



A SEMINAR ON CASEY'S SCHOOLS OF INSTRUCTION

SCHOOLS OF THE SOLDIER AND COMPANY

FIRING DISTANCES AND THE OBLIQUE FIRE

STEVE GIOVANNINI

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FIRING AT THE LEFT OBLIQUE

THE GREAT DEBATE

The Debate

- Substantial debate within the reenactor community about the proper method to fire at left oblique for those that adhere to Hardee's and Casey's instructions.
 - **School of the Soldier:**
 - **POSITION OF THE TWO RANKS IN THE OBLIQUE FIRE TO THE LEFT.**
 - **279.** At the cautionary command *left oblique*, the two ranks will throw back the left shoulder, and look steadily at the object to be hit.
 - **280.** At the command *aim*, the front-rank will take aim to the left without deranging the feet; each man in the rear-rank will advance the right foot, about eight inches toward the right heel of the man next on the right of his file leader, and aim to the left, inclining the upper part of the body forward, and bending a little the right knee.
- Some argue the phrase "aim to the left" means that the left oblique should be aimed over the *left* shoulder of the file partner.
- Some argue the phrase "aim to the left" means that the left oblique should be aimed over the *right* shoulder of the file partner.

Left shoulder - proponents

- There are a number of reenactors that argue that when firing at the left oblique, the musket is positioned over the left shoulder of your file partner.
- Mark Silas Tackitt authored a very interesting article titled:
 - “Debunking the Last Great Reenactorism : Left Oblique Aiming Through the Right Interval”
 - He performed extensive research and identified a number of manuals for infantry tactics that explicitly instruct the firing at the left oblique over the left shoulder of the file partner.
- **He asserts that aiming over the left shoulder was “obvious to all” and suggests it was therefore omitted in Hardee’s manual:**
 - “For more than thirty years, the only method specified for aiming was through the left interval. Being obvious to all, Hardee and subsequent compilers may have believed it unnecessary to repeat the full phrase as the partial phrase, “aim to the left,” seemed sufficient. Had Hardee intended an entirely new method and wanted others to comply, he would have stated specific instruction such as : ... and take aim to the left through the right intervals of their file-leaders. But he didn’t.”
- He references a question-answer exchange in an 1865 drill “Dear Abby” type column
 - S.L.H., Vicksburg.—“Through what interval does the rear-rank man aim in firing to the left oblique?”
 - Answer.—Over the left shoulder of the man in front of him.
 - See : Vol. III, United States Service Magazine, p. 285 (New York, 1865)
- He concludes his paper by asserting:
 - When all authorities say to aim through the left interval and when no period authorities say otherwise, reenactors should conform to period practice by aiming through the left interval. This method is easier and safer than making a large, off-balance step to the right to fire the left. Use the body and foot movements demonstrated herein when firing to the left. **Accordingly, aiming through the right interval to the left is hereinafter a debunked reenactorism.**

Right shoulder – proponents (1 of 2)

- **Neither Hardee nor Casey assume anything is “obvious to all”.**
 - Having studied Hardee’s and Casey’s instructions, if they wanted soldiers to execute a maneuver a particular way, they would have described it, in particular something so different as firing over the left shoulder.
 - Recall that Hardee’s and Casey’s are written as lesson plans **for the instructor**. They tell the instructor how to teach the mechanisms of each maneuver.
 - I counter that had Hardee and Casey intended the musket to be fired over the left shoulder of their file partner, they would have stated specific instructions to safely transition a loaded musket from the ready position, which is positioned on the right side of the file partner, over the head of and aim it across the left shoulder of the file partner. They did not!
- **Footwork complements oblique firing**
 - All the ante-bellum manuals identified by Tackitt that direct firing over the left shoulder, define footwork that carry the rear rank soldier in the direction to the **left** of their file partner.
 - The directions for the footwork for the left oblique in Hardee’s and Casey’s is different! They carry the soldier in the direction to the **right** of their file partner.
 - Of the post-bellum manuals identified by Tackitt that did indeed direct firing over the left shoulder,
 - Pace in his 1865 manual for the left oblique, used the Hardee and Casey footwork that carried the rear rank soldier in the direction to the right of their file partner. However he did not use the Hardee and Casey footwork for the right oblique.
 - Perhaps Pace, like Tackitt, subscribed to the “instruction omission” theory and enhanced the left oblique instruction to explicitly instruct firing over the left shoulder.
 - However, Upton’s 1868 manual for the left oblique, which also explicitly instructed firing over the left shoulder, defined footwork that carried the rear rank soldier in the direction to the left of their file partner.

Right shoulder – proponents (2 of 2)

- What about that United States Service Magazine answer that the oblique fire is “Over the left shoulder of the man in front of him.”?
- The author of the answer does not state which manual is used as a reference; does not specify footwork.
- In the THE WATCHDOG. A QUARTERLY REVIEW FOR CIVIL WAR ENACTORS, Volume 11, No.4 FALL 2003
 - (<http://www.nisekela.com/reference/watchdog/watchdogv11n4.pdf>)
 - **James R. Ruley argues that firing over the right shoulder is the proper method for Hardee’s and Casey’s instructions**
 - Acknowledges the left-interval/right-interval debate
 - Makes same observations that footwork must complement rifle position
 - Acknowledges severe angle (45-60) that is enabled by firing over the left shoulder
 - Points out the blind spot from 30-0 caused by combining Hardee’s footwork and firing over left shoulder
 - Observes that footwork is not specified in the response, questions which manual author used as reference.
 - Discusses the absence of caution and instructions for rear rank to move rifle over head of file partner
 - Provides biography of author; postulates that the author’s response is based on Scott’s tactics, not Hardee’s.
- **Conclusion**
- **Firing over right shoulder of file partner is the proper execution combined with the footwork prescribed in Hardee’s and Casey’s.**
- Despite all his research, and because of it, **I disagree with Silas Tackitt’s conclusion.**
- Having practiced the Hardee and Casey method’s with my troops, **you cannot carry the body to the right of your file partner, aim back over his left shoulder, and not risk damaging the head of the man to the left of your file partner!**

Debunking the reenactorism

- The root cause of this debate is the close quarter distances that reenactors close to when firing!
 - The severe angle required to aim at the enemy that has advanced to extremely close distances and is moving laterally to threaten the flank, cannot be achieved by the rear rank, because the front rank has effectively closed the oblique-window.
- Therefore reenactors think there is something wrong with the instruction and rationalize a correction to the instruction.
 - The “fix” they pursue is to direct men to fire over the left shoulder in order to aim at the severe angle required by reenactor distances.
 - Some even create “manuals for reenactors” that combine instructions from different manuals.
- Hardee’s & Casey’s instructions differ from the ante-bellum manuals.
 - That doesn’t mean they are wrong.
 - We don’t need to “fix” the Hardee & Casey Instructions.
 - We need to fix the reenactor impression and fire at period-correct distances!
- Reenactor-distances is the reenactorism that needs to be fixed!!

FIRING DISTANCES

Musket range and accuracy: Specifications

- According to the Civil War Wiki
- The specifications for the 1861 Pattern Springfield musket:
 - Rate of fire: User dependent; usually 2 to 3 rounds per minute
 - Muzzle velocity: 950 feet per second
 - Effective range: 100 to 400 yards
 - Maximum range: 900-1000 yards
 - Sights: 100, 300, 500 yards
 - Reference: http://civilwarwiki.net/wiki/1861_Springfield_Rifle-Musket
- The specifications for the 1853 Pattern Enfield musket:
 - Rate of fire: User dependent, usually 3+ rounds a minute
 - Muzzle velocity: 900 ft/s (270 m/s)
 - Effective range: 100 to 900 yards
 - Maximum range: 2000 yards
 - Sights: adjustable ramp rear sights, Fixed-post front sights
 - Reference: [http://civilwarwiki.net/wiki/1853_Pattern_Enfield_Rifle-Musket \(P53\)](http://civilwarwiki.net/wiki/1853_Pattern_Enfield_Rifle-Musket_(P53))

Musket range and accuracy:

Perspectives

- Richard E. Kerr Jr., MAJ, USA documents in his Master of Military Art and Science Thesis, titled WALL OF FIRE – THE RIFLE AND CIVIL WAR INFANTRY TACTICS
 - troops during the American Civil War typically engaged their enemy at 300 yards.
 - Reference: <https://apps.dtic.mil/dtic/tr/fulltext/u2/a227467.pdf>
- Historic perspective of the Battle of Gettysburg,
 - *When the first line of the enemy had advanced to within about two hundred yards, our fire opened almost simultaneously along the whole line. The enemy's first line was broken and hurled back upon the second, throwing it also into confusion. Detached portions of the lines were rallied, and for a short time maintained their ground. Being mown down by our terribly destructive fire, they commenced falling back, when a portion of this regiment charged upon them, capturing five regimental battle-flags and over forty prisoners.*
 - “had advanced to within about two hundred yards”
 - “mown down by our terribly destructive fire”
 - Source: History of the 14th Regiment Connecticut Volunteer Infantry
 - https://www.cof14thcvi.com/Readings/Unit_History.pdf
- For additional perspective:
 - during the National musket match of the North-South Skirmish Association, competitors shoot at and hit a 6 inch X 6 inch target at 100 yards distant.
 - At Regional musket matches a typical target for the 100 yard event is a 2 liter water bottle.
 - (Reference: <http://www.n-ssa.org/teamevents>)

TRAVELING DISTANCES

50 yards = One and Done Zone

- It takes a soldier
 - 20 seconds to reload a musket when firing 3 rounds per minute
 - 30 seconds to reload a musket when firing 2 rounds per minute
- A soldier can travel
 - 50 yards in 20 seconds
 - 75 yards in 30 second
- Therefore, with any firing distance closer than 50 yards, the adversary can close before a second round can be fired!

50 yards in 20 seconds? - The Math

- The instructions from Casey's School of the Soldier
 - Quick time: length of step = 28 inches; rate = 110 steps per minute.
 - Double quick time: length of step = thirty-three inches; rate = 165 steps per minute.
 - Casey's instructions: 101, 109, 111 & Hardees's instructions: 94, 102, 104
- The math to determine how much ground troops can cover given a pace and cadence
 - $(\text{number of inches per step}) * (\text{steps per minute}) = (\text{number of inches per minute})$
 - $(\text{number of inches per minute}) * (1 \text{ foot per } 12 \text{ inches}) = (\text{number of feet per minute})$
 - $(\text{number of feet per minute}) * (1 \text{ minute per } 60 \text{ seconds}) = (\text{number of feet per second})$
- At quick time, a soldier can cover approximately 4.3 feet per second
 - $(28 \text{ inches per step}) * (110 \text{ steps per minute}) = 3080 \text{ inches per minute}$
 - $(3080 \text{ inches per minute}) * (1 \text{ foot per } 12 \text{ inches}) = 256.67 \text{ feet per minute}$
 - $(256.67 \text{ feet per minute}) * (1 \text{ minute per } 60 \text{ seconds}) = 4.28 \text{ feet per second}$
 - Approximately 4.3 feet per second.
- At double quick time (165), a soldier can cover approximately 7.6 feet per second.
 - $(33 \text{ inches per step}) * (165 \text{ steps per minute}) = 5445 \text{ inches per minute}$
 - $(5445 \text{ inches per minute}) * (1 \text{ foot per } 12 \text{ inches}) = 453.75 \text{ feet per minute}$
 - $(453.75 \text{ feet per minute}) * (1 \text{ minute per } 60 \text{ seconds}) = 7.56 \text{ feet per second}$
 - Approximately 7.6 feet per second.
- Therefore, the distance a soldier can cover in 20 seconds is approximately:
 - Marching in quick time: approximately 86 feet or a little more than 28.6 yards
 - Marching in double quick time (165): 152 feet or a little more than 50 yards

The reenactorism?

Reenactor firing distances!

- The rifled musket was effective between 100-400 yards
- Troops engaged at 200-300 yards distant
- A soldier takes about 20 seconds to reload
- A soldier can traverse 50 yards in 20 seconds.
- Why do we insist on misrepresenting the civil war to audiences (and ourselves) by marching to significantly less than 50 yards of each other, sometimes within 50 *feet* of the enemy, stand fast and then exchange volley upon volley?
 - It is a disservice to history and the memory of the soldiers we portray!!
 - It is the reason why our firing instructions don't seem to work.
 - We should only be closing to these distances when we intend to perform or allow a hand to hand combat scenario.
- At all our events, unless historic evidence of the scenario calls for it, we should close no closer than 100 yards.

Elevating the musket is not period correct
(and at close range looks ridiculous)



Illustrations

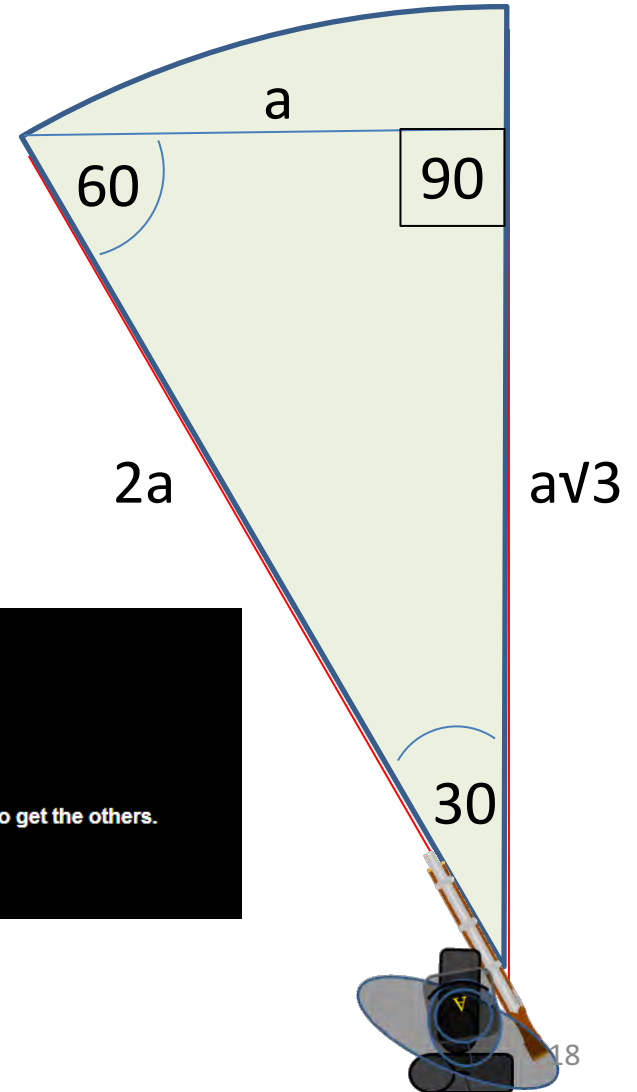
PERIOD CORRECT DISTANCES AND THE LEFT OBLIQUE

Diagram Dimensions

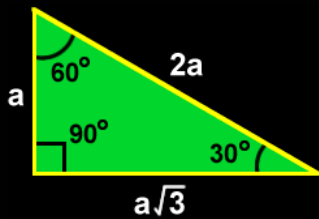
- To make the math easier, assume the average width of a man, elbow to elbow, is 24 inches
- Assume 2 late war companies with a total of 150 men arranged in 2 ranks.
 - Therefore they have a 75-man front which would occupy a width of 150 feet or 50 yards.
- The oblique Fire
 - what was the maximum angle use during the oblique fire?
 - often hear “no more than 30 degrees”
 - certainly achievable with the footwork described in Casey’s and Hardee’s AND still fire over the right shoulder of your file partner.
- Illustration
 - Range and field of fire provided by a 30 degree oblique angle
 - Initially at a range of 100 yards

The choice of the 30 degree oblique makes the math easy.

For the oblique firing, the effective range of the musket would be represented by the hypotenuse of the 30-60-90 triangle.



Special Triangles:



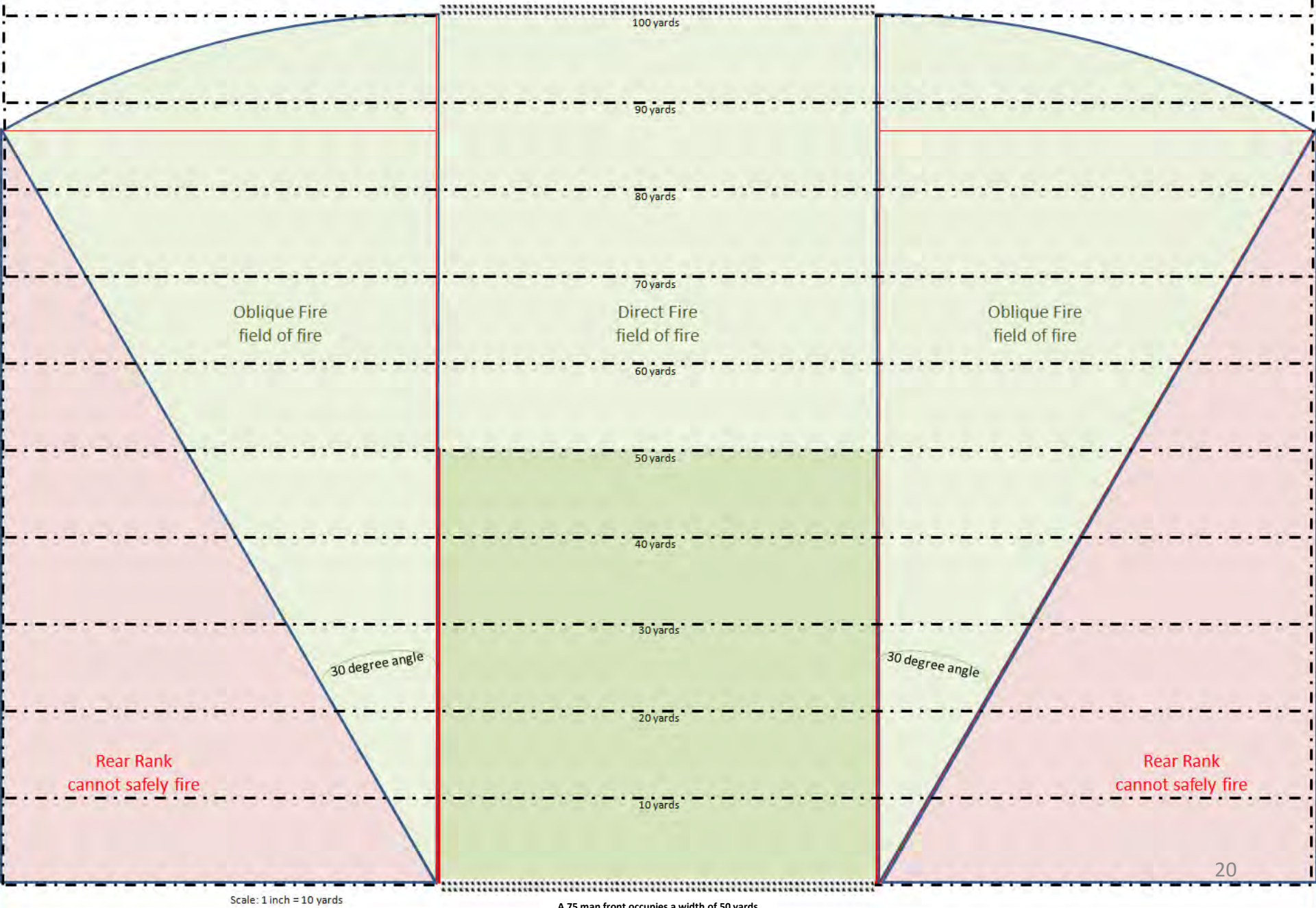
The 30-60-90 Triangle:

If you have one side, you can use these formulas (and maybe a little algebra) to get the others.

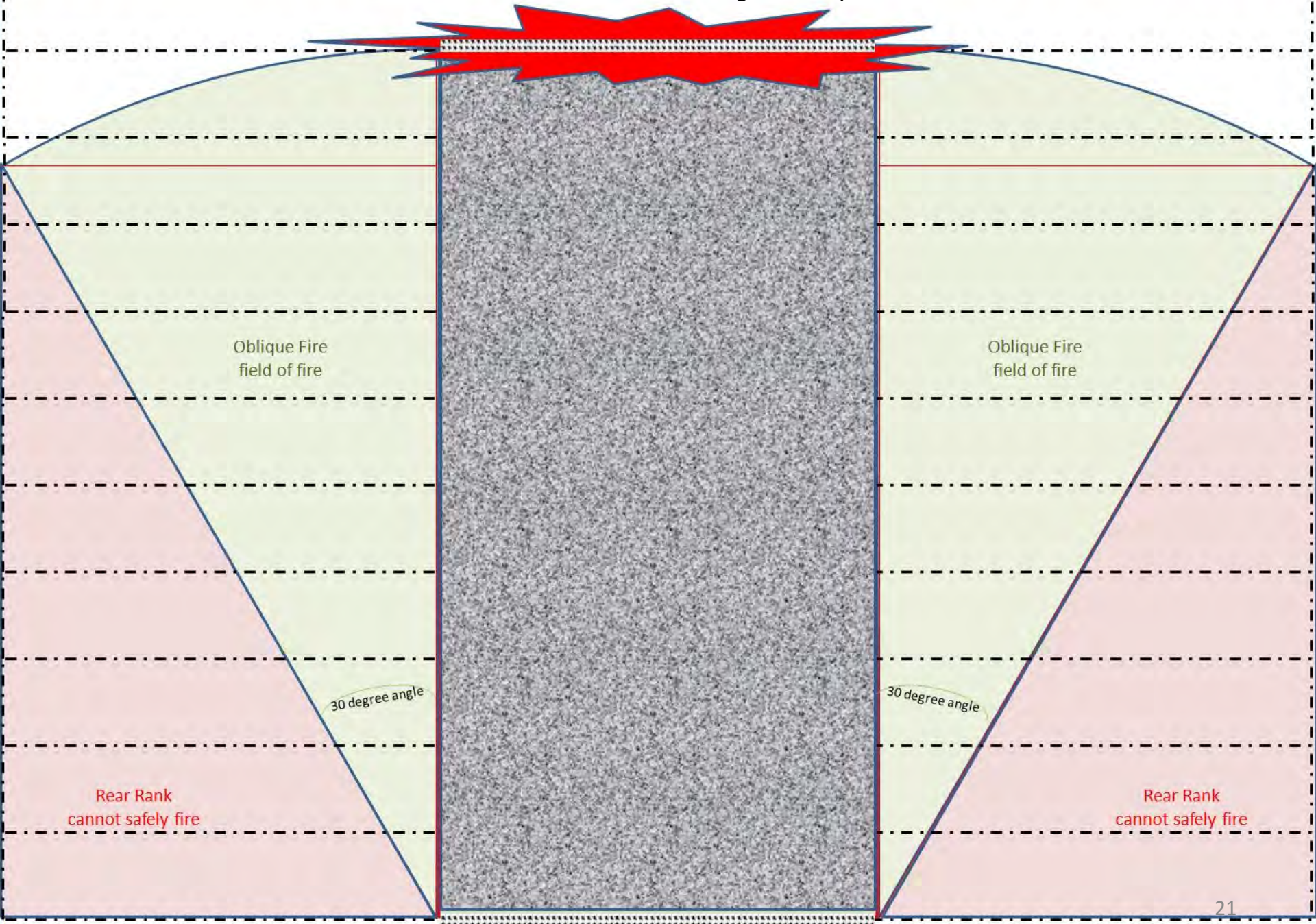
Illustrations

100 YARD DISTANT

Troops advanced to within 100 yards of each other.



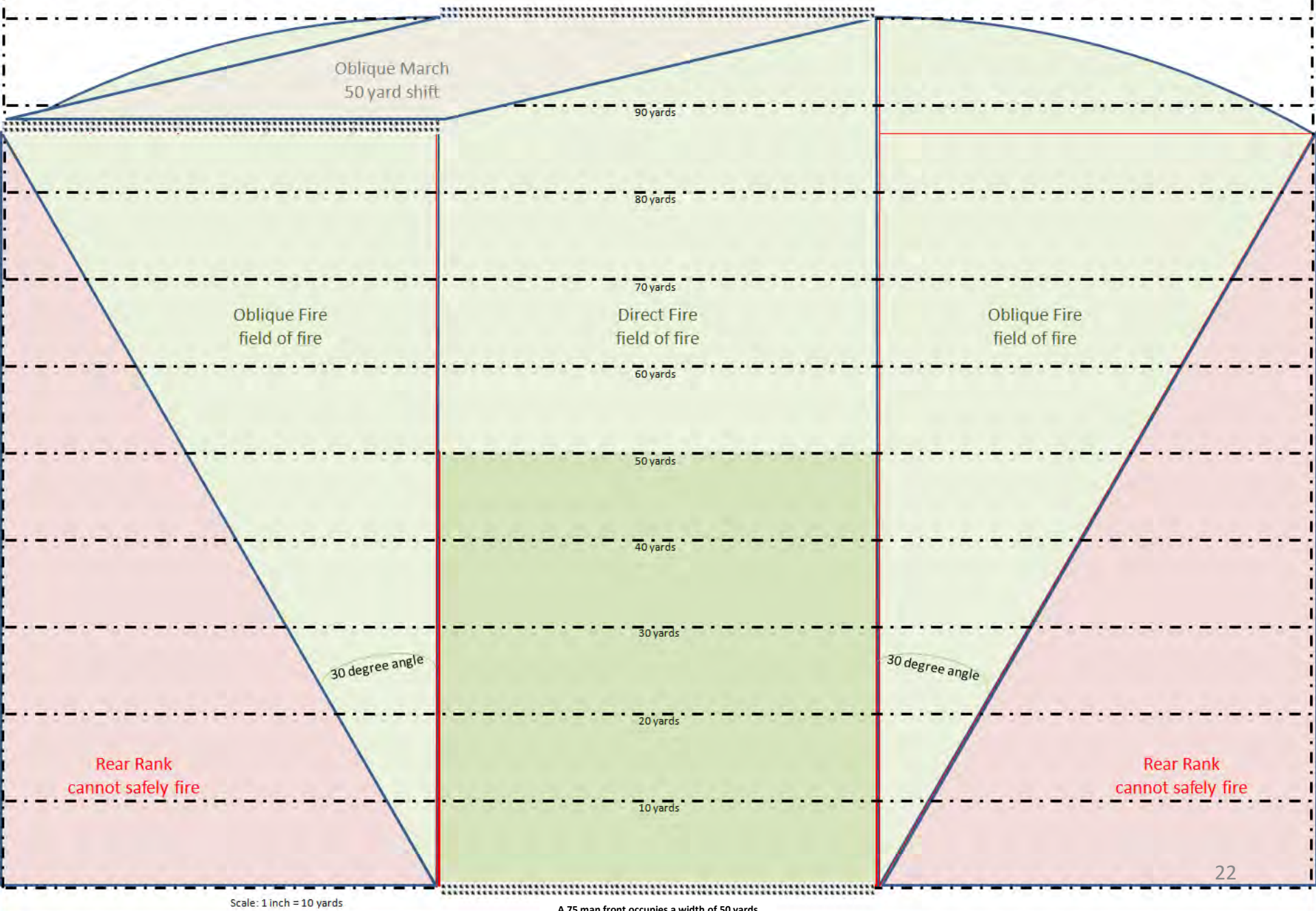
Direct Fire – within effective range at 100 yards



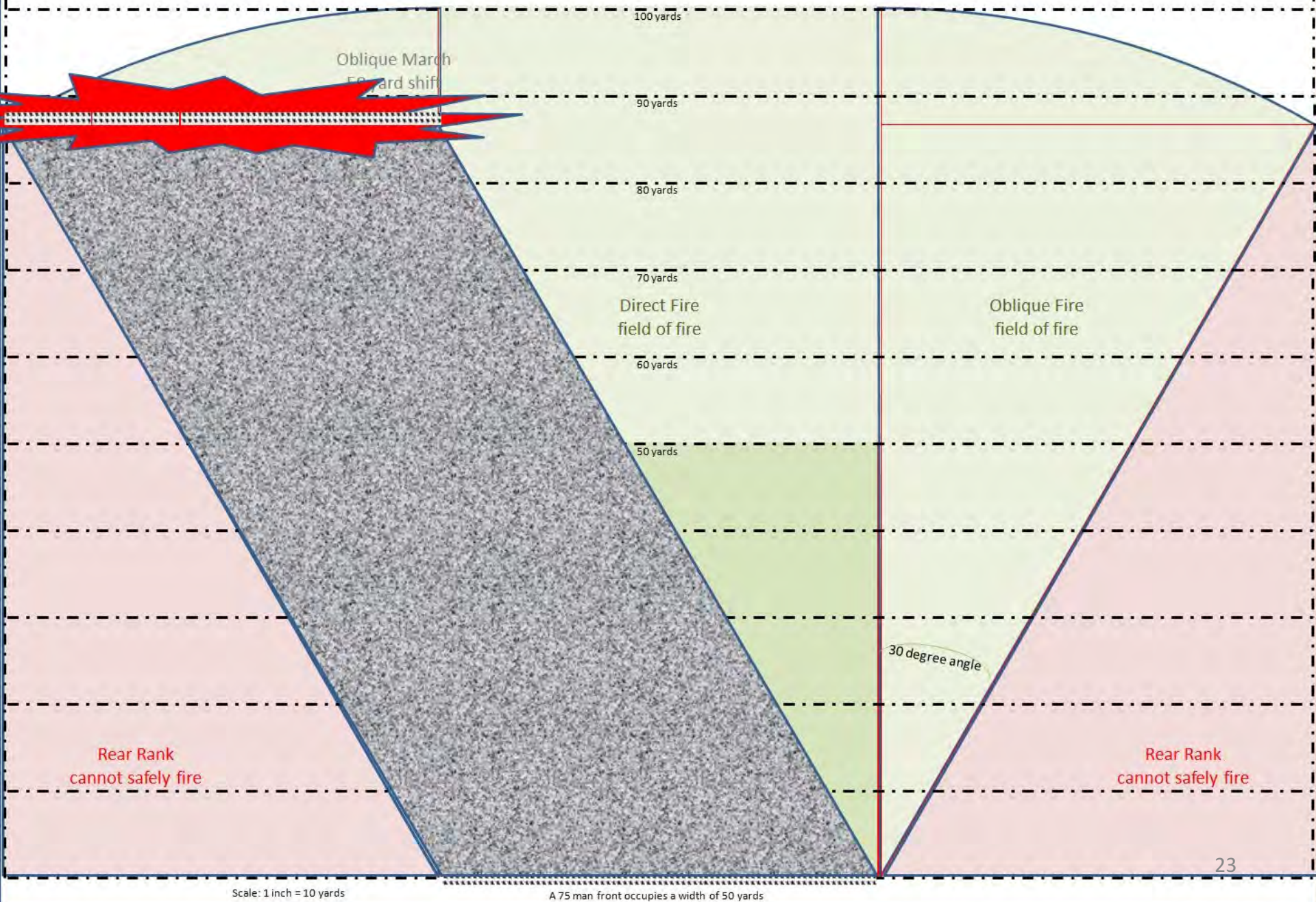
Scale: 1 inch = 10 yards

A 75 man front occupies a width of 50 yards

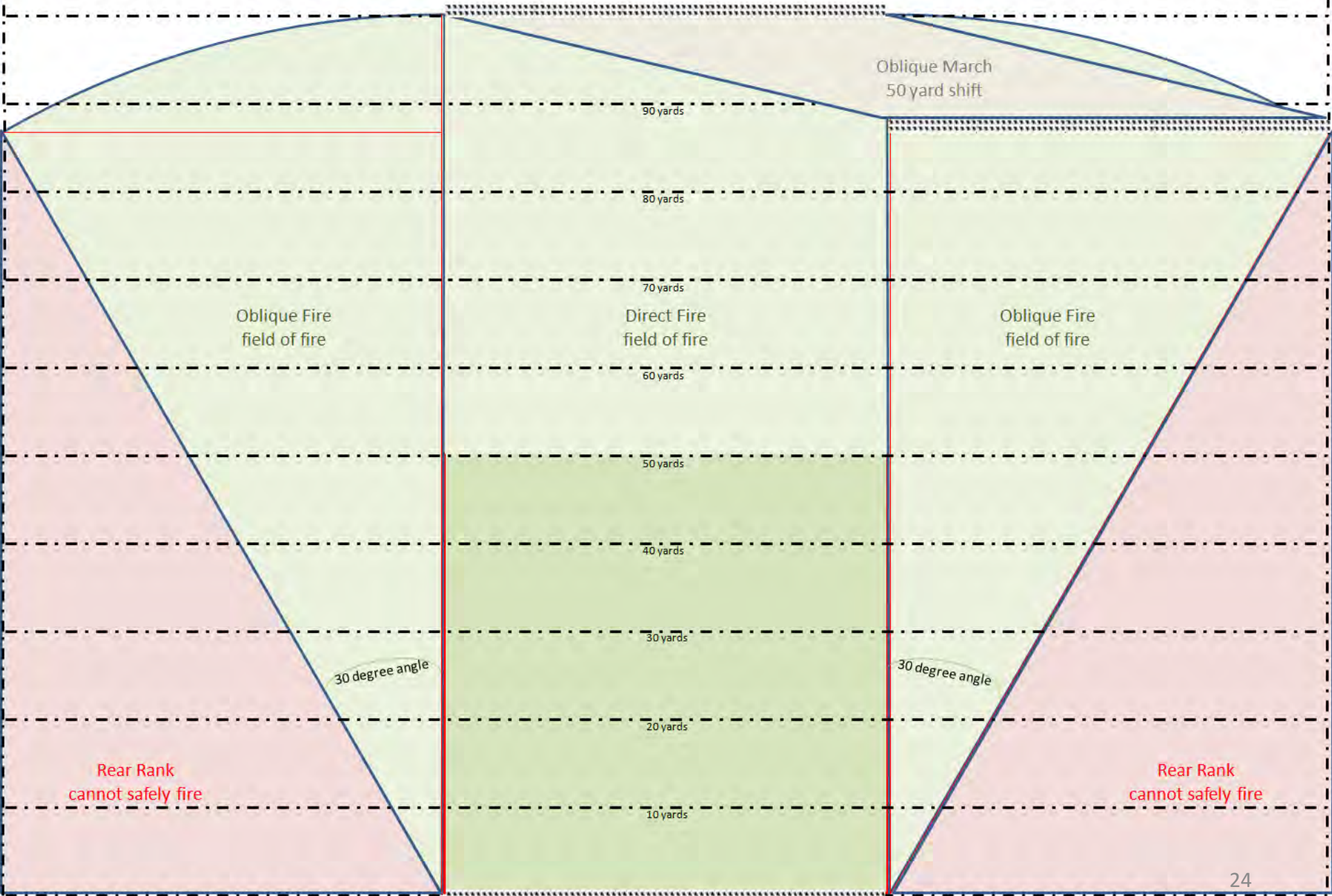
Left Oblique – the enemy can play 50 yards



Left Oblique – the enemy can play 50 yards and still be within effective range



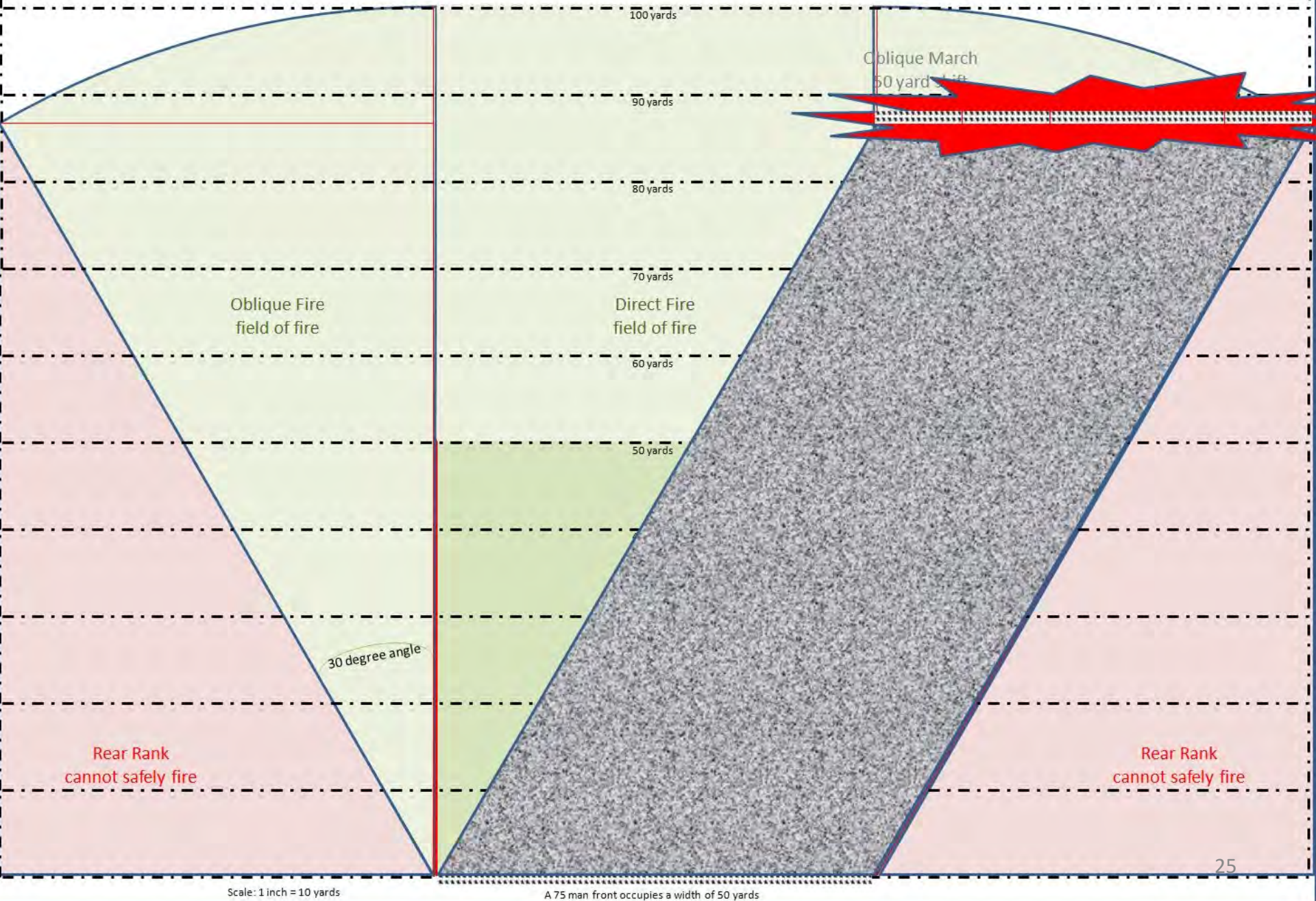
Right Oblique – the enemy can play 50 yards



Scale: 1 inch = 10 yards

A 75 man front occupies a width of 50 yards

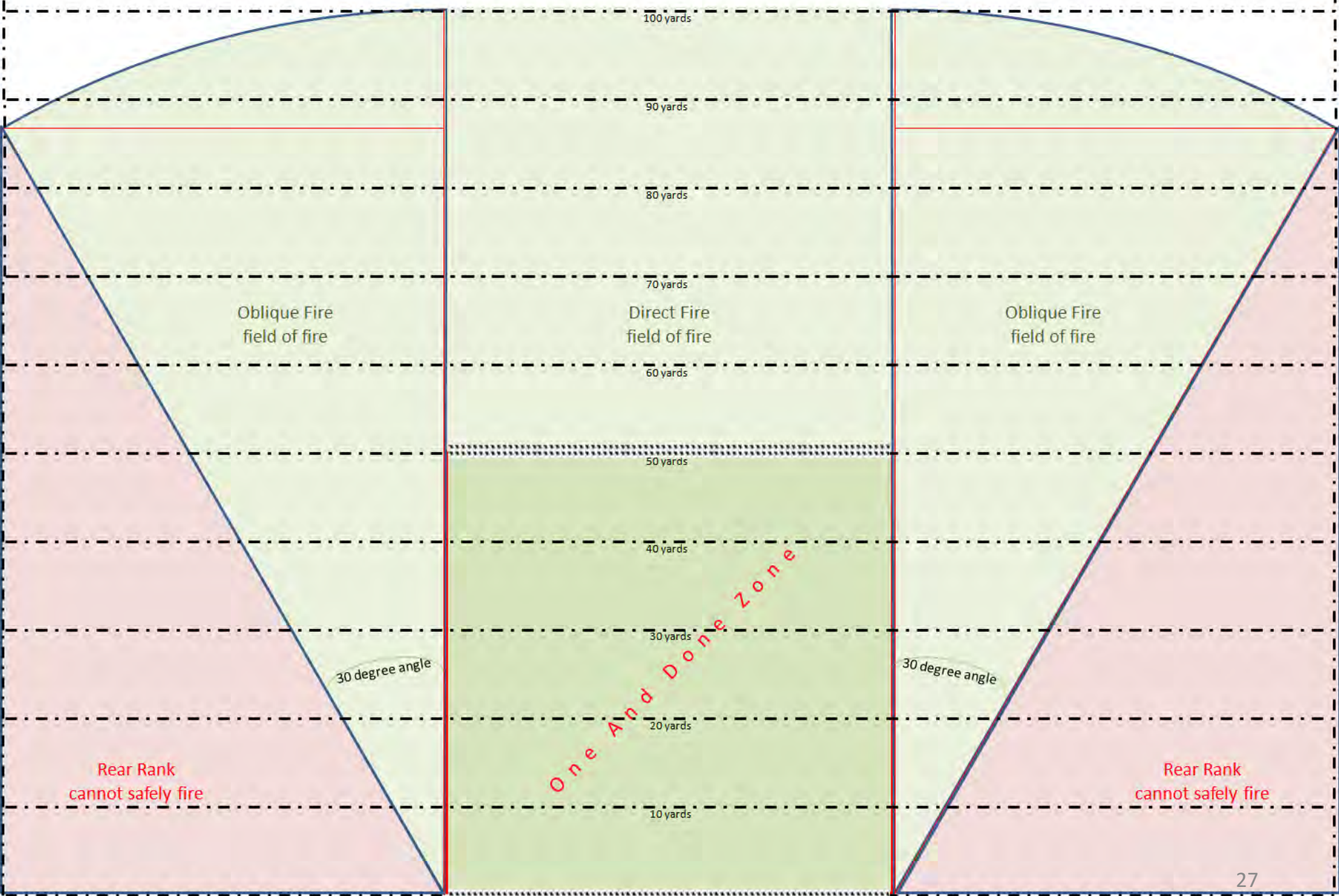
Right Oblique – the enemy can play 50 yards and still be within effective range



Illustrations

50 YARD DISTANT - ONE AND DONE

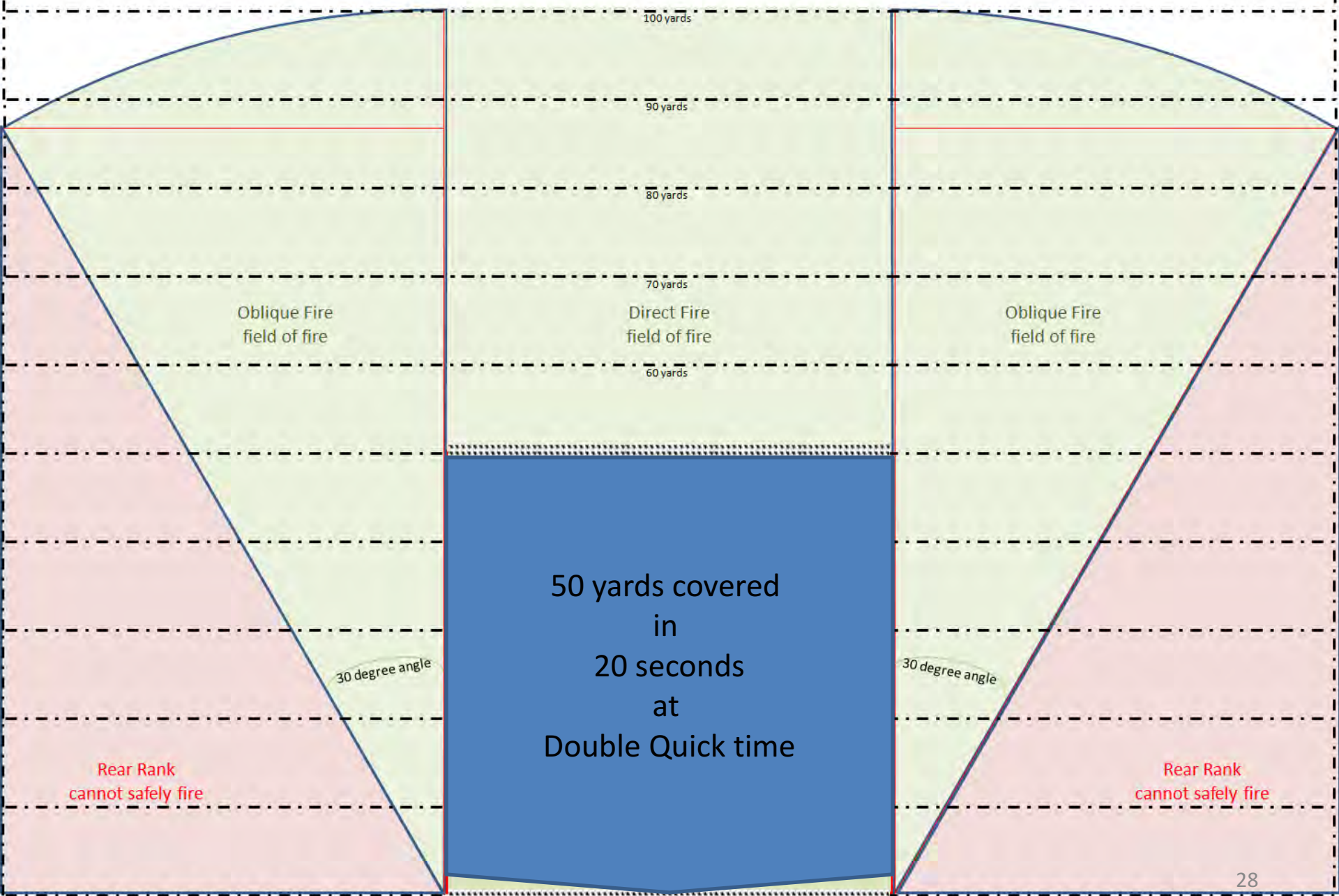
Troops advanced to within 50 yards of each other.



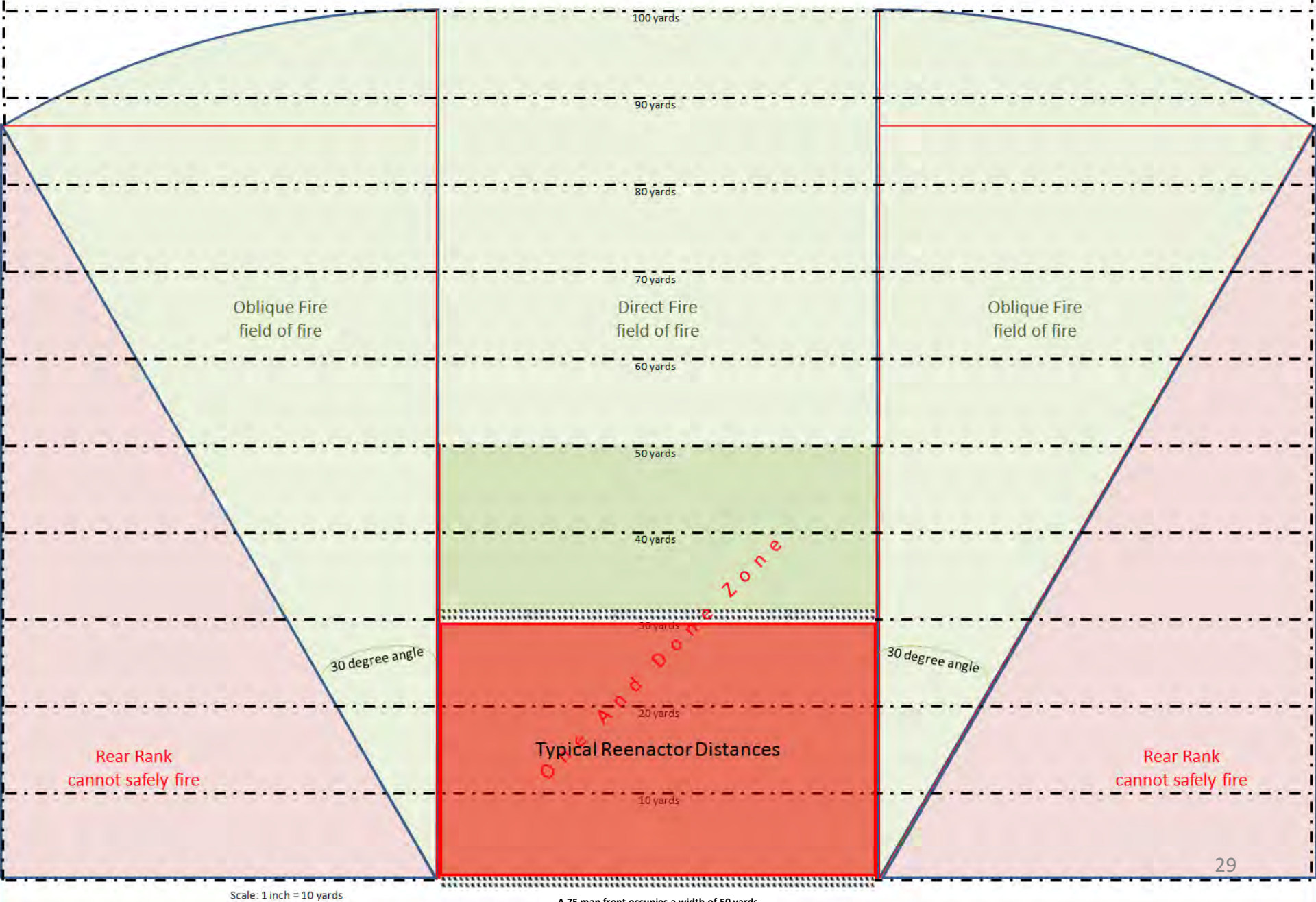
Scale: 1 inch = 10 yards

A 75 man front occupies a width of 50 yards

Troops cannot fire a second round before the enemy closes with them.

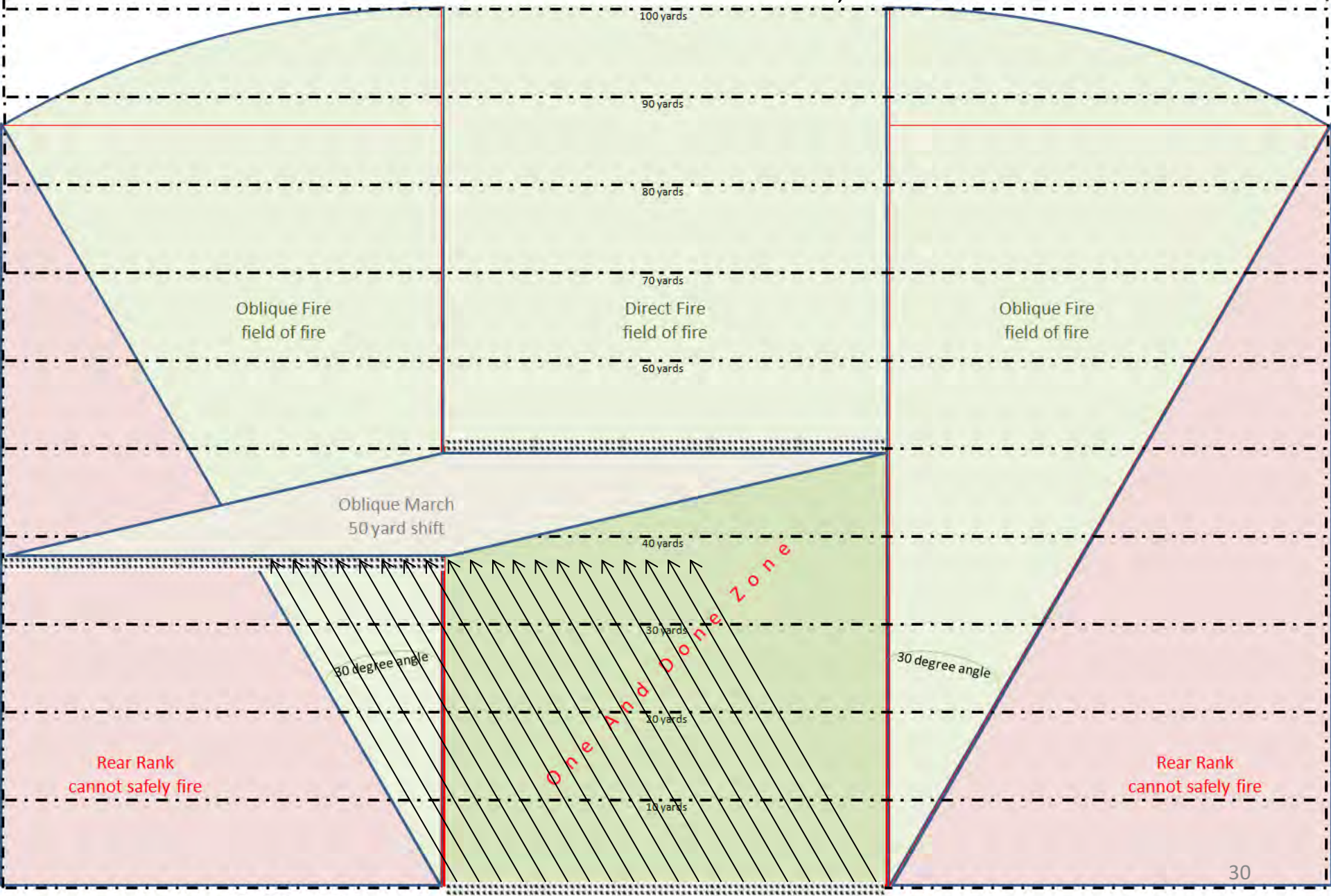


Typical reenactor distances are significantly less than 50 yards.



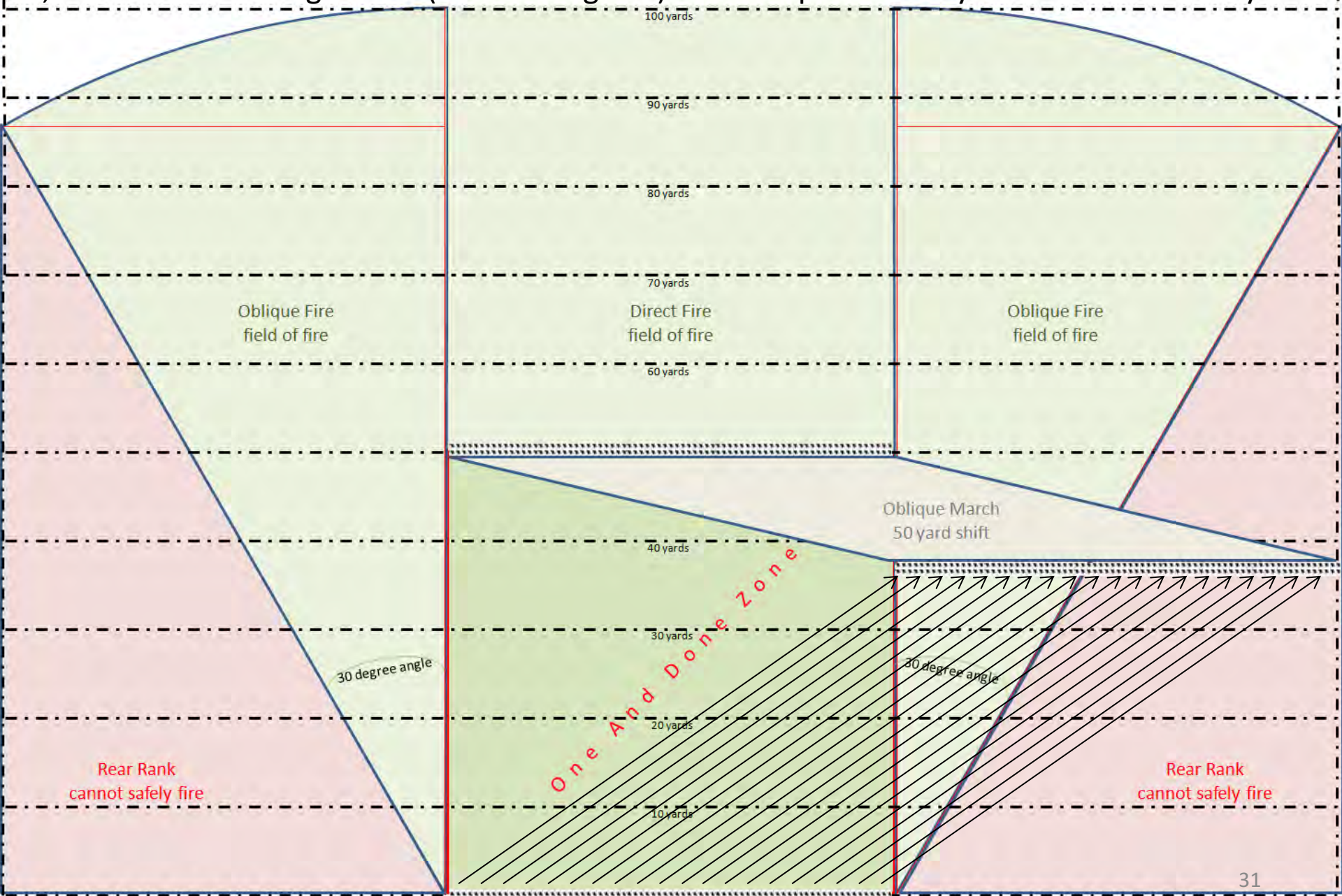
Impact of reduced distance on oblique

Either reduced effectiveness, ...



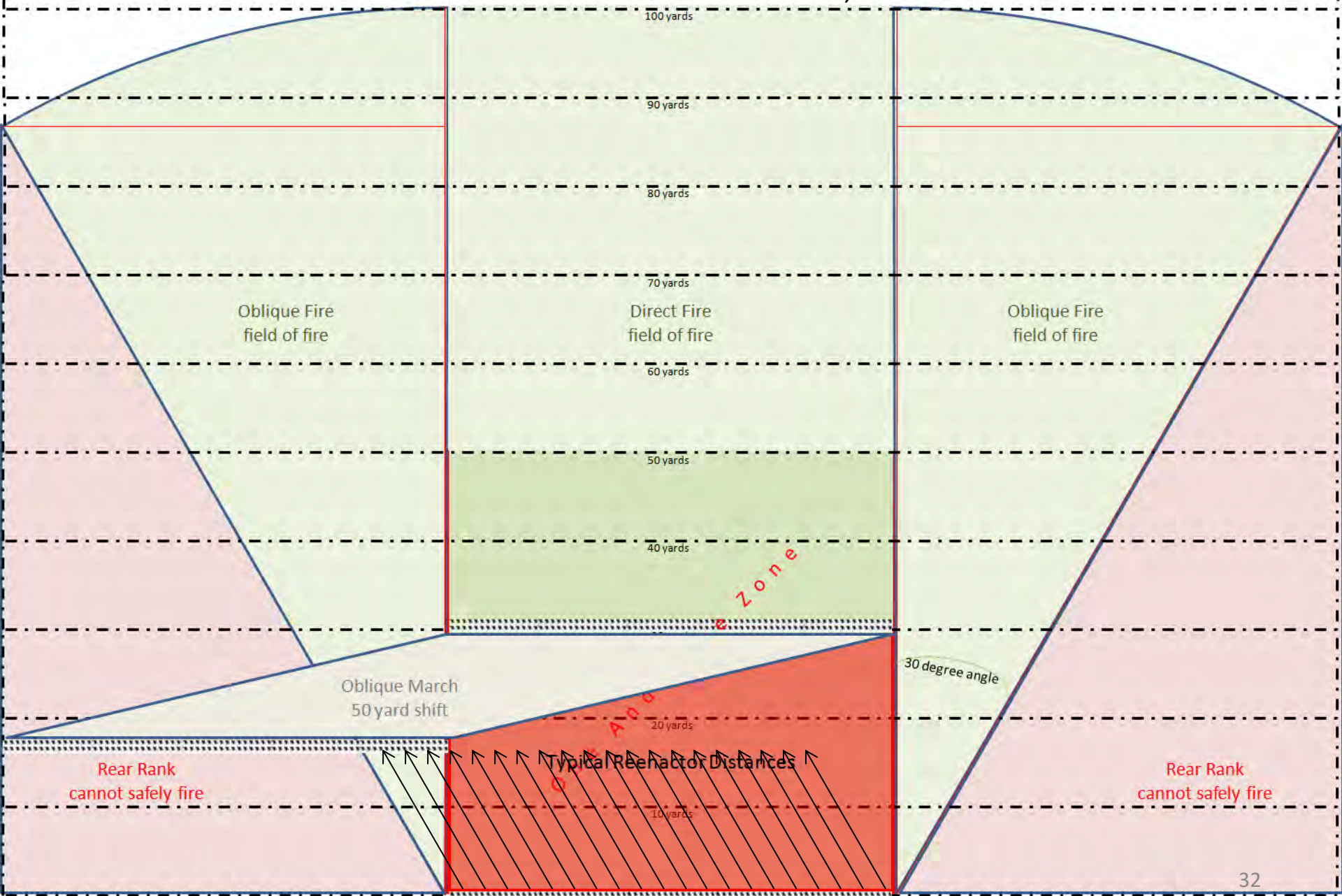
Impact of reduced distance on oblique

..., or more severe angle used (here 55 degrees) which impedes ability of rear rank to safely fire.



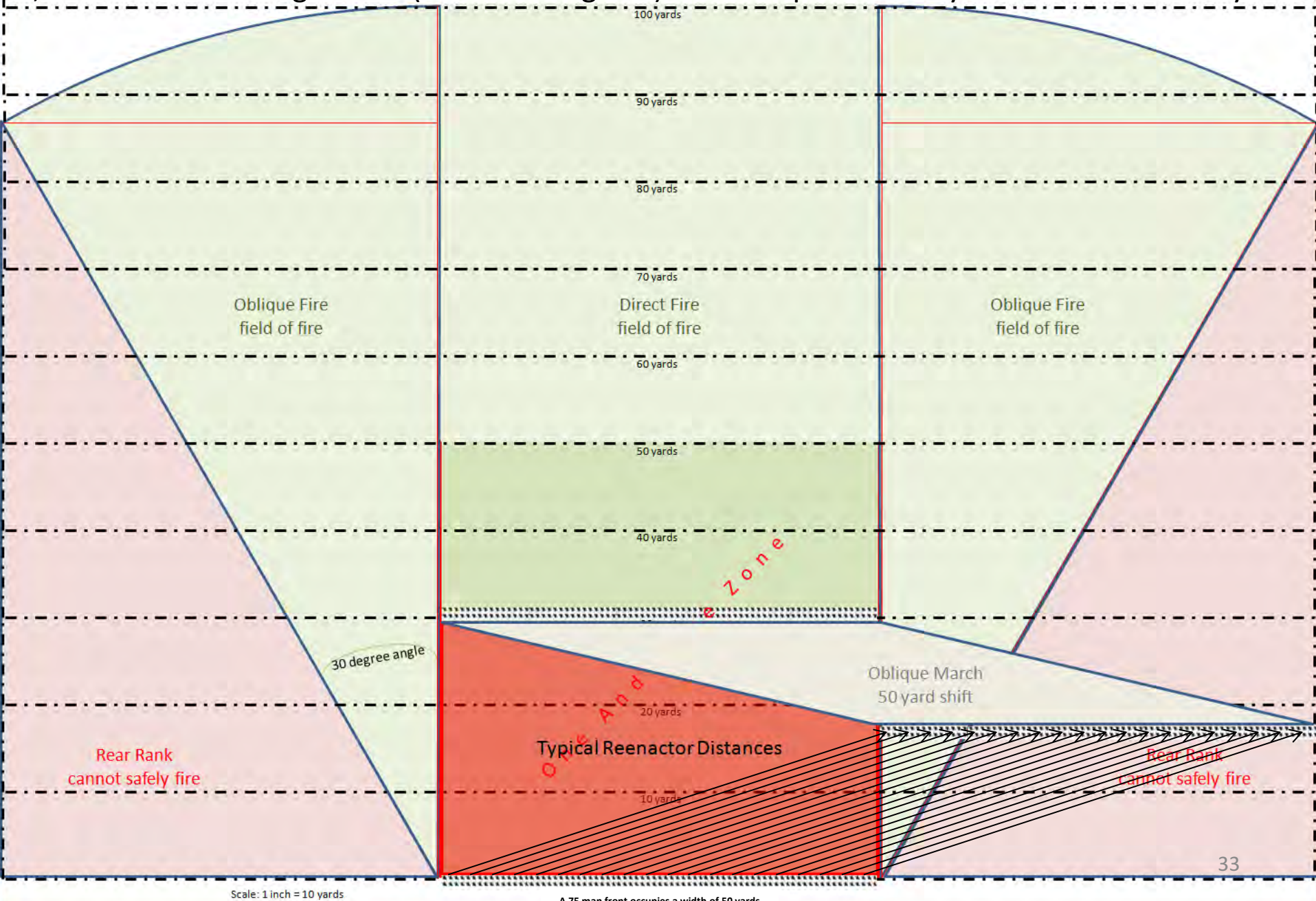
Impact of reduced distance on oblique

Either reduced effectiveness, ...



Impact of reduced distance on oblique

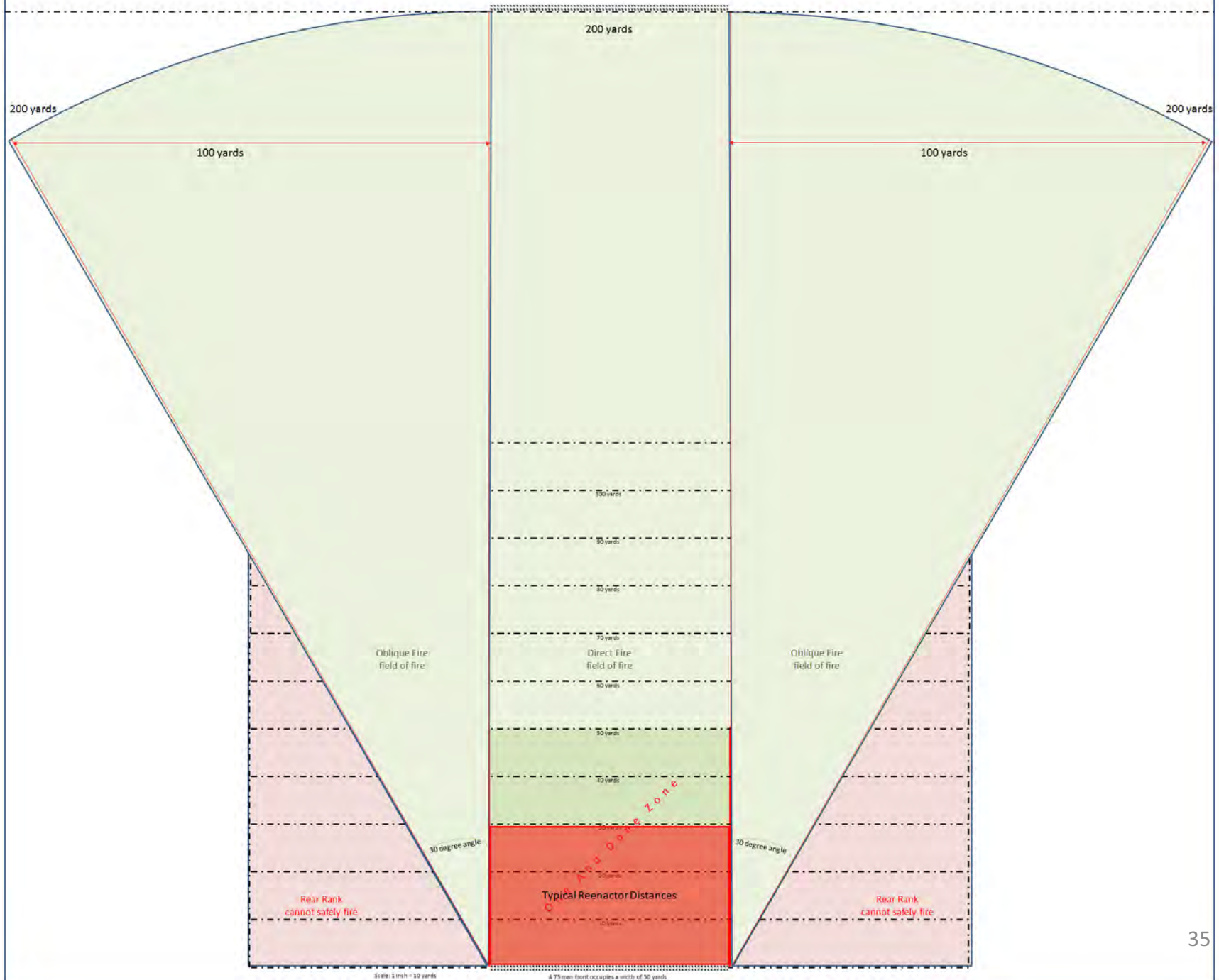
..., or more severe angle used (here 70+ degrees) which impedes ability of rear rank to safely fire.



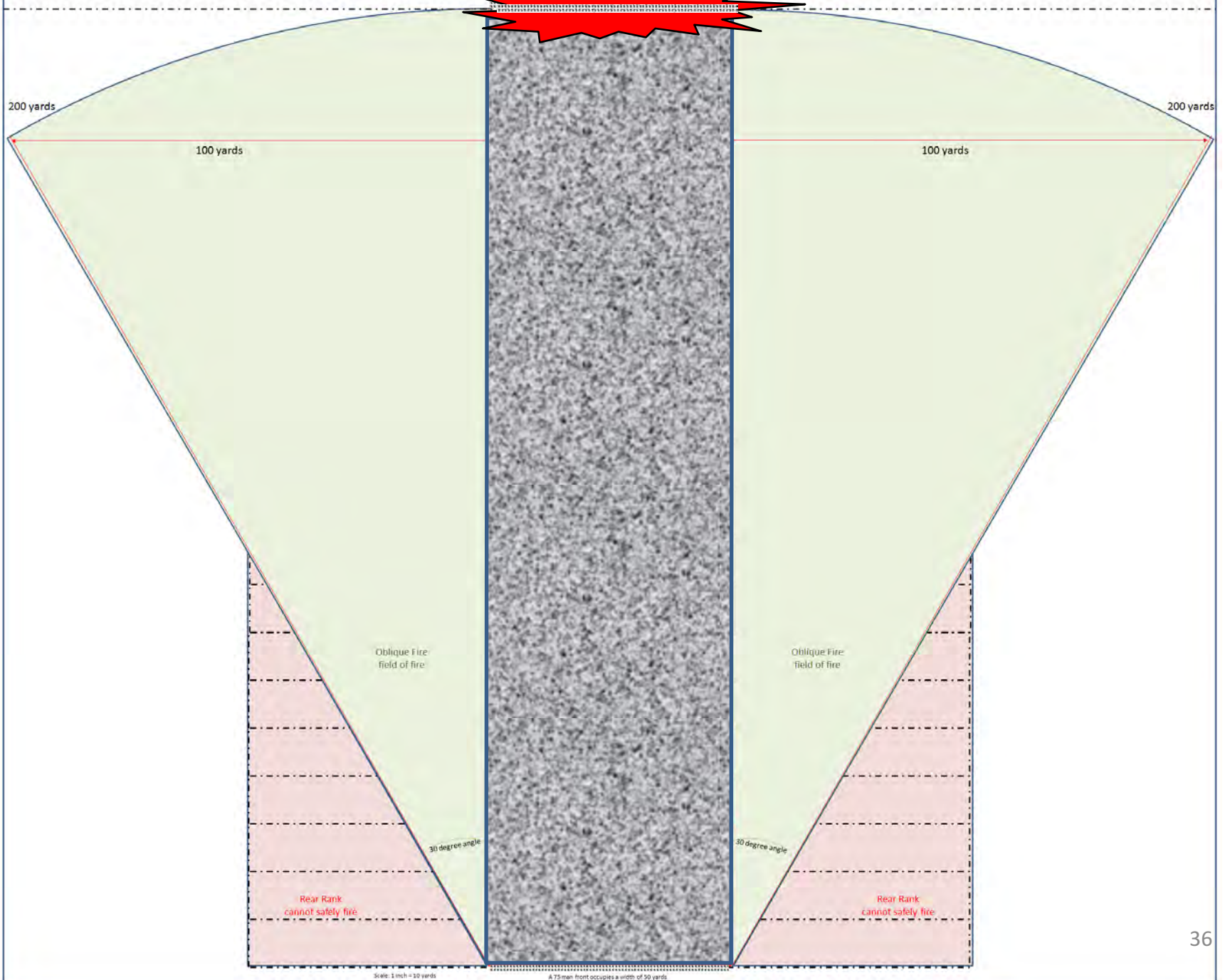
Illustrations

200 YARD DISTANT – PERIOD CORRECT

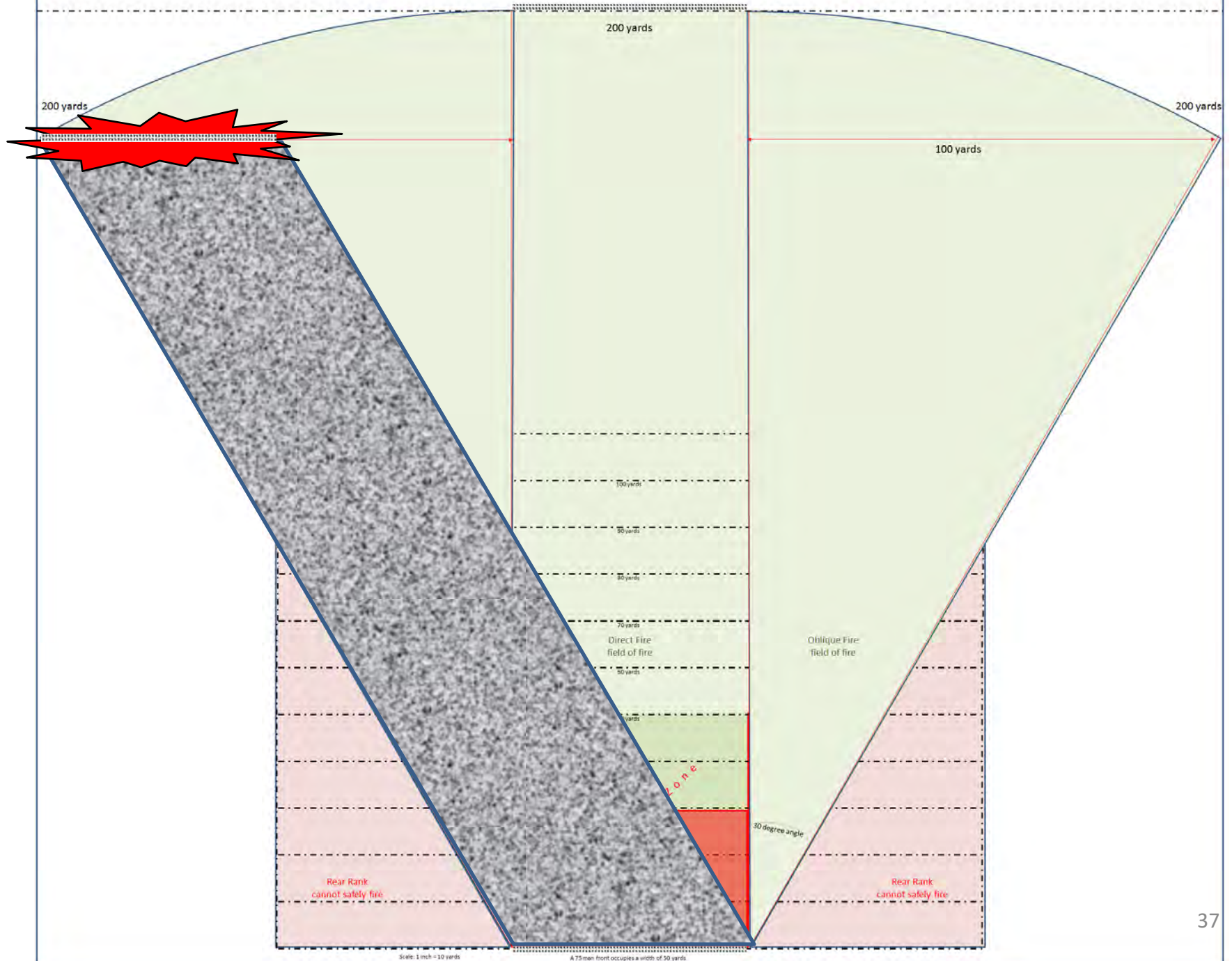
Troops advanced to within 200 yards of each other.



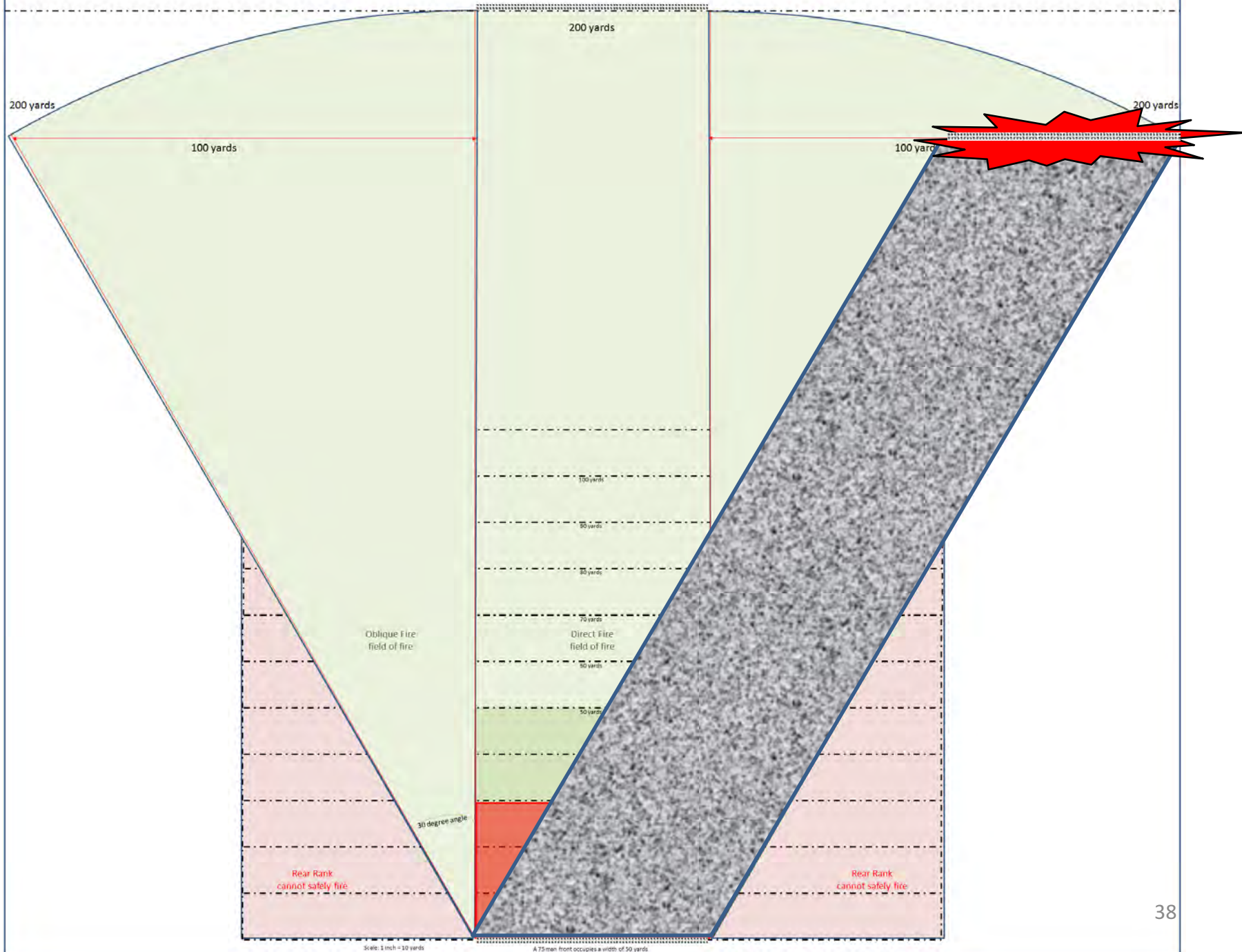
Direct Fire – within effective range at 200 yards



Left Oblique – the enemy can play 100 yards and still be within effective range



Right Oblique – the enemy can play 100 yards and still be within effective range



Summary

- Reenactor distances are a disservice to history and the memory of soldiers we portray.
- Reenactor distances are root cause of oblique instructions appearing not to work properly.
- Footwork required in Hardee & Casey do not support left oblique firing over the left shoulder.
- Left oblique firing over the right shoulder is effective at period correct distances.