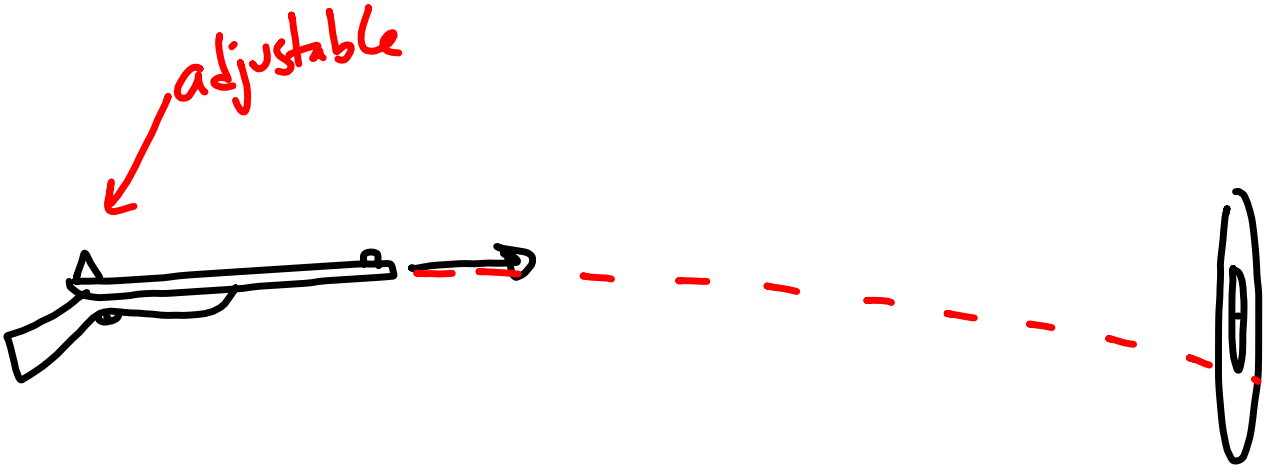


Do all projectiles fall or are bullets an exception?



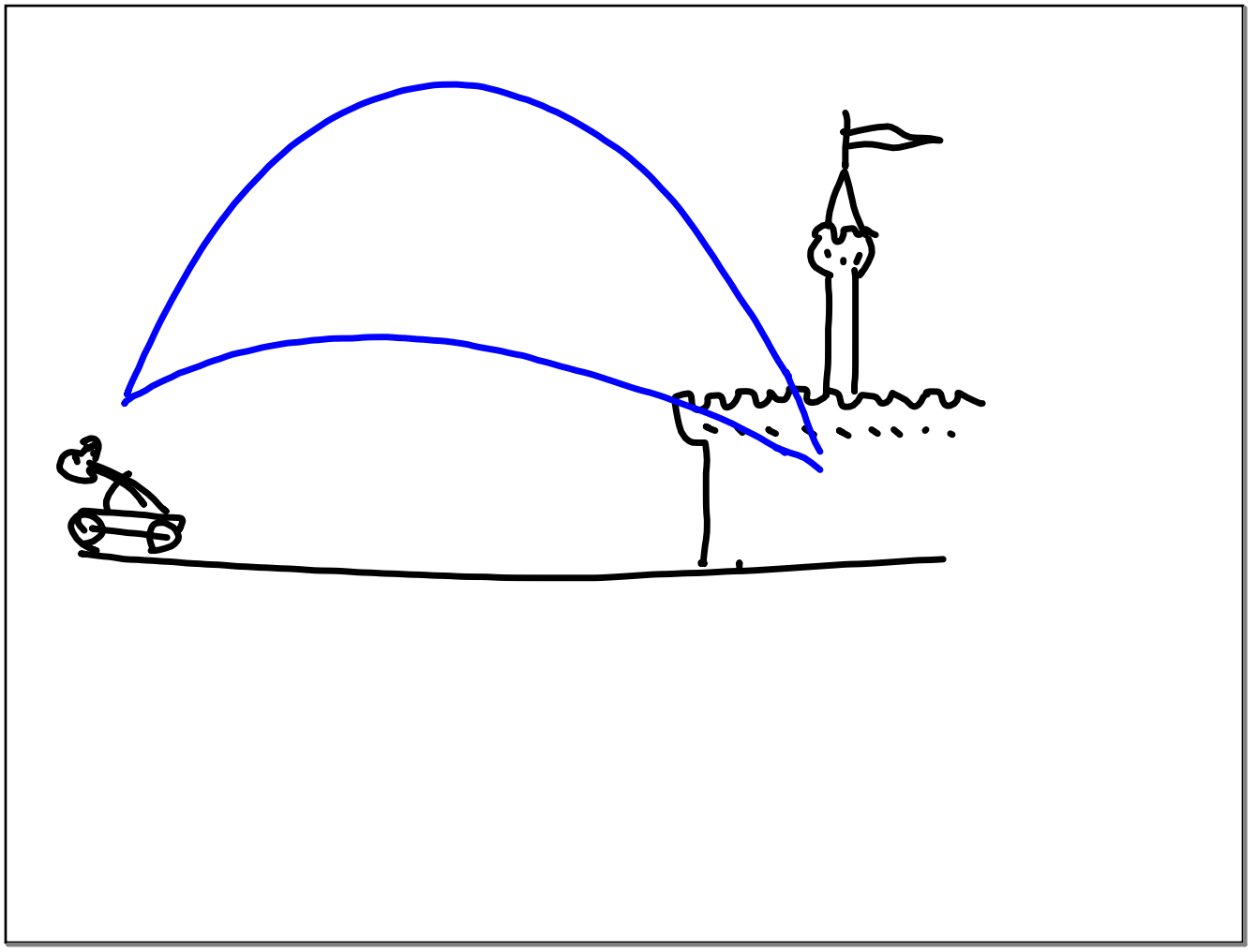
Are bullets an exception?

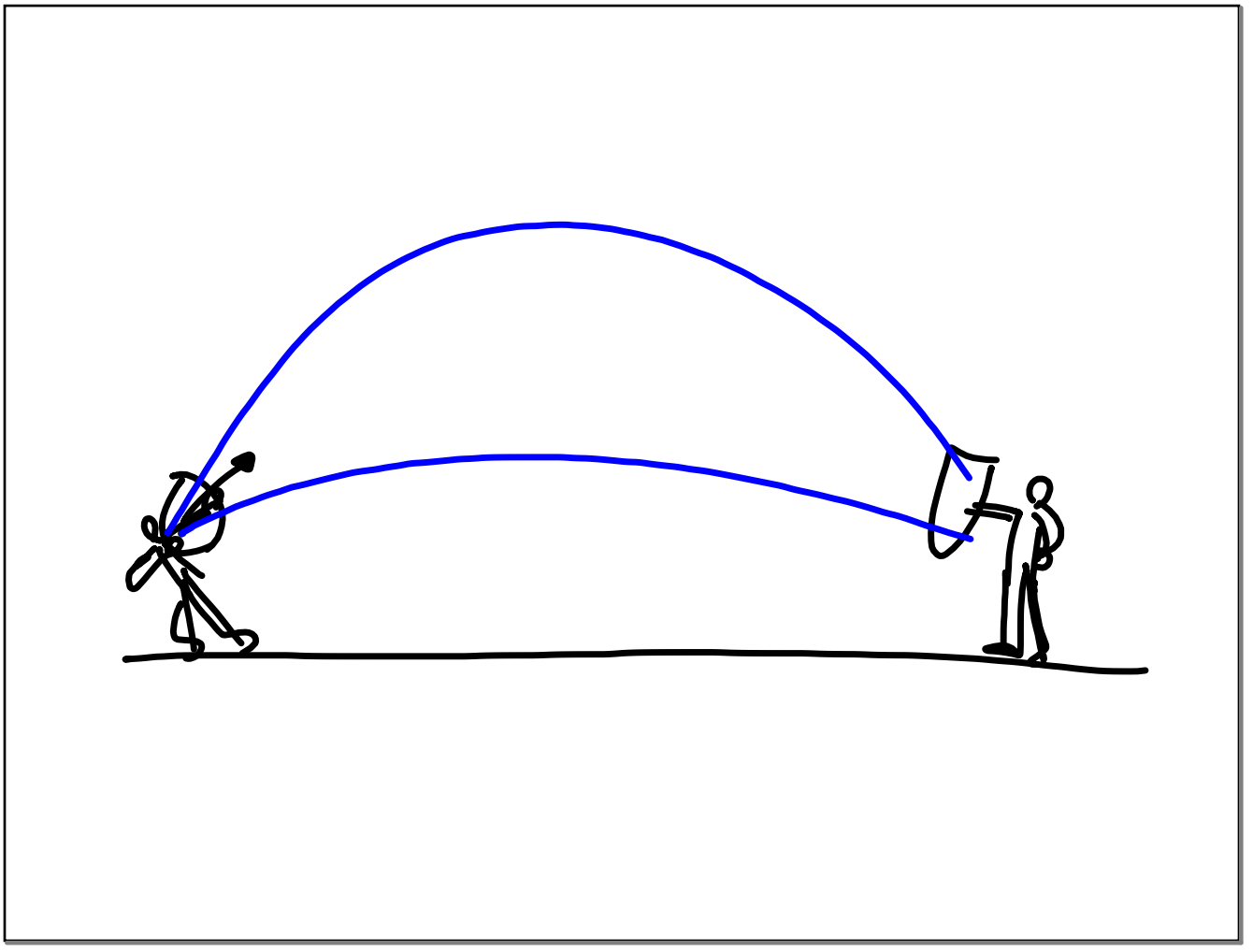
NO!

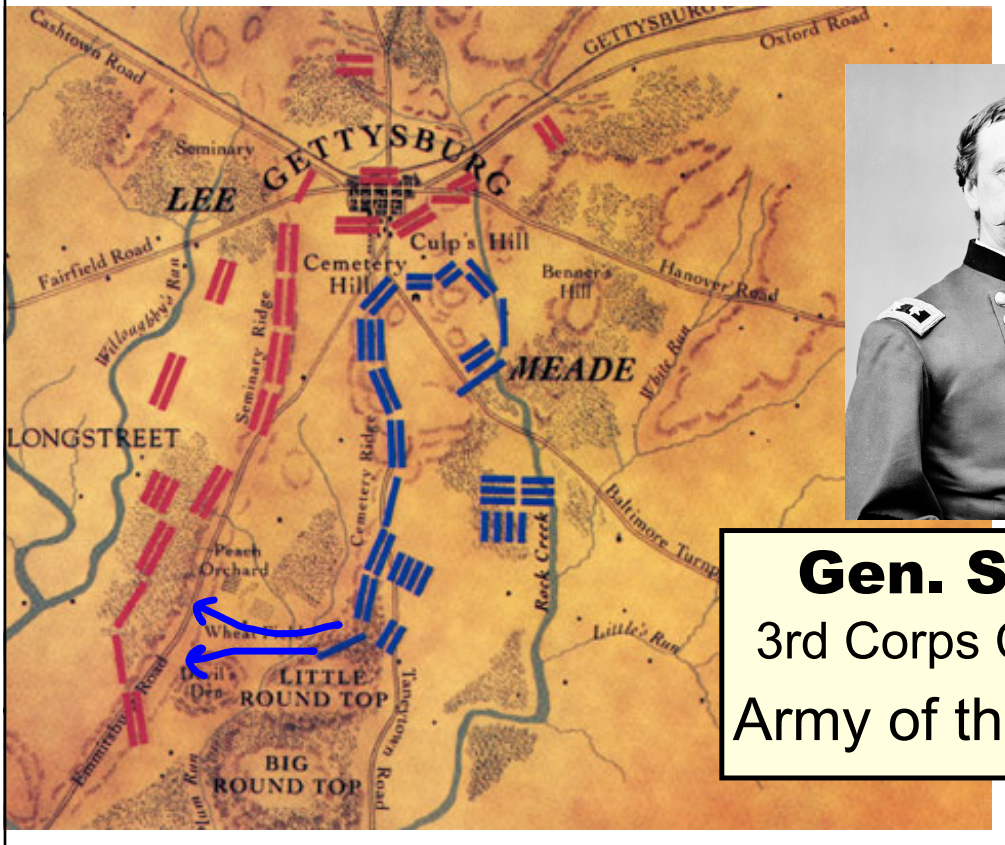


You raise the rear site for distant targets.

That causes you to aim up.



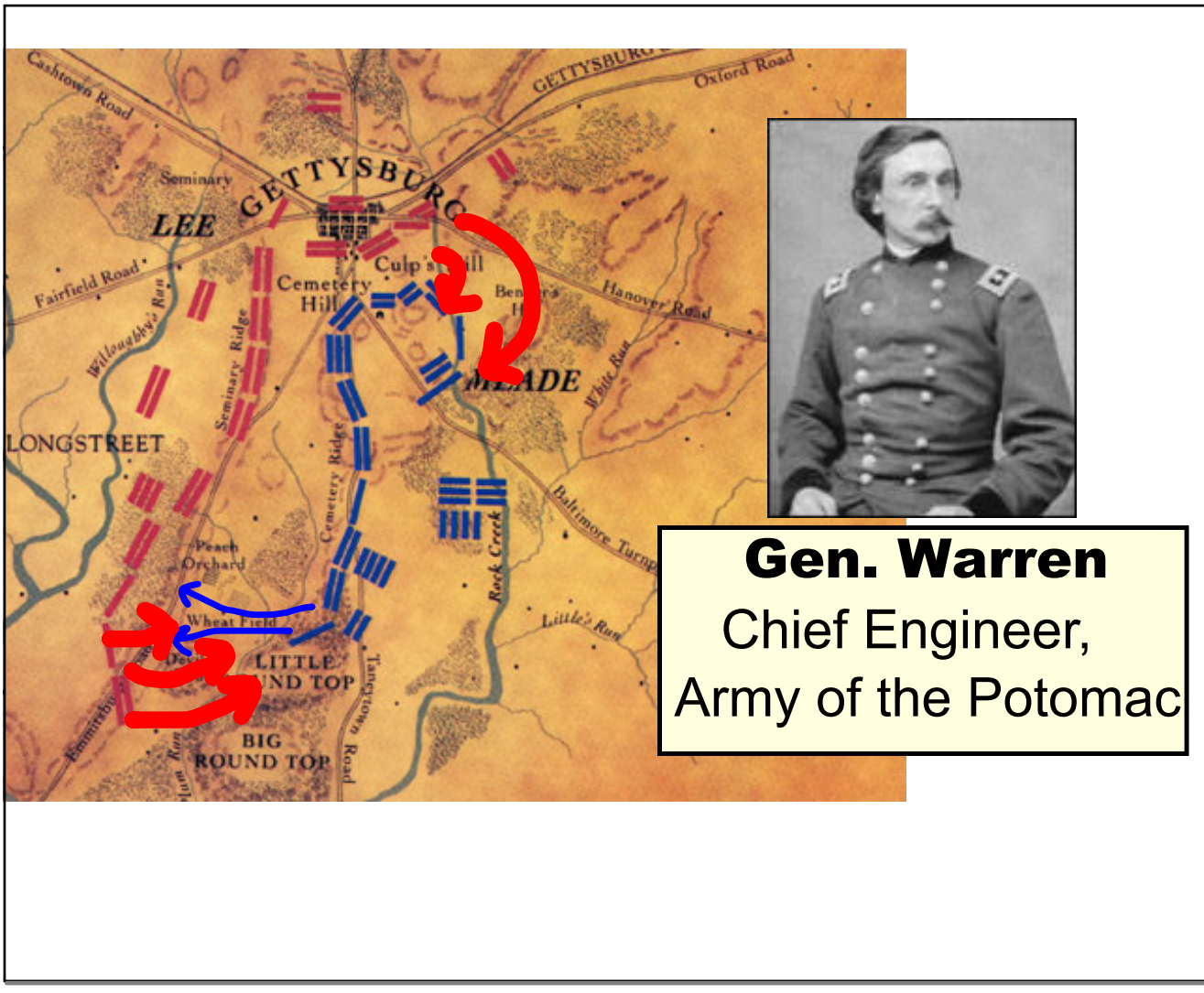


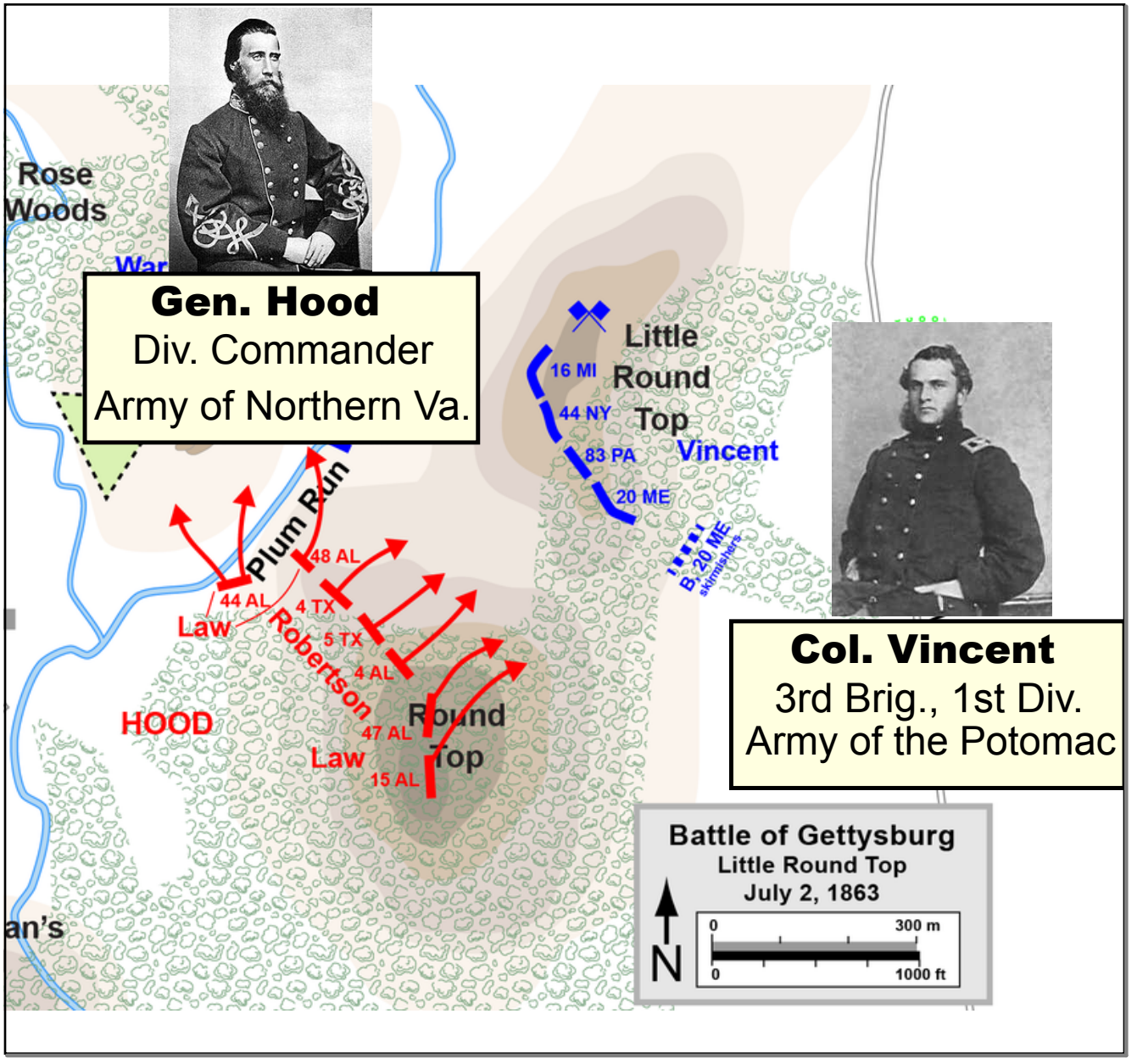


Gen. Sickles

3rd Corps Commander

Army of the Potomac


Cashtown Road
GETTYSBURG
Oxford Road
Seminary
LEE
GETTYSBURG
Fairfield Road
Cemetery Hill
Culp's Hill
Hanover Road
Willoughby's Run
Seminary Ridge
MEADE
White Run
LONGSTREET
Cemetery Ridge
Baltimore Turnpike
Rock Creek
Peach Orchard
Wheat Field
LITTLE ROUND TOP
Little's Run
Emmitsburg
BIG ROUND TOP
Tanneytown Road
Gen. Warren
Chief Engineer,
Army of the Potomac


Rose
Woods
Gen. Hood
Div. Commander
Army of Northern Va.
Little
Round
Top
16 MI
44 NY
83 PA
20 ME
Vincent
B, 20 ME
skirmishers
Plum Run
48 AL
44 AL
Law
4 TX
Robertson
5 TX
4 AL
HOOD
47 AL
Law
15 AL
Round
Top
Col. Vincent
3rd Brig., 1st Div.
Army of the Potomac
Battle of Gettysburg
Little Round Top
July 2, 1863
N
0
300 m
0
1000 ft

Gen. Warren

Chief Engineer,
Army of the Potomac