

	Terrain Effects Chart (TEC)			
	Movement	MFZ	Fire/Asslt Modifier	LoS
Clear	NE	1	+1/0	None
Creek/River/Pond	Prohibited	N/A	N/A	N/A
Slope	NE	2(a)	+1(j)/+1 or -1(k)	Blocks(b)
Abatis/Fence	NE	2(a)	+1(h)/-1(l)	None
Fieldwork (Forts)	Prohibited	N/A	N/A	Blocks
Marsh	Stop(c)(g)	1	-1/Dsrptd(m)	None
Marsh/Run	Stop(c)(g)	1	-1/Dsrptd & -1(m,n)	None
Run	None(d)	1	NE/-1(n)	None
Road/RR	Bonus(e)	AOT	NE	AOT
RR Embankment	NE(i)	2(a)	+1(j)/ +1 or -1(k)	Blocks(f)
Woods	NE/Stop(c,g)	1	-1 (3 pts max)	Blocks(b)

The fire limits of a clear hex: 4 points of Small Arms or all Artillery.

The fire limitsof a non-clear hex: 3 points, both small arms and artillery.

During an assault, an entire stack may participate in combat.

A maximum of 5 small arm SPs or 6 Artillery SPs may stack in a hex.

TEC Notes

The fire limits of a clear hex: 4 points of Small Arms or all Artillery. The fire limits of a non-clear hex: 3 points, both small arms and artillery. During an assault, an entire stack may participate in combat.

a. MFZ is two hexes only if firing unit is on RR embankment or sighting down a slope and the hexes fired into are non-embankment or noncrest hexes. CSA units, only, firing through an Abatis have an MFZ of 2. ANY stack in a fence hex and firing through that fence also has an MFZ of 2.

b. LOS may be traced into but not through such hexes.

c. Infantry and Cavalry stacks moving from one non-clear hex directly into another non-clear hex must make a STRAGGLE check before it exits its current hex (3.6). If it fails the Straggle check it must take an O hit loss or remain in place and terminate its move. The O hit loss is for the Stack, not for each unit in that Stack. d. Artillery, only, must check morale as per (c) above.

e. Road bonus: +1 to Movement Allowance (MA). Disrupted units may not use the road bonus. Must spend entire move on Road or Railroad.

f. Embankments block LoS only if both units are on ground level (noncrest hexes) and are sighting through the embankment.

g. Arty may not enter Marsh hexes and must stop upon entering woods

h. Stack must be adjacent to and firing through the protected side of the fence or abatis.

i. Artillery may only enter/exit an embankment from a connected road or RR (Newbern only).

j. When firing from an elevation into a non-elevation hex, only.

k. Units assaulting vs. higher elevation, suffer a -1 penalty. Units assaulting vs. lower elevation receive a +1 bonus.

l. Abatis only. USA units assaulting CSA units through an Abatis hexside suffer -1 penalty.

m. Units assaulting from a marsh are Disrupted before the first round.

n. Assaulting units in a run suffer -1 penalty

All units have 3 MPs per Action Segment.
 Leaders and Cavalry have 3 MPs per Horse Segment.
 Arty has 1 MP in a Horse segment.

Straggle Table	
Avg. Base Morale	Straggler Die Roll (d10)
0-3	4+
4-5	5+
6-7	6+

Morale Modifiers Schedule

Amend the Average Modified Morale of a stack according to the following schedule. All ammendments are cumulative.

Negative Modifiers:

Out of Command (1). This also applies to Routed units (they are always out of command). Reduce the morale of the stack by 1.

Flanked (1). A stack fired upon or assaulted through a flank hexside has its modified morale reduced by one for that combat only.

Isolated (2). See 5.7

Positive Modifiers:

Stacked with Leader (1). Small Arms stack can receive the benefits of 1 leader only (brigade or division, as appropriate). Artillery receives the benefits of any leader, regardless of affiliation.

Execuitng Charge or Assault (1). Increase the morale of a Charging/Assaulting stack by 1. This applies throughout the assault, even if the relevant units have become disrupted.

Average Modified Morale: The sum of all modified morales (Base Morale – O hits) of each unit in a stack divided by the number of units in that stack. Round all fractions down.

Straggle Table Notes

A roll equal to or greater than the number specified results in the stack suffering an O hit. A stack cannot suffer more than 1 O hit per check.

A Leader moving with the stack subtracts one from the die roll.

Charging/Assaulting units do not check for stragglers.

Subtract 1 from die when exiting/entering an EZOC.

Units using Road Movement subtract 1 from die roll.

Average Base Morale: The sum of the base morales of each unit in a stack divided by the number of units in that stack. Round all fractions DOWN.

Combat Results Table (CRT)

		Combat Result				
		3(2)	2(1)	1(D)	D	NE
Fire Line	0	--	--	0	1	2-9
	1	--	--	0	1-2	3-9
	2	--	--	0	1-3	4-9
	3-4	--	--	0-1	2-4	5-9
	5-7	--	0	1-2	3-4	5-9
	8-11	--	0	1-3	4-5	6-9
	12-15	--	0-1	2-3	4-5	6-9
	16-20	0	1-2	3-4	5-6	7-9
	21-26	0	1-2	3-5	6-7	8-9
	27-35	0-1	2-4	5-6	7-8	9
	36+	0-1	2-5	6-7	8-9	-

Range Factor Table

		Range Factor			
		Inf	Cav	Irg	Art
Range	Assault	3	3	3	1
	1 hex	2	1	2	2(+1)
	2 hexes	1	.5	.5	1.5
	3 hexes	.5	--	--	1
	4-8 hexes*	--	--	--	.5

Cross-Reference the firing range to the unit type firing (Inf/Cav/Art). That value is the multiplier to a unit's fire factor.

***Artillery must be sighting down a slope to have a range of 7 or 8 and the target must be on a lower elevation.**

$$F = S \times R$$

F = Fire factor

S = Strength points firing

R = Range factor

Artillery vs. Small Arms unit at range of 2 hexes or more use parenthesized result (x).

Combat Result Summary

NE: The fire has had no effect.

D: the stack is **DISRUPTED**. A stack may attempt to take an Organization (O) Hit in lieu of the Disruption by checking its modified morale. If it passes this check it takes the O Hit and remains in good order. If it fails the check it remains Disrupted. Note: The only time a unit may attempt to take an O hit instead of the Disruption is when it receives a "D" combat result. If it is Disrupted for any other reason, it must take that Disruption. A Disrupted or Routed stack that receives a D combat result treats that result as 1 O hit.

1: The stack suffers 1 Organization Hit. Check for Disorganization. If the roll is less than, or is equal to, its average modified morale, then there is no additional effect. If the roll exceeds its morale it is Disrupted or Routed, depending upon its previous state of disorganization.

2: The stack suffers 2 O Hits. As (1) above.

3: The stack suffers 3 O Hits. As (1) above.

NOTE: Flip a unit at full effectiveness to its reduced effectiveness side when it suffers its third O hit. Remove a unit at reduced effectiveness when it suffers its third O hit (it is destroyed). See 3.3.5 about apportioning losses in a stack.

Fire Line Modifiers Schedule, Fire Combat Only

Modify the Fire Line according to the schedule below. All modifications are cumulative. Make all positive adjustment before negative ones.

Terrain. Make these modifications for the terrain in the target's hex.

Woods/Marsh (-1) Target unit in a woods or marsh hex, DECREASE the fire line by 1.

Clear or target using Road (+1). Target in a Clear hex or using Road, INCREASE the fire line by 1. Modifier does not apply when artillery firing range is 2 hexes or more.

Low Terrain (+1). Target on a lower elevation than the firing unit, INCREASE the fire line by one.

Unit behind Abatis or Stone Wall (-1). Target protected by Abatis or Stone Wall, DECREASE the fire line by 1.

Target Status. Make these modifications for the status of the target.

Target Flanked (+1). Target fired at through a flank hexside, INCREASE the fire line by 1.

Target Advance/Pre-Assault (+1). Target executing an Advance or Assault, INCREASE the fire line by 1.

Target charge (+1). Target is Charging, INCREASE the fire line by 1. This is in addition to any modifiers for advance or pre-assault fire.

Small-Arms vs. Artillery (-1). Small arms unit vs. artillery, DECREASE the fire line by 1.

Target Density (+1). Target contains 5 fire factor points, INCREASE fire line by 1.

Firing Unit Status. Make these modifications for the status of the firing stack.

Firing Unit Disrupted (-3). Firing stack Disrupted, DECREASE fire line by 3.

Advance Fire Marker (-2). Firing stack has advance fire marker, DECREASE fire line by 2.

Firing unit behind an Abatis, Fence or Stone Wall (+1). Unit stacked directly behind an abatis, wall or fence and fire is directed through the hexside, INCREASE fire line by 1.

Artillery vs. Small Arms at 1 hex range (+1). Artillery firing into an adjacent hex against a small arms stack, INCREASE fire line by 1.

Artillery No LoS fire (-1). Artillery firing down a slope and which does not have a clear LoS to its target.

Fire Line Modifiers Schedule, Assault Combat Only

Modify the Fire Line according to the schedule below. All modifications are cumulative. Make all positive adjustment before negative ones.

Terrain. Make these modifications for the terrain in the target's hex.

vs. Hi Elevation (-1). Defender on a higher elevation than the assaulting units, DECREASE the fire line by 1.

Stream (-1). Attacker on a stream hex, DECREASE, fire line by 1.

vs. Lo Elevation (+1). Assaulting unit on higher elevation than defender, INCREASE fire line by 1.

Attacker in Marsh (Dsrptd). Assaulter Disrupted before the first round if occupying Marsh hex.

Stone Wall, Abatis(-1) Defender behind a stone wall or Abatis, Attacker DECREASES the fire line by 1.

Target Status. Make these modifications for the status of the target.

Target Flanked (+1). Target flanked by assault, INCREASE fire line by 1.

Density (+1). Target hex contains 5 SPs INCREASES the fire line by 1.

Firing Unit Status. Make these modifications for the status of the firing stack.

Disrupted (-3). Assaulting stack Disrupted (attacker or defender), DECREASE the fire line by 3.

Leader (+1). Stack includes leader, INCREASE fire line by 1.

Charge (+1). Assaulting unit executing Charge, INCREASE the fire line by 1.