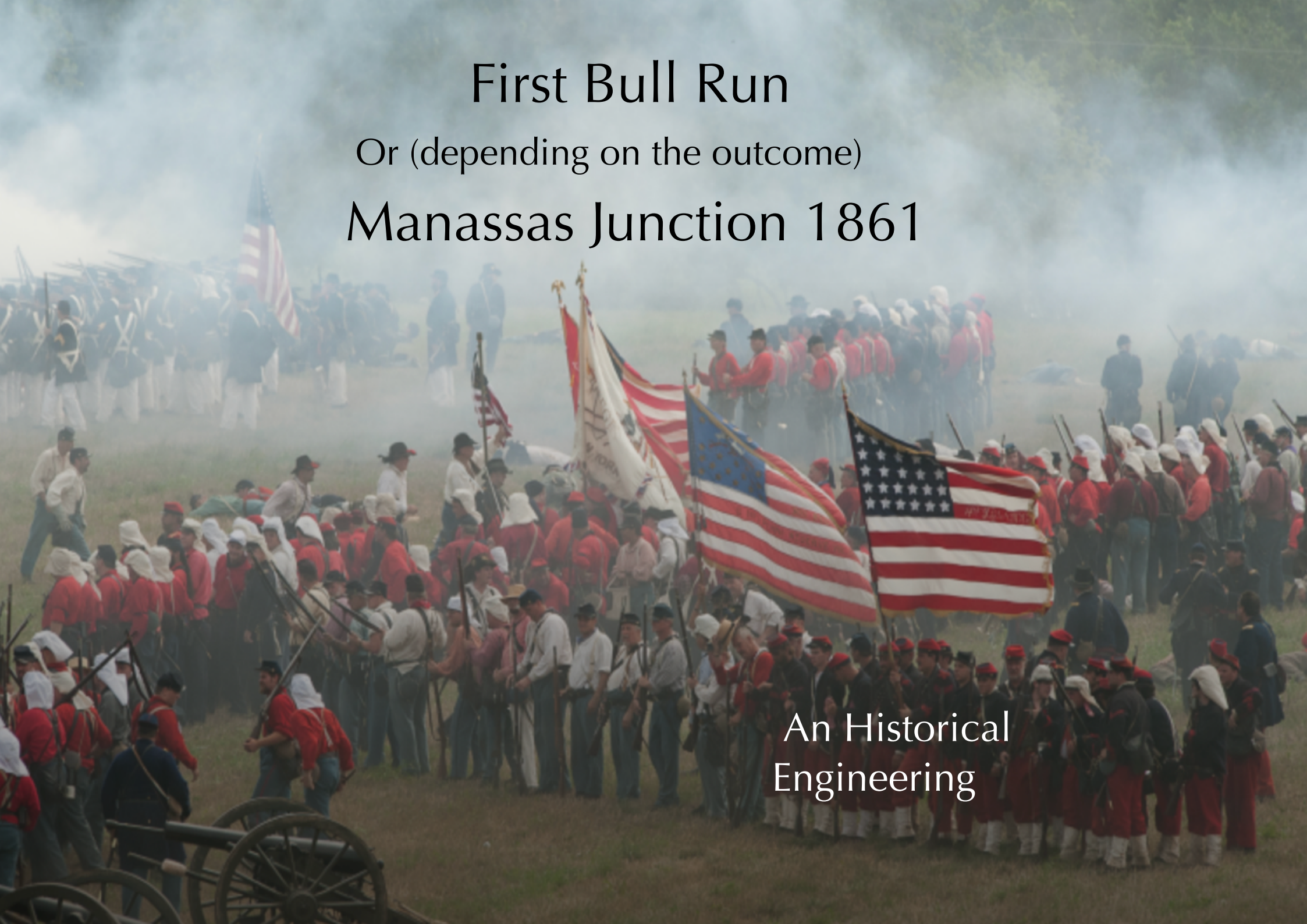


# First Bull Run

Or (depending on the outcome)

## Manassas Junction 1861



An Historical  
Engineering



An aerial illustration of the Battle of Manassas, showing large formations of soldiers in blue and grey uniforms, smoke from gunfire, and a winding river in the background. A compass rose is visible in the upper left corner.

Brigadier General Pierre Gustav Toutant-Beauregard (28-May-1818 to 20-Feb-1893).



FIGURE 1.  
Brigadier-General  
P.G.T. Beauregard

*“Beauregard was caught by surprise, but he moved swiftly, still bent on launching his Napoleonic attack, He issued a paper shower of orders. Mounted messengers spurred out of Manassas for the line where they were either misunderstood or ignored.”* ●



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Historical Engineering, Mill House,  
Withindale, Withindale Lane, Long Melford,  
Suffolk, CO10 9HS, United Kingdom.  
Voice +447525-100774  
[www.historicalengineering.com](http://www.historicalengineering.com)



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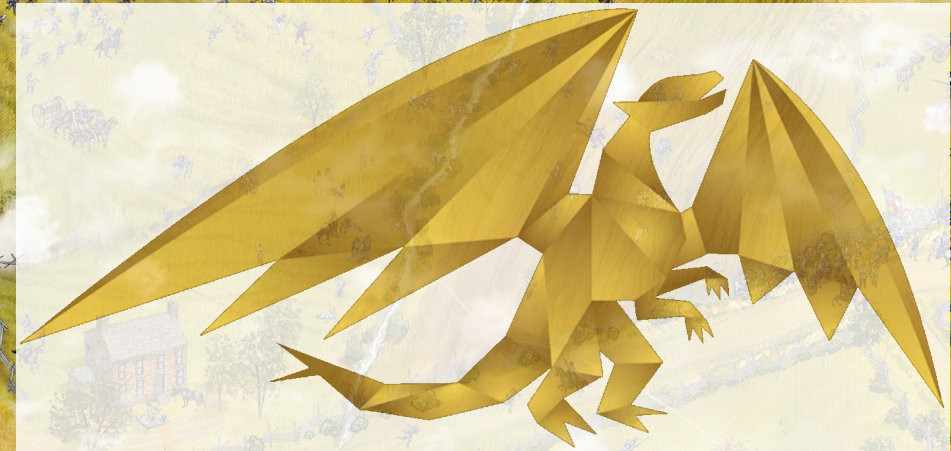
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*Version 177 21 Feb 2024.*

Brian G Kammerer

## TERMS AND CONDITIONS

- The customer agrees not to conduct player communications outside of the game upon pain of removal from the game without any refund falling due. But at least we do not apply the whip - a legal, and applied, military punishment of the US army in 1861. Indeed two men of the Federal army were whipped on the 20th July 1861 at Bull Run for having deserted their post.
- The customer grants permission, by virtue of playing the game at all, that any selfie provided to Historical Engineering, for the purpose of creating a composite image, or images, out of his own image and any image of a historical character that is any one of his avatars in the game, then this composite may be used in game as Historical Engineering favours as well as for marketing at Historical Engineering's discretion.
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# HISTORICAL ENGINEERING



**FIGURE 2.**  
**Brigadier-General**  
**Irvin McDowell**

Brigadier General Irvin McDowell (15-Oct-1818 to 04-May-1885) commander of the Army of Northeastern Virginia

McDowell favoured a side parting (which you can't see here because of his forage cap).

Sashes were often prescribed for dress uniform but were sometimes worn in the field.

Staff officers frequently wore cavalry style boots as in this case though (if you will excuse my inaccuracy), usually with the toe in the stirrup.

The deep hanging part of the sash shown here was more commonly one or two tassels on a thin cord if that..



## INTRODUCTION

It is 05:40 hundred hours, (sixty one minutes after dawn), Sunday 21st July 1861. The battle of (First) Bull Run (or Manassas) •• has already begun. Brigadier General Daniel Tyler sounded reveille for his division two hundred and twenty minutes earlier at 02:00 hundred hours. Thousands of men have been on the move under the diffusing moonlight since 03:00 hours. Sometime around 04:30 hundred hours the first small arms fire happened. In the pre-dawn half-light two Confederate videttes fired at some of Tyler's skirmishers before spurring their horses away. The game starts seventy minutes later and ends fifteen hours after that at 20:40 hundred hours (ten minutes after sunset).

The action took place in the North American state of Virginia. In the country between Chestnut Lick in the north west, and the Occoquan River and Fairfax railway station in the south east. In Prince William County. The battlefield map represents an area of circa 160 square miles (414 square kilometres). Superimposed on it is a hexagonal grid. Each hexagon represents an area circa one hundred and ten yards (one hundred metres diameter) across.

Each picture of an infantryman, artilleryman, flag bearer, cavalryman or horse represents one man or one horse. There are also pictures for individual smoothbore or rifled artillery pieces.

A player is allowed to take five minutes to play a turn. This turn represents five minutes of battle time. It is a remorseless pace. If you are close to the enemy you won't have much time to think things through. Regimental movement *en masse* will often be necessary simply because you will not have time to move companies individually. At the completion of a turn play halts for the server to calculate new

### COMPANIES I

Infantry are grouped into companies of between 76 and 84 men. This assumes that 20% of the paper strength of an infantry company (nominally 101 men in the U.S. Army) were absent on the day of the battle. Union cavalry are grouped into companies of 72 men each. The figure of 72 reflects the notion that 18% of the paper strength of the US cavalry company (88 men) were absent on the day of the battle. Confederate Cavalry are grouped into companies of 64 men. The figure of 64 assumes that 15% of the paper strength of a cavalry company (there was no fixed paper strength for Confederate cavalry in July 1861



The game is fought to completion in fifteen episodes with one episode per week (charged in blocks of four, four, four and three) each episode represents one hour of the battle (twelve five minute turns) and so takes (allowing for two hours server processing time) three hours (per week) to play. Server processing time will vary (from circa six to thirteen minutes depending on how much is going on). Each episode starts at 06:00 hours Pacific Standard (Los Angeles) Time, 14:00 hours Greenwich Mean (London) Time and 24:00 hours midnight Kilo (Brisbane) Time on a Saturday.

Orders and despatches use the *US Declaration* font. Map labels and terrain features use Gauge font. Order menus & unit names Munson font. This rule book Optima font. ●●● This book is available in game as are key tables distilling the information in the rule book into a handier form. There are videos ([www.historicalengineering.com/drillsessions.php](http://www.historicalengineering.com/drillsessions.php)) considering how to play (especially how to move, but also how to fight as well as other matters).

## DIVISIONS

Regiments are grouped mostly into brigades. Usually commanded by a Brigadier-General with two to four regiments per brigade. Brigades are not manoeuvred as a single unit. In order to manoeuvre a brigade (or higher unit such as a Federal division) multiple players have to collaborate or failing that at least follow orders.

## COMPANIES II

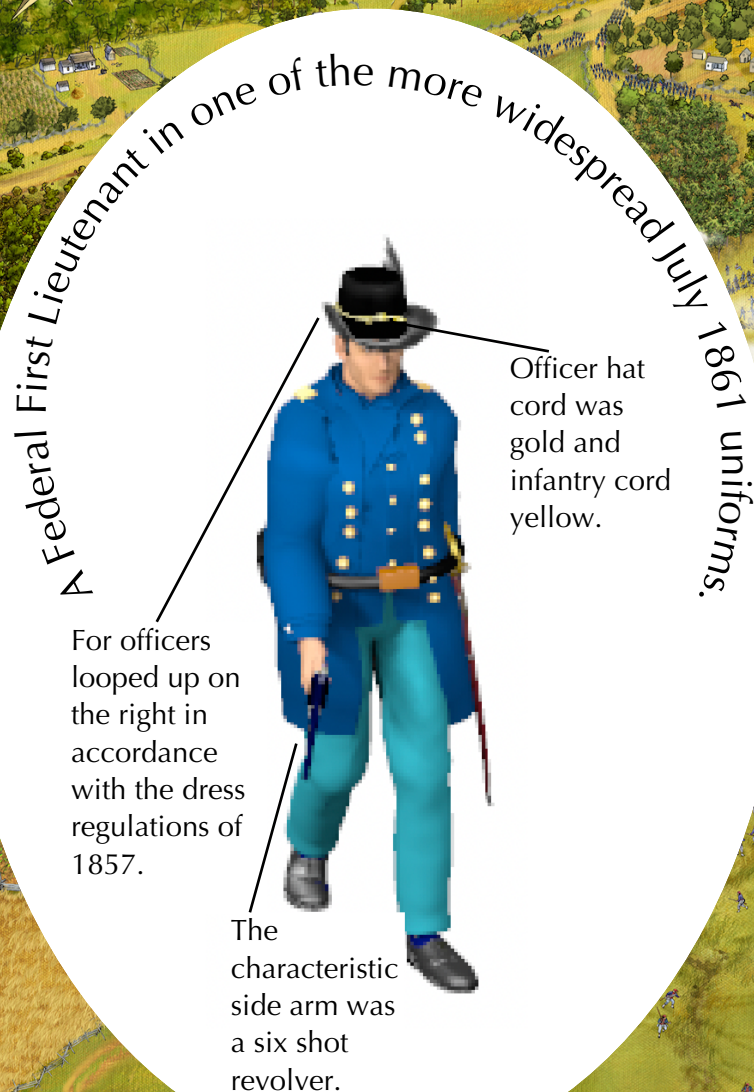
but 75 men was average), were sick or absent on the Sunday of the battle. On 8 July 1861 the actual combined infantry and cavalry figure in the Confederate Army of the Potomac (Beauregard's) was 18% under strength. Companies are the basic indivisible manoeuvring unit of the game. Although players control the number of sections (each company has four) deployed to the skirmish line, and issue orders to individual flag parties and officers most orders are issued to the companies or, (perhaps) even more often, to regiments *en masse*.

## REGIMENTS

Companies are grouped into regiments. It is possible to issue a manoeuvring (movement and deployment) order to whole regiments as a single unit. With only five minutes to play each turn there won't always be time to issue orders to individual companies. A key reason why companies were drilled to manoeuvre as regiments, in life was, as it is in the game, so that delegation to line officers would allow commanders (usually a Colonel) to focus on objectives.



**FIGURE 3.**  
**A Federal First Lieutenant**



## FOG OF WAR

A character of generalship, namely, insight despite ignorance, for example, because of the smoke and dust which obscured vision at First Bull Run even of what was close to hand, is at the heart of this game. As is the emphasis in my design on dealing with other people. In these ways the game is quite unlike, and more real than, other computer games. Thirdly, the design is attentive to detail. Historical Engineering aims to bring the subject of its models to life, in part, by verisimilitude.

## REALISM

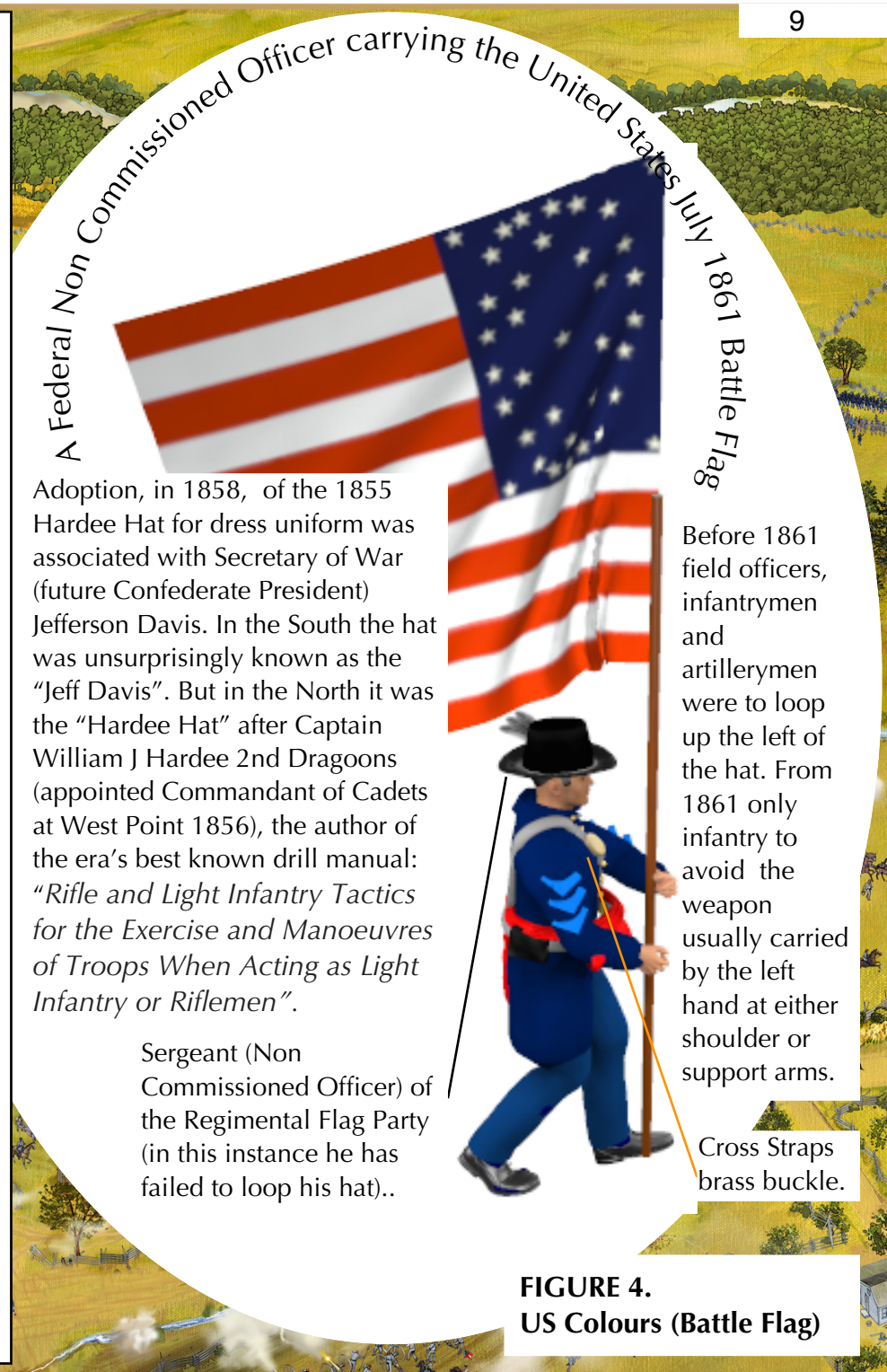
- The Brigade Commanders (Chain-of-Command)

At *First Bull Run* the Union Army of North Eastern Virginia attempted to outflank the Confederate Army of the Potomac reinforced by elements of the Confederate Army of the Shenandoah so combined into a new, on the day as yet unnamed, army. This Union outflanking manoeuvre was of great promise but was frustrated. It was stymied by the fact that it took longer than planned. In a sense this was because it followed an unintended route, a decision for which there was a logic, probably false, which in turn was brought on by the route not having been adequately scouted. Despite this the battle could easily have been a Union victory. In this sense the delay was not of itself decisive. More important was the initiative shown by certain Confederate brigade commanders. Perhaps most spectacularly by, as Colonel Cocke correctly referring to him by his pre-battle rank called him, "Major" Evans. Nathan Evans was referred to by his subordinates as "General" (he was promoted such circa November 1861). Evans referred to himself, in after action reports, as Colonel (he was brevet promoted such circa 25-Jul-61



confirmed circa August 1861) and so this was not necessarily hubris. Regardless of how he was hailed, Evans showed the initiative necessary to stall the Union threat. If Evans were to be criticised it would be for not following sooner his instinct to abandon the position he had been deployed, before the start of the battle, to defend. He was not alone among brigade commanders in seizing the initiative. Bee, Bartow and Jackson were also crucial, by acting decisively and beyond their orders, to the Confederate victory. Bee, for example, was ordered toward the Stone Bridge but took it upon himself, while in the latter stages of being en rout there, to move instead toward the sound of guns (to support Evans) arriving just in time to prevent the Confederate position being overwhelmed. Hampton, say and by contrast, albeit in his defence having only just arrived by a circuitous rout from Richmond, moved to support Evans by virtue of orders to do so from Beauregard. But Hampton too had already displayed some initiative by ordering his cavalry and guns to follow him independently by road from Richmond so that he could at least get his infantry to Manassas Junction faster by train and in time (which he did arriving about 02:30 hundred hours) for the battle.

Less locally, and earlier, General Johnston also showed initiative, in the nick of time (though it would have been more decisive if he had set off 24 hours earlier), by bringing most of the Army of the Shenandoah to the battlefield, to reinforce the Army of the Potomac, by train. Without this movement the Union would have won - perhaps spectacularly. Strategic redeployment by train on interior lines was an action first proposed (in the North American context) in writing, to his credit, by Colonel Cocke of whom it could be said, less generously, that at the battle he showed rather a lack of





initiative. General Johnston slipped away from Harper's Ferry, fifty miles to the north west of Manassas, without the Union General Patterson (b. 1792 d. 1881)•••• who was deployed to his front realising that he had gone. Only in a game with players interacting at distance, and the breakdowns in communication this will cause, can the importance of individual initiative on the 19th century battlefield be brought alive.

- Aide de camp (Communications)

When players wish to communicate they must dispatch an aide-de-camp with written messages or move a played-for-character to talk. The flow of communication across the battlefield is constrained, as it was in reality, by the time it takes to do this and the skill with which authors state their case in writing or utterance (players can video chat when close on map). Only like this can the nature, and importance, of 19th century battlefield communications be made real.

- Fire by rank and mid 19th century tactics

Infantry officers sought to withhold fire for as long as possible in order to maximise fire effect by volleying at the shortest possible range before smoke got in the way. On the other hand, holding fire for too long might result in rout if the enemy fired first with sufficient effect especially if by doing so they blew smoke into your face occluding your ability to fire back. In this design, in which the emotions of general officers are decisive, such tactical weighing of the scales is represented.

Holding fire until the last moment was also vital in repelling bayonet charges but dangerous if one's own men bolted first. Bayonet charges rarely resulted in significant, or indeed any, casualties at First Bull Run. One side usually routed before the two came to blows. Therefore a sense of the morale of friend and foe was also characteristic of the better field commanders. For example, in the fighting for Matthews Hill most historians believe that Evans, who I was so careful to praise, threw Wheat's Tigers, the Louisiana Special battalion, that formed part of his demi-brigade at the Union Line because he thought it was wavering. This would have been timely if it had been true. And the attack did disrupt the Union attack that was preparing. But it only delayed the Union attack, failed to rout the Union Line and instead broke the Tigers. The Tiger's then routed. On this occasion Evan's misjudged Union morale. He should have held Wheat back.

- The Regiment

Infantry were drilled to act by section, platoon, company, regiment or brigade. Most fire and movement on the battlefield will have been by company or by regiment obeying orders that had been, at least ideally, drilled into the men hitherto .



**TABLE 1. What if?****WHAT IF?**

The base probability of Confederate independence is taken to be  
12.4% in 1861, 10% in 1862, 7% in 1863, 2% in 1864, 0.1% in 1865

Federals in Theatre 21st-  
July:  
Virginia 34,800 ●●●●●●●●  
D.C. : (2,000 ●●●●●●●●  
militia, 3,300 NY

..., 900 7th Mas = 6,200 garrison)  
800 41st NY, Maryland,  
Delaware, New Jersey (8,000 the  
three), Harpers Ferry (14,300)  
and Pennsylvania (15,700)]

A. Probability of Confederate (C.S.) independence following a C.S. victory, at First Bull Run, with a 25% chance of happening, twice as great as in reality - Union casualties & captured (6,200) and Confederate casualties (3,030). In this case 28,200 Union troops (of the initial 34,800) survive to fall back on the 800 of the 41st New York and 2,000 militia (inc. 200 Clay Guards) in Washington plus 3,400 New York infantry and 900 7th Massachusetts giving a garrison of 35,700 ●●●●●	x1.01% (12.6%)	28-Jul-1861 Federals 73,700 Confederates 46,200
B. Probability of C.S. independence as a consequence of a decisive Confederate military victory at First Bull Run, with a 6% chance of happening, four times as great as the real victory so with Union casualties (12,400) and Confederate casualties (4,040). In this case 22,400 Union troops survive Bull Run to fall back on Washington and make a garrison of 29,400 (with the 41st New York) too formidable a force to assault if entrenched within Washington's fortifications.	x1.02% (12.7%)	28-Jul-1861 Federals 67,400 C.S. 45,200
C. Probability of independence as a consequence of a crushing Confederate military victory at First Bull Run, with a 2% chance of happening, eight times as great as the real victory so with Union casualties & captured (24,800) and Confederate casualties (5,050). In this case 10,000 Union troops survive Bull Run to fall back on Washington and make a garrison of 17,000. A siege of Washington would have been possible or, at high risk, an assault.	x1.06% (13.2%)	28-Jul-1861 Federals 55,000 C.S. 44,200
D. Probability of Confederate independence as a consequence of a Confederate 19th century Cannae at First Bull Run, with a 0.5% chance of happening, about ten times as great as the real victory so with Union casualties (31,000) and Confederate casualties (6,060). In this case 3,000 Union troops survive Bull Run to fall back on Washington and make a garrison of 10,000 In such a case Washington could have been taken by assault. But if not a siege would probably have been instituted. Moreover, such a victory might have sucked Federal reserves into the vortex so that Washington might have been left even more exposed. By 11-Aug-61 US reinforcements would be 2,000. Confederate 1,300.	x1.10% (13.7%)	11-Aug-1861 Federals 50,000 Confederates 44,500
E. Increased probability of C.S. independence if B (above) or C (above), result in the Confederacy occupying Maryland and Delaware including Wilmington (the largest place of Union warship construction even ahead of Brooklyn), while putting Washington D.C. under seige. I take it if B happened there would have been a 10% chance of these outcomes by 11-Aug-61 and if C a 20% chance and if D a 30% chance.	C+ Cx 1.07% (14.1%)	11-Aug-1861 circa Federals 57,300 Confederates 45,500
F. Increased probability of C.S. independence as a consequence of D (above) resulting in the Confederacy occupying Maryland, Delaware, including Wilmington, Washington D.C. New Jersey and the city of Philadelphia by 11-Aug-61 at a 20% chance.	D+ Dx 1.16% (15.9%)	11-Aug-1861 Federals 44,800 C.S. 45,500
G. Probability of C.S independence if D (above) resulted, with a 10%% probability, in the Confederacy occupying, by 18-Aug-61, Maryland, Delaware, including Wilmington, Washington D.C. New Jersey, the cities of Philadelphia, New York and Brooklyn	Dx 1.43% (19.6 %)	18-Aug-1861 Federals 41,800 C.S. 45,500
H. Probability of C.S. independence if D (above) resulted in the Confederacy occupying Maryland, Delaware, including Wilmington, Washington D.C. New Jersey, the cities of Philadelphia, New York and Brooklyn, and the states of Kentucky and Missouri	Gx 1.27% (24.8 %)	25-Aug-1861 Federals 41,600 C.S. 48,500
I. If Maj-Gen. Polk had, on 03-Sep-61, forbidden Brig-Gen. Pillow from enering Kentucky leading, at a 10% (the state was Unionist albeit 19.5% enslaved) chance, to Kentucky remaining neutral for twelve months longer until 04-Sep-1862. The impact is halved as Kentucky was moving towards intervention anyway so that Confederate restraint might not have made a difference.	x1.10% (13.56%)	
J. Probability if Davis had, in April 1861, purchased 400,000 bales of cotton for warehousing in England and gradual sale.	x1.02%(12.7%)	
K. If, in combination with G, Davis had, in Apr. 1861, purchased 400,000 bales of cotton for warehousing in England and gradual sale.	G x1.02 (20%)	
L .In March 1861 the Spanish Foreign Minister stated Spain would recognise the C.S. if France did. Spain was afraid of the consequences of siding with the C.S. if the C.S. lost. In March 1861 Spain annexed Santo Domingo which became a major distraction. As did Mexico (where Spain lead allied forces) from 12-Nov-1861. Spain would have recognised the C.S. if Spain thought the C.S. would win.	x1.20% S. recognition (14.9%)	01-Aug-1861 (half of this 20% effect is deemed to be the effect on France)



**TABLE 2.**  
**More What if?**

**The base probability of Confederate independence is taken to be 12.4% in 1861, 10% in 1862, 7% in 1863, 2% in 1864, 0.1% in 1865**

**MORE WHAT IF?**

M. Effect of the Lincoln Administration not issuing the proclomation of emancipation until 01-Jan-1864. The military effect, owing to weaker Union forces as a result of no black enlistments (0.18 million of whom circa 0.07 million in 1863 and 0.15 million in 1864-5 in reality), is x 1.04. The effect owing to the greater probability of British recognition of the Confederacy is x 1.16 summed to x 1.2 and applied to G.	Base x 1.2 (14.9%)
N. If the Davis administration had authorised operations over the border, with Lee as field army commander, ten months earlier (May 1861) than it did (May 1862).	x1.5 (18.6%)
O. If the Lincoln Administration had issue the procolmation of emancipation on 01-Jan-1862 (as Secretary of Sate Seward favoured).	x0.84 (8.4%)
P. Effect on the probability of Confederate Independence if the Davis administration had authorised military operations over the border, with Jackson as field army commander, six months earlier (January 1862) than, it did. The assumption is that Jackson is a 20% better (less fond of the frontal assault) general than Lee but that the benefit of Lee being potentially given the main field command six months earlier than it could conceivably been given to Jackson offsets that by 80%.	x 1.56 (19.3%) Jackson
Q. If there had been no ban on the export of cotton from September to December 1861 and an all exports tariff of 12.5% the Confederacy could have obtained, circa, \$34 million p.a. from it. In fact the Confederacy enacted an import tarriff of 12.5% in May 1861. Of a hypothetical export tarriff on (\$40 million) of cotton the export ban would therefore have cost the government \$5 million. In practice the loss would have partially occurred anyway owing to the Union blockade which, we might estimate, would have caught circa 30% of exports (40% of weapons imports were caught in 1862) reducing de facto revenue loss to \$3.5 million. Assuming the economy accounted for 40% of the Union advantage a reduction in Confederate expenditure of \$1.5 million annualised amounts to circa 2.5% of the Confederate military economy in year one of the war (expenditure being circa \$50 million May to November 1861). This was, however, a hypothetical loss. The government did not propose a tarriff on exports but on imports. An absence of exports was not directly hurting its revenue at all. The measure will have indirectly hurt both confidence and the economy with a net effect on the war of, say, 0.5%. The more significant impact of the measure was the damage it did to relations with the British Empire where even a slight nudge in sentiment might have made the difference between recognition and not.	x 1.05 (13.0%)
R. If the French Empire had, at a 40% chance, allied with the CSA in Nov. 1861 or, with a 20% chance, from 07-Jan-62 (by which date 10,000 French troops were tied down at Vera Cruz which their, at the time, Spanish allies had secured 17-Dec-61). Alternatively, with a 13% chance, after the French invasion of Mexico began (18-Apr-62) and after the Union occupation (25-Apr-62) of New Orleans. Fourthly, from circa 15-Aug-62, after 30,000 French reinforcements reached Mexico (taking the forces in theatre to 40,000), with an 8% chance, and fifth, after the preliminary emancipation proclamation 22-Sep-62, with an 5% chance of France entering the war. Sixth at 4% in Feb. 1863. Of the 200% impact of French intervention in Nov. 1861 40% derives from the US navy being destroyed by the French and 20% from blockade breaking. 30% of the impact is from change in the naval balance of power. The 200% figure assumes initial French intervention would have been half hearted and that year one French infantry would not exceed 90,000 and never exceed 270,000 (in year three).	Nov 61' x 3.3 (40.9%), Jan 62' x3 (30%), Apr 62' x 2.6 (26%) Augt 62' x1.8 (18%), Sep 62' x1.7 (17%),
S. Probability if the British, at a 20% chance, entered the war as Confederate allies in November 1861, with a 6% chance from 01-Apr-62 or 2% chance from 22-Sep-1862. An intervention by both the French and British empires would increase the probability by +120% effect to the first three percentages in Q.	Nov 61' x 5 (62%), Apr 62' x
T. Probability of C.S. Independence if Dixie had embraced 5% emancipation. For example if, with effect from January 1862, two years earlier than was advocated (for all slaves) by Confederate Arkansas Major-General Patrick Cleburne (who was politely ignored) in January 1864, emancipation of male slaves aged 18-23 upon completion of a five year conscription had been implemented. The Confederate army would have been 12-16% larger.	x 1.25 (15.5%) 61'
U. Probability of Confederate Independence if the Seven Days Battles to 01-Jul-62 had led to the destruction, with a 10% chance of happening, of 90,000 Union troops for Confederate casualties of 30,000 (the reality was 18,000 Union casulaties for 19,000 Confederate). If Jackson had followed Lee's orders the chance of this happening would have been, say, 40%. Benefits in foreign reaction similar in weight to military effect.	6% mili. + 6% fore. affa. = x 1.12 (12% 62')



Regimental movement characterised warfare even though, as battles unfolded, regimental organisation tended to break down. This was because following practiced actions was simple and fast. Deployment orders in the game allow regiments to alter their formation and position in an orchestrated fashion often centred on the regimental colours as would have been the case in life with the same advantage of economy adhering to *en masse* action in play as in reality. The Drill manuals laid down where individual officers and non-commissioned officers should stand in relation to the line infantry. When players take advantage of regimental movement *en masse*, which they need not do, these drilled positions are adopted automatically by the men so that players can focus on war fighting rather than the minutiae of company movement. Although many of the regiments at the battle had received very little drill regiments were mostly mustered together so that men could identify themselves in regimental terms. Even without adequate drill when the regimental commander gave an order, repeated as applicable, by the line officers men would naturally tend to seek to obey it and if unsure look to those beside them who might know how to. So a universal high standard of training was not essential to ordered movement *en masse*. It was only essential that a smattering of men (and the sergeants) knew the drill.

## WHAT MIGHT HAVE BEEN

The idea has become popular that the Confederate States of America could not have won the American Civil War at the beginning on 21 July 1861 with a single devastating blow. The superior strength of the Union was bound to tell in the end. This idea has lent the events of the battle a patina of irrelevance. But although this is more true than not it is not unqualifiedly true.

- The idea of irrelevance is justified by reference to the US forces in reserve under New Jersey Brigadier-General Runyon in and around Washington D.C., which were indeed substantial at 13,000 (including 3,600 Washington D.C. militia, 200 Clay Guards and 2,800 of McCunn's brigade in Washington D.C. and 900 7th Massachusetts outside the capital as well as the 5,500 more directly under Runyon), as well as by reference to the troops under US Major-General Patterson on the Shenandoah (18,000) plus the much larger forces gathering and drilling across all the Unionist states. This is one. The balance of infantry power.
- The idea of inevitability is also justified by the hypothesis that the United States would still have fought on even if



**FIGURE 5.**  
**Federal infantry**

A common Federal infantry uniform July 1861

Infantry were equipped with both muskets and rifled-muskets of diverse model ranging from circa 1810 to 1861.

The shell jacket was infantry issue until 1857, of wool, cotton or linen it was frequently worn in July 1861

The Federal forage cap 1859 was taller than the 1861 (or pre-1855) forage caps. In the field, dress, Hardee, hats were also often worn.

The US Sanitary Commission (a civilian organisation supporting the US Army) specified any dark colour but specifically not white socks. The Quartermaster's office described socks as grey but this was not necessarily a requirement. The most common colour was

Washington D.C. and Maryland were lost in August 1861 which is no doubt true. It is two. The political will.

- The next insight is that, following the preliminary proclamation of emancipation on 22-Sep-1862 (published 23-Sep-1862 announced in detail 01-Jan-1863), it became (although this counted for less in Paris than London) even less likely that the British and French Empires would enter the war. Although militarily important internally, given the 179,000 black northerners who joined the Union armed forces, the most important military consequence of emancipation was three. Foreign relations.

- A further reason for thinking US victory was inevitable was that President Davis, until May 1862, was opposed to offensives beyond the boundaries of the Confederate States (some argue that this was the strategy he should have stuck with though that view is mistaken). Probably Brigadier-General Gideon Jason Pillows' occupation of Columbus in Kentucky was the exception that proved President Davis' rule, but despite the Kentucky legislature voting 69 to 26 in favour of neutrality on 16-May-61 by the time Major General Polk ordered Pillow into Columbus on 04-Sep-61 circa 80% of Kentuckians were Unionist so declining to violate its neutrality was becoming a redundant objective. That is four. The matter of strategy.

- That the Union had two and a third times more people and nine times more manufacturing was vital. On average throughout the war the Union fielded a 57% larger army. This is much less than the population difference would lead one to expect. In this sense, the Confederacy militarised more deeply, and tried harder to win, than the Union but it



Fig. 6 Federal artillery caisson



These boxes contain circa three times the number of rounds kept in the limber which (by drill) stands closer to the piece than the caisson.

## 1. DEATH AND CAPTURE

Most players have a primary played-for-character (the de facto Colonel), a secondary (the de facto Lt-Colonel) and a tertiary (the adjutant) played-for-character. The player experiences the battlefield through the eyes of both primary (a player can have more than one) and secondary plus tertiary (who have shorter range views of the battlefield) played-for-characters. The higher the rank of the primary character the greater the number of subsidiary played-for characters. This is partly because Brigadier-Generals and higher officers are accompanied by more aides-de-camp. If a regimental Colonel is killed or captured his Lt-Colonel will forthwith step up (and at the same time become the player's new primary played-for-character). If the regimental Lt-Colonel is also in his turn killed or captured the regimental Major will step up (at the same time becoming the primary or secondary played for character). If all such played-for characters, excluding aides-de-camp and adjutants (who may not step up), are killed or captured the player is knocked out of the game altogether. In the case a brigadier-general is killed or captured he is replaced by a subordinate played-for-field-officer and so may be out of the game **forthwith**. However most of the time the brigadier-general will also play directly for a subsidiary field command and this role will carry on.



was not enough to offset the Union's greater might. The Confederacy did export 30% more goods and services by value (US\$225 million - of which cotton was circa \$156 million) than the Union states (\$175 million) in 1860 but this potential advantage, that the Confederacy possessed, was not as great as it needed to be for victory - even if trade had been maintained. Trade was not maintained. This is five. Let us call it Finance.

- The sixth nail in the coffin of any idea of an alternative outcome to the war was the Confederacy's squandering of its advantage in trade. For example, the Confederate cabinet's mistaken decision, in April 1861 (the month the US announced its intention to blockade Confederate ports), to reject Judah Benjamin's proposal to buy up 100,000 bales (50 million pounds weight or \$5 million of value), or more, of cotton and warehouse it in England for gradual sale over time to partially finance the war effort. The folly of rejecting this proposal, grossly inadequate to the scale of the task at hand though it was, was multiplied, from September 1861, when shipping out cotton would normally have begun, by the idea of forbidding the export of it. Forbidding cotton exports was never Confederate government policy. Instead, some state legislatures directed, and across the states unauthorised committees shamed, exporters into withholding their goods. Southern exports of cotton to Britain were down 97% in 1862 (the 61' crop) as compared with 1861 (the 60' crop). This embargo was so popular it more or less enforced itself from September 1861 to February 1862 (when shipping would normally have wound down). In spring 1862 half of the Southern cotton fields were growing food where they had previously grown cotton. This policy was the sort of self-destructive delusion that demonstrates what has been called the "cloistered cocoon that was Dixie". The damage to relations with the British (and French) Empires had already occurred by the time the movement's abject failure to encourage foreign recognition had become undeniable. The policy was never passed into law or even voted on by the Confederate Congress though it was discussed. In any case it is six. Failure in trade and relatedly in naval construction.
- In addition there were the operational decisions on the day of battle. The possibility that neither army, but certainly not the Confederacy, had the wherewithal to achieve a 19th century Cannae. This is seven.

In this section I have focused on imagining, and quantifying (in Table 1 and Table 2), changes that would have made Confederate independence more likely. There were also changes that the Union could have enacted to make its victory more rapid and complete. For example, issuing a proclamation of emancipation, say, one year earlier on



01-Jan-1862 as Secretary of State Seward, for one, was advocating. Some of the changes I imagine could have been mitigated by the Union. For example, imagine that if the French, Spanish or British Empires had recognised the Confederacy the Union had then lifted its blockade of the Confederacy. This step would have prevented clashes with imperial warships. Lifting the blockade would have made the war harder to win but unlike the intervention of a major European power would most likely not have resulted, of itself, in Union defeat. I mention this illustratively. In practice it would likely have been politically impossible to have withdrawn the blockade (because of a foreign threat).

On 01-Nov-1861, upon the retirement of Winfield Scott, George McClellan was appointed general-in-chief. On 11-Mar-62 Lincoln removed McClellan from the post of general-in-chief so as to enable him, officially, to focus on his new field command of the Army of the Potomac. McClellan was dismissed from this post too 23-Jul-62 after the failure of his imaginative Peninsular campaign. The Union cause would probably have been better served if McClellan had been given neither of these posts. The tables are more focused on what the Confederacy could have done differently than what the Union could have done differently. This is because Confederate victory was very unlikely. One has to probe deeply to find the necessary conditions for it. The main thing about the what if tables is their attempt to quantify some of the variables

### • ONE: BALANCE OF INFANTRY POWER

As well as the 34,800 ●● under McDowell at First Bull Run (of whom about 18,000 were actually committed to fighting the action) the Union had 18,000 men, in the Shenandoah under Robert Patterson, 5,500 New Jerseyites under Runyon ●●● between Bull Run and Washington D.C., 2,800 New Yorkers under McGunn at Runyon's disposal in Washington D.C., circa 3,800 District of Columbia Militia garrisoning Washington D.C., 900 men of the 7th Massachusetts just outside Washington and, I estimate, 8,000 across Delaware, Maryland and New Jersey (69,100 total in theatre). The Union had a further 117,900 men behind the front lines (perhaps 15,700 in Pennsylvannia and 20,300 in the Empire state) so 187,000 altogether. Therefore, even if all 18,000 men of the Union Army committed to action at Bull Run had become casualties (while 16,800 fell back on Washington) and a Confederate force of 24,000, out of 51,200 (including, say, 16,200 positioned across Virginia) in theatre, descended on Washington D.C. for those Confederates to capture, say, 29,800 Federals, secure in the fortifications around Washington (while, say, 10,000 rebels pinned down Patterson's 14,300), was, I estimate, two hundred times less likely than what actually happened.



The prospects for bringing Maryland into the Confederacy, even after a Confederate (whose total troop strength, in July 1861, beyond the Virginia theatre, was about 88,800 for circa 140,000 altogether) victory, say, six times more crushing than their historical one, at First Bull Run, would have been bleak. This would have been even more true if a larger portion of the Federal Army than my imagined percentage (of circa fifty per cent) had managed to fall back (in history ninety one per cent did). To capture Maryland, Delaware, and at least besiege Washington D.C., in, say, August 1861 the Confederates needed (at least) two smashing victories. One at Manassas, say, nine times greater than what they actually achieved and another, hot on its heels, either over Runyon and the retreating remnants of the Union Army or just the latter if Runyon had already fallen back on the Washington forts. Only with a nine times greater victory (call it a 3% chance) plus another smashing victory within three weeks (say a 1% chance of both) could they have secured, say, a one in five chance of storming and possessing Washington D.C. by August 1861. I quantify the odds of this and the Confederacy taking Maryland, Delaware, Washington D.C. New Jersey and Philadelphia by the end of October 1861 at 0.3% (three hundred and thirty three to one against).

Alternatively, having used the railways to concentrate two disparate armies against McDowell perhaps the Confederacy could have reversed the motion and, tight on the heels of First Bull Run, hit Patterson swiftly enough, with a large enough force, to wipe his army out before turning around, again, and investing Washington with no possible threat to their western flank? If so, they could only have afforded to spend about two weeks obliterating Patterson (who might have frustrated an attempt at obliteration by falling back) or else end up worse off thanks to the rivers of Union troops mobilising and deploying to the capital.

In the case Patterson's army was destroyed within two weeks of a massive First Bull Run victory, so by 05-Aug-61, the Confederates could have invested Washington with, at best, 52,400 men (all those in theatre plus 1,400 reinforcements from outside Virginia) against circa 44,000 Union (a third of the field armies, the reserves and 6,000 reinforcements). This disparity would only have been sufficient to lay down a siege. Alternatively, if they had achieved a Bull Run follow-up victory and faced Washington circa 28-Jul-61 with, say, 32,300 men (700 reinforcements, 8,100 from northern Virginia, 16,000 or 80% of the former army of the Potomac, 7,500 or 80% of the former army of the Shenandoah) while the Union defended with, say, 26,000 (and Patterson's 14,300 intact to the west) then Washington might still have repelled assault. With Washington invested the Confederates could have fought a war of manoeuvre while simultaneously besieging the



capital. Let us note that the Union could have assembled a, say, 32,000 strong force to relieve the capital as soon as early October. Also the Union might have been able to supply Washington D.C. via the Potomac river.

In every case time was the Union's friend as far as the balance of infantry power is concerned.

From 01-Aug-1861 to 01-Nov-1861 Union reinforcements were reaching Washington D.C at the rate of circa 3,150 men per week (13,000 per month). A slow careful siege of Washington, even if Washington was cut off from reinforcements, would not have been in the Confederates best interest. The capitol, if possible, had to be stormed. The Confederate window of opportunity, had First Bull Run been a 19th century Cannae, say, nine times greater than in life was widest in the two weeks after First Bull Run. In the case the Confederates had managed to destroy at least seventy five per cent of the Union Bull Run field army (22,600) and also isolate and destroy Runyon's New Jerseyites in the open, in July or early August 1861, the Confederates would have had a circa forty per cent chance (with a 2:1 advantage of numbers) of overwhelming the Washington militia and McGunn's brigade (plus, say, 7,000 troops who had retreated to Washington) and storming the capital forthwith.

In fact, although they held the field at First Bull Run the Confederate victory was marginal (indeed you might say they were lucky to not be defeated). Our historical perspective on First Bull Run is conditioned by the relative slightness of the Confederate military achievement there. That conditioning is put aside by this alternative history which affords either side an opportunity to achieve the crushing victory, of the sort that could have saved four hundred thousand American soldiers from wounding, another six hundred thousand from death and have transformed the history, for the better or the worse, of the world. Confederate President Davis, arriving on the battlefield late in the day, was so excited by the seeming scale of the Confederate victory as to push for a remorseless pursuit to capitalise on the situation, effectively favouring a crossing into Maryland against his own policy of only repelling invasion while standing on the defensive, but the army was too shell shocked, elated at having lived, or exhausted in the one part, and ill positioned in the other, to pursue on 21-Jul-61.

Even if the Confederacy had, in July and August 1861, destroyed ten times as many men as it did, the Union would have replenished the losses by 01-Nov-61. This suggests that not only was the Confederacy's brightest chance to



bring Maryland into the Confederacy (and capture Washington) the period July to September 1861, but also that even in this case the Union, with a new front established in Delaware, New Jersey and Pennsylvania, would most likely not have forfeited ultimate victory.

## • TWO: THE POLITICAL WILL

In the case Washington D.C. had fallen by mid-August 1861 (and Maryland been taken into the Confederacy) the Civil War would still, initially, have carried on. The seat of the Federal government would have been relocated, probably, to Philadelphia (if it was still held) or Boston. In such a case there would have been a greater chance, even a much greater chance, that the Confederacy would have achieved independence, because victories, early on, including the capture of Washington D.C. and Maryland, would have increased the chance of early Anglo-French recognition and/or intervention when it might have been most decisive early in the war.

Even had foreign intervention not occurred had Maryland (0.69 m. population at the time) fallen in August 1861 the Empire State's commitment to the conflict might have fractured. New York state was Unionist, having supported Lincoln over the Democratic Fusion ticket by 54% to 46% in the 1860 Presidential election, but New York City and Brooklyn (because they benefited heavily from southern trade and New York working men, unlike those further north, feared competition from southern slave labour if it was freed) was not. This does not mean, riots against conscription notwithstanding, New York City was Confederate. Neutralist rather. In 1861 New York City's (0.81 million) population (excluding Brooklyn) was about 3.6% of the Union states as a whole. If we imagine a victorious Confederate Army, that had captured Washington D.C. in August 1861, advanced from Maryland (0.69 million population) into Delaware (0.11 m. population) in September 1861, causing the relocated Federal government to flee, say, to Boston, carrying on into New Jersey (0.7 m. population) in October 1861 it is not hard to imagine that army adopting winter defensive lines in south east New York State north of, west of, and around New York City, Brooklyn (0.27 million population) and Philadelphia (0.6 million population) which latter they would have captured en route. For such an unfolding they would undoubtedly have had to win additional battles. Nonetheless, in this case, with circa 13.6% of the Unionist States population denied to the Union, and perhaps 7% added to the Confederacy, the demographic balance of power would have changed from 2.1: 1.0 to 1.9: 1.0. This might not seem decisive, but if you adjust for the fact that the



Confederates conscripted a higher percentage of their population this reduces the long term servicemen advantage that the Union held over the Confederacy from 157% in history to 127% in this imagined world. That is more or less halving the Union's numeric lead in numbers of soldiers. It is possible to imagine a peace being struck in these circumstances as the Union fought on but without the overwhelming advantages of numbers that allowed it in reality to grind the Confederacy down from 1863 onwards. It is also possible, naturally, that in such circumstances the Union would instead have been moved to mobilise a higher proportion of its population. However, even in a universe in which the Union's numeric advantage were, for a considerable period of time, halved, the Union would probably have won the Civil War given its greater power in depth. Under Lincoln it would not have lost the will to fight until at the earliest the mid-term elections of 1862 and then only if the war was going extremely badly. So even with a crushing early victory or victories leading to the secession of Maryland, Delaware and New Jersey and the occupation of Philadelphia, Brooklyn and New York City by January 1862 still the odds of early Confederate victories breaking the Union will to war looks, in the absence of foreign intervention, remote. Nonetheless, holding so much territory so early would have raised the chance, I estimate, of Confederate independence to 19.6% (independent of its increasing the chance of foreign intervention) in the wake of a series of spectacular Confederate victories.

### • **THREE: FOREIGN AFFAIRS**

Between 1861-63 the impact the military balance had on the outcome of the war arose, perhaps predominantly, from the possibility of early, more spectacular, Confederate military victories than in life, leading to British, French or Spanish recognition of the Confederacy. This, had it happened, would in turn have led those powers to demand the right to trade with the Confederacy in a manner consistent with the doctrine of freedom of the seas, and from this would have come clashes with the Union warships on blockade. Had such clashes led France into war with the Union the Confederate cause would have had a good chance of triumph. The population of France was 37 million to the Union's 22 million. Heavy industry production was similar in each nation with iron production, for example, being about 800,000 tons per annum in both. The French Navy, however, in January 1861 was far stronger than the Union navy. It had 39 screw three deckers, 36 screw frigates and corvettes, 56 screw sloops, 33 paddle frigates and corvettes, and 3 broadside ironclad capital ships of 16,000 tons combined, being 167 engine enabled warships not counting gunboats. The Union had 19 engine enabled warships not counting engine driven gunboats. Of these nineteen Union warships four were out of commission. All of these



warships, on both sides, were facing imminent obsolescence in coastal combat which was about to be revolutionised by ironclad monitors. Monitors were not so seaworthy, however, as to be suitable for blue water sailing. Nonetheless they were about to render much of the existing naval arsenals redundant as most of the rest would be by broadside ironclad capital ships. *USS Monitor* was launched 30-Jan-62. Had the French gone to war with the Union in December 61' we can imagine them, at least if they deployed their fleet forthwith, denying the Union the means to launch *USS Monitor* at all. Alternatively, having swept the seas clear of the Union Navy we can imagine the French hysteria upon *USS Monitor* emerging to play havoc with their warships within its range, at least until the French responded with construction in kind. The French could have built monitors (in Europe) as fast as the Union although for seaworthiness reasons disfavouring trans-Atlantic monitor deployment would have had to instead finance the capacity at Confederate shipyards, say, in New Orleans, Louisiana or Norfolk, Virginia or at the large docks at Havana in Spanish Cuba.

In February 1862 Union forces numbered circa 350,000. The Confederate forces at the time were circa 230,000. The French army was circa 400,000. In the event of war with the Union France would have kept at least half of its army (200,000) in Europe and Africa (5,000 in the Papal States, 15,000 on the Spanish border, circa 35,000 deployed for internal security, circa 35,000 in North Africa, perhaps 30,000 in Alsace-Lorraine and 30,000 on the Italian border and 45,000 Imperial Guard). But given that it committed to deploying circa 3,000 troops to Mexico in January 1862 and 37,000 more troops to Mexico in March 1862 I think we can allow that France would have committed circa 70,000 troops, based on its capacity to oceanically transport at least 35,000 in one wave, to the Confederate cause, within four months (in two waves) of joining the war, if it were not yet in Mexico, down to 35,000 if it was. Meanwhile and in any case the French fleet would have broken the Federal blockade on the south. Indeed, if France had in turn imposed its own blockade on the north it might have been able to impair the construction of monitors by the Union navy. On the other hand, the French Empire might have refrained from blockading the Union ports so as not to antagonise the British Empire. Prioritising the garrisoning of France would have prevented the French Empire, initially, from bringing most of its strength to bare. However while France might have grown war weary over time it might instead have scaled its commitment up if things went wrong at first. I estimate its entry into the conflict would have tripled the chance of Confederate independence from 12.4% to 37.2%. This number bases about 30% of that improved chance of independence on the probability of France delivering command of the seas to the Confederacy (both in the form of amphibious mobility, France had the shipping to marine lift circa 35,000 men, at least if it was into a friendly port, and/or, so long as the British Empire accepted it, to blockade). In other words, if fear of the British Empire caused France to decline to



blockade the north then the chance of Confederate independence with French intervention would still rise from 12.4% but only to 33.5%. The north was much less reliant on overseas trade in absolute terms than the south so most of the benefit of French naval superiority would have been in the freedom to open new army fronts behind the lines and to enable Confederate government revenue to increase as a result of trade. I would allow for the chance to rise to 49.6% if France doubled down on its commitment and increased its army strength in North America to, say, 140,000 (more likely by raising additional troops than by withdrawing a higher percentage of the army from Europe, Africa and elsewhere). Controlling the seas would have allowed the French to threaten to, or actually to, drop 35,000 strength forces anywhere along the coast forcing the Union to disperse its army to defend ports such as Boston, Baltimore, New York, Philadelphia and Wilmington (which in 1868 was building more iron ships than the rest of the USA combined), especially if this was all happening because the latter four cities had already been captured. Capture of the mid-Atlantic coast would make the rest of the north east coast even more important for the Union to defend. If the allied (Confederate-French) army forces were 300,000 to 370,000 versus 350,000 Union then the outcome of the war would have been hard to predict. The allies with a combined population of 46 million more than twice the Union's would have had the greater strength in depth albeit potentially struggling to overcome disadvantages arising from the distance between France and North America. A distance which in some respects would have cut both ways. The Union would have found it exceedingly hard to force the French Empire to cease and desist.

Foreseeing such circumstances, if they were losing the war on land, the Union might have lifted the blockade of the Confederacy before clashes with France could occur thus denying France a *casus belli*. Halting the Union blockade might have increased the Confederacy's chance of victory by, say, sixty seven per cent (so to 19.8% in 1861) not just because Confederate government revenue could have been massively increased (by tariffs on trade) but also because increased revenue would potentially have supported increased borrowing. The effect of free trade with the Confederacy in year one on the war's outcome would have been a little greater than that if it were not for the fact that the Confederate prohibition on cotton sales to Europe meant the Confederacy's main export was failing to yield any revenue anyway. Full trade at 1860 levels would have increased the Confederates real government revenue by a factor of about nine as against reality by 1863.

On the other hand, if the Union had declined to lift the blockade, in combination with the loss of Maryland, New Jersey, Delaware, Philadelphia, Wilmington and New York City, then war with either France or Britain or both would have been



quite likely, certainly up until August 1862 and would have continued to be high with France for perhaps about a year thereafter. I think it doubtful that the Union would have agreed to lift the blockade whatever the circumstances. More likely the British would have legislated to limit their traders from flouting it. But if they did not conflict could not have been avoided, even after September 1862, since the British government could not accept repeated seizure of British merchantmen by the Union navy in the case that Britain had recognised the Confederate government as legitimate. This recognition was, however, very unlikely without improbable early Confederate victories on land and almost inconceivable after the preliminary Proclamation of the Abolition of Slavery in September 1862. This is why it was France that was more likely to have acted differently than it did not Britain. Contrary to the historical consensus that France was bound to follow the British lead the Emperor Napoleon was always pursuing a France first policy••. Although that did not countenance war with Britain it certainly did not exclude independent action. This is proven by the French invasion of Mexico which the British refused to participate in once they understood Napoleon's intentions. The force that landed in Vera Cruz on 08-Dec-61 consisted of 6,000 Spanish troops, 3,000 French and 800 British but the French admiral in charge of the allied force had secret orders to march on Mexico City with or without Spain and Britain if the Mexican monarchist party did not immediately declare for the French puppet ruler of Mexico Maximilian. We probably do have to consider Maximilian a puppet since Napoleon III brazenly lied to him claiming British support was secured when in fact it was known that it was not available at all. More generally, it seems likely that it was the influence of Napoleon III's two successive Ministers of Foreign affairs that really explains France not intervening in the American Civil War••• and that without that influence the Emperor would have recognised the Confederacy, mostly likely in November 1861, with war resulting sometime in or around January 1862.

The Spanish army was 130,000 strong (with 70,000 reserves) in 1860••••. With the ability in 1861 to deploy 40,000 overseas or at least 20,000 across the Atlantic, without calling up reserves, and having more than 30,000 in the Caribbean already Spain could have entered the Civil War in 1861 with about 35,000 marine mobile infantry especially if debouching into friendly Confederate ports. The Spanish navy had 3 screw frigates, 5 screw sloops and 3 paddle frigates so 11 engine powered warships not counting its 26 paddle gunboats and 35 sailing warships. This force was about 75% as strong as the US navy. Like the US navy it lacked ironclad ships of the line. The Spanish began a major expansion of the navy in 1861 but this programme did not launch ironclad ships of line into the fleet until 1863 (when two were launched). At the same time, however, the Union was massively expanding its naval and ironclad forces. In 1862 it launched 17 engine powered warships including three ironclads not counting 12 paddle wheel gunboats and 23 screw driven gunboats but it laid down 29 ironclads. The USN was outbuilding the Spanish navy at a rate of about ten to one. In early 1863 the U.S.N. invited the Spanish naval



attaché in Washington to the Brooklyn Navy Yard to report on its ironclads programme. The aim being to intimidate Spain away from contemplation of intervention on the Confederate side. The Spanish navy was a significant threat to the Union in July 1861 but it was unlikely to be strong enough to turn the tables on the Union at sea probably less so in 1862 and it would have severely outclassed from 1863 onwards. On the other hand, if 30,000 Spanish troops had landed from boats on the Potomac south east of Washington or at Alexandria on 21-Jul-1861 that would have put a cat among the sparrows.

Spain and the Confederacy were natural allies. Spain did not abolish slavery in Puerto Rico until 1873 and did not abolish it in Cuba until 1888. Spain was afraid of the USA and would have gladly seen it weakened by being broken up. Spain was, however, suspicious of long term Confederate intentions knowing that much of the clamour for US expansion at Spain's expense before the Civil War had come from politicians in Dixie. As a result it hesitated to take the Confederate side. More importantly, and by contrast with France, Spain did not consider itself strong enough to take action against the Union if there were any chance that the Union might win the war. In the case France had entered the Civil War Spain would probably have done so too. It was, however, deeply reluctant to take the risk of backing the Confederacy by itself and if it had done that would probably not have been decisive.

#### • **FOUR: STRATEGY**

Davis's opposition to the offence did not last. Once Lee was appointed commander of the army of Northern Virginia on 01-Jun-62 it was not long before the Confederates took up the offensive. But this could have happened a year earlier. Although it would have required President Davis to instruct Lee to be aggressive. In reality Lee was careful to insist, particularly in the crucial period May and June 1861, that the army remain on a defensive footing..... strategically for so long as those were the orders he was receiving from Governor Letcher initially and President Davis once Virginia joined the Confederacy in late May 61'. Virginia's referendum on secession was not held until 23-May-1861. We may speculate that it was only gradually that Lee came to conclude that no allies were riding to the rescue to justify a defensive strategy. His own thinking probably did not embrace the strategic offensive until January 1862 (after the November 1861 Trenton incident had failed to cause a rupture between the Union and the West European empires) at the earliest. Robert Edward Lee was put in charge of coastal defences from South Carolina to Florida a post to which he had been appointed 05-Nov-1861 arguably as a punishment for his miserable failure when given the West Virginia field command circa 05-Sep-61. Lee was appointed military advisor to President Davis 11-Apr-62. It may be that once he held this post he had time to compose his commitment to the strategic



offensive but that it was Davis that held Lee back while he held this role or perhaps he brought Davis round to his own way of thinking. In any event, on 02-Jun-62 Lee was made c-in-c of *The Army of Northern Virginia*, and in this role, once the Peninsular was retaken, committed to a new more aggressive strategy. Perhaps if Lee had been allowed to organise *The Army of Northern Virginia* in January 1862 instead of being sent to the coast this would have changed the war's outcome.

We might say that at *The Seven Days Battle* (16-Jun-62 to 02-Jul-62), at *Antietam* (17-Sep-62) or even at *Gettysburg* (01-Jul-63 to 03-Jul-63) it was not too late for Confederate military victories, if they were great enough, to end the war. Alternatively, had Jackson (who did not like frontal assaults as much as Lee) been given the field army command in either or both of these two cases, instead of Lee, it is possible that the south might have won those imaginary great victories. The advantage for the Confederates of deploying on Union soil was that foraging allowed for a more mobile form of warfare with a lighter logistical element. The more mobile side could concentrate more effectively and the best foraging was on Union territory. Also taking Union territory would hurt Union production while distracting the Union from hurting Confederate production. Had the Confederacy, for example, taken New York City the Union's ability to borrow money in late 1861 would have been crippled as war financing was mostly obtained from the New York Banks in year one of the war. Had the Confederacy taken Wilmington they might have been able to outproduce the Union in munitions. I believe if Lee had been given the command of the army of Northern Virginia on 01-Jan-62 and advanced out of the Confederacy fighting a war of movement the odds of Confederate victory in the war would have increased from, say, 10% to, say, 16%. The core of my argument is that unless defeated in the 08-Nov-1864 Presidential elections Lincoln was never going to recognise the Confederacy. The only way the Confederacy could survive was by forcing him to negotiate through victorious offensives. It is true that a more effective defence (avoiding the twin disasters that were Antietam and Gettysburg) might have led to a McClellan victory in the 08-Nov-64 election (in reality McClellan lost by 45% to 55% of the vote). But by 08-Nov-1864 the economic collapse of the Confederacy was so far advanced that even if the Democrats won the Presidential election it is doubtful the Confederacy could have survived. McClellan, in any case, was a war Democrat which meant he was opposed to immediate ceasefire. His party did, admittedly, favour one possibly including some localised to the south reduction in Federal powers or even secession. But McClellan favoured a negotiated peace, not an immediate ceasefire, and although he was willing to concede on matters to do with slavery to get it he was unlikely, highly



unlikely, to negotiate secession from the Union. Moreover, reversing the Proclamation of the abolition of slavery nearly two years after it happened would have been very difficult. The outcome of an interaction of these two views of McClellan's on the one hand, and his party's on the other, was by no means certain to leave the Confederacy in existence given how imminent its military collapse was in the winter of 1864.

- **FIVE: FUNDING A VAST ARMY (finance and economics)**

From the first shot at Sumter (fired by Edmund Ruffin) time was running out for the Confederacy but even more so by 17-Sep-1862 and the battle of *Antietam*. Already by October 1862 the Federal government was spending \$445 million per year annualised. By contrast the Confederacy's real (adjusted for inflation) spending in the four months December 1861 to March 1862 was \$51 million (annualised \$204 million), but by August to December 1862 it was down 35% to \$43 million (annualised \$129 million) in real terms and it continued to decline from then on as the Confederate economy unravelled. Inflation in the Confederate states was already at 135% by October 1862 (later hyperinflation set in). The mounting strength of the Union, particularly through its ability to raise long term (5-20 year) borrowing was approaching the unstoppable. What this means is that in order to win the Confederacy had to do so within the first two and a half years of the war (ideally within the first 12 months). This statement is contrary to the belief that the Confederacy could have won by a more effective defence, the eschewing of Lee's costly offensives which shattered, on that view, at Antietam a leaning in Britain toward joining the war. Instead the Confederacy could have waited for the Union will to fight to crack in the 1864 election. Actually a long war was not in the South's interest precisely because its economy was unravelling at an accelerating speed. It is also uncertain what effect a huge Confederate victory at *Antietam* or at *The Seven Days Battle* would have had on the British willingness to extend recognition to the Confederacy. The offensive strategy was sound, or could have been if better fought and embarked on sufficiently in advance of the proclamation of the abolition of slavery. The proclamation was a disaster for the Confederate cause since whatever the outcome of the war, even if the Democrats had won the November 1864 election, they would have found it very difficult to role the declaration back. This in turn would have made a negotiated peace much harder.

The Confederates had to win the war before the preliminary proclamation of abolition in September 1862 certainly



before the state of the Union address of January 1863 when the full details of abolition were settled on. This was because it became the main obstacle to securing an alliance with the British Empire. Particularly with Jackson (whose generalship was probably superior to Lee's) commanding the main field army more successfully France might have been induced to raise the US blockade up to the end of 1863 (France had abolished slavery throughout its territories in 1848 and more to the point the Emperor was hostile to it but abolition was not his main consideration - far from it). The Confederate economy was crashing as early as December 1862 when inflation was running at 160% annualised even at the same time as the price of slaves, because the market had lost confidence in the Confederacy's ability to survive, was falling.

If Britain and France recognised the Confederacy they probably would have no longer been willing, without a fight, to allow the Union to prevent trade with it. Defence of freedom of the seas would probably have precipitated an allied intervention and if the Confederacy could trade its ability to finance the war would have increased by almost an order of magnitude in due course.

Of the two powers Britain and France, it was France that was more drawn to intervention. France was keenest to intervene with British backing but the Emperor favoured unilateral action in the absence of British support. Unfortunately for the Confederacy the Emperor's ministers did not. However if, by 31-Dec-1861, the Confederacy held Maryland, New York City and Philadelphia perhaps France, even while Britain held back for sympathy with the cause of abolition, would have decided to hazard independent action, motivated also by its desire to secure Mexico following the 08-Dec-1861 Anglo-French-Spanish allied intervention there (to ensure Mexico's payment of its international debt after Mexico called a moratorium on interest payments). More likely, in Paris, the intervention was part of a larger plan to control Mexico and protect its American colonies. The Spanish occupied Vera Cruz from 21-Dec-1861 and Anglo-French forces arrived there on 07-Jan-1862. On 09-Apr-62 the allies fell into dispute and the British decided to withdraw from Mexico. By contrast the French committed to reinforcing their position with 30,000 fresh troops arriving in July 1862. Following conquest of the major cities of Mexico on 10-Apr-64 the second Mexican Empire was established under the military protection of the Second French Empire. The intervention of France in the Civil War, even without British involvement, would quite likely, though not probably, have resulted in Confederate victory. If French intervention happened in late 1861 it might have prevented the



invasion of Mexico freeing the French intervention effort to focus solely on the Civil War. If it had happened in early 1862 it might have been combined with the operation in Mexico and potentially been less decisive as a result. But it is unlikely the French could have merely dabbled in a war with the Union. Left to their own devices Unionist privateers and the Union navy were likely to cross the Atlantic and cause France immense embarrassment. To forestall that France would surely have entered the war, if it did at all, with a massive redeployment of naval strength to Confederate and Caribbean ports for operations against the north east coastline of North America. Defeat of the American by the French navy, even without any action by the French army, would have altered the trajectory of history (making US intervention in WWI for example less likely) even if it did not lead to Confederate independence.

### • **SIX: THE CLOISTERED COCOON THAT WAS DIXIE**

Why did the Confederacy never consider offering emancipation, say, in exchange for male slaves aged 18-28 volunteering to join the army, if the rebellion was about states rights? Conversely, if the rebellion was really about slavery why did the southern states argue in terms of a state's right to dissolve its Union with other states? Why did the Confederacy never consider, thereby ensuring that its finances rapidly collapsed in the war that unfolded, a significant income (or other direct) tax? The Union introduced an income tax of 3% for any amount of income above \$800 per annum in August 1861. In the same month the Confederacy introduced an income tax of 0.5%. It was to be collected by the states, but only South Carolina really obliged. A total of \$100,000 was raised. When Judah Benjamin suggested the cotton bales plan to finance a war that might last for a year if not more not the months that most people expected why was it dismissed, even as a contingency, by the rest of the Confederate cabinet? The reason is that the Confederacy did not grasp the scale of the task it had set itself. It was insensitive within its cocoon. The South might have won the civil war. In a universe of alternative universes it would only rarely do so. Perhaps the single largest reason for this was that it did not face the bitter truth. It preferred sweet lies - a cloister of its own devising from which it could be dragged only by the reality of defeat. It would have taken a greater degree of honesty than Dixie could marshal to admit that partial emancipation was the single step it could have taken that would have most certainly and decisively increased its chance of victory. With less slavery to polish the tarnished Confederate cause in British eyes it is likely that Prime Minister Palmerston would have



recognised the Confederacy. Indeed, following the dispatch to the British embassy in Washington of his note of protest at the Union seizure of *The Trent* in November 1861 the Prime Minister himself predicted that war with the Union was now probable revealing, perhaps, whether unwittingly or otherwise, that his note sought to bring this about. The British ambassador (who favoured peace) succeeded, by paraphrasing it, in toning down the protest note to the point where the Union could turn the other cheek. But even if Britain had not intervened had the Confederacy raised volunteer black slaves, aged 18-28, in return for freedom after five years of service (so 10% not 100% emancipation) the Confederate army might have mustered a further 190,000 men to the colours. The South had to have its cake and eat it. It was too confident in itself to assess the dire chance of retribution if it carried on ahead like a horse wearing blinkers straight over the cliff of history.

"Edmund Ruffin, the seventy-one-year old agronomist and radical secessionist who fired the first shot at Sumter fled into the woods just before Lee's surrender...Eight of his eleven children were dead as was his favourite daughter-in-law. His whole remaining capital, loyally invested in Rebel securities, was gone and so was his dream of an independent South...Later returning to his son's house..." (N.B. his own had been seized) "...in his room upstairs where he normally worked on his twenty five volume diary he draped a Confederate flag about his shoulders, and, as he recorded, he felt his doubts and fears melt away. Grasping his pen, that he had wielded as a successions sword, he affirmed, once, more, "I here repeat, and would willingly proclaim, my unmitigated hatred to Yankee rule." Then he placed the muzzle..." (N.B. of his firearm) "...in his mouth and departed a changed world he wanted no part of."

### • SEVEN: OPERATIONS

The main operational failing of the Confederates at First Bull Run was not utilising more of their army. In particular in such a way as to cut off the Union retreat. The main contribution of Bonham, Longstreet, Jones, Ewell and Holmes with circa 13,500 men between them, was to pin Davies and Richardson, with circa 5,000, in place. This was a very poor use of forty five per cent of the Confederate army. Especially since the credit for this must go to Union general McDowell who returned Davies and Richardson to Blackburn's ford, after the action there on the 19th July, with the intention of pinning much larger Confederate forces in place exactly as occurred.



The Confederate brigadier-general Cocke (3,000 men) was also under-utilised despite having been ordered, with Bonham, to attack Centreville. The glaring problem here was that the order did not say when to attack but rather that the time would be announced in a subsequent order. It wasn't. Instead it was superseded by an order to defend "to the last extremity". ●●●●●

It was unfortunate for the Confederates that the man, Colonel Jordon Beauregard's chief-of-staff, who normally would have written the army's orders in a clear and concise manner, was, when Beauregard needed his orders written down, unconscious after the HQ physician, observing his exhaustion, had prescribed a narcotic to make him sleep. Beauregard, having found Jordon slumped over his desk had kindly decided to post a guard to make sure the sleep was uninterrupted. Instead Beauregard himself dictated, to Johnston's chief of staff, a set of vague orders which were presented to General Johnston for signature at circa 4.50 a.m. (first light that day was 4.39 a.m.). At such a time Johnston must have presumed it was too late to change them. We know he was unhappy with them having expected Jackson, Bartow and Bee to have been moved overnight to the left behind Cocke. Had it happened this might have made the Union's defeat more severe. This would have been especially likely if the one of them on the left behind Cocke, had they been there, had defended Sudley Springs and potentially moved, towing the others with him, to defeat the Union in detail as they came at it.

Moreover, the disposition of Longstreet et al. was such as to afford them the geographical opportunity to cross Bull Run, say, at McClellan's ford, and advance north east, avoiding Richardson and Davies altogether, to bag the Union army at its moment of (potential) retreat. So long as Bonham put on a good demonstration to hold Richardson and Davies in place this movement could have been effected by Longstreet, Jones and Ewell or, even, just by Jones and Ewell (perhaps with Holmes). Alternatively, the latter two, three or four could have advanced along the Alexandria railway due east cutting north at some point to prevent the Union army from reforming east of Centreville as it in life did. The four together might even have been sufficient to defeat Runyon had they brought him to battle even further east. This could in turn have left Washington with inadequate defences if the bulk of the Union army had been taken at First Bull Run.



Assuming a shallower movement, with three brigades, they might have even done both advancing Longstreet and Jones to the east of Centreville and Ewell and Holmes east along the railway. This might have required Davies and Richardson to have remained supine and the Union reserve in Centreville not to have realised what was happening, but even if Davies and Richardson had woken up and, say, decided to overrun Bonham they would have found it difficult given the size of his brigade and the topographical advantages of his position. Alternatively, if the Union had moved to block such an outflanking movement and prevented it the Confederates would have been little worse off. Such a movement to the Union rear would have put 6,500-8,500 men in the ideal place to turn the Union collapse into a grave rout with many more prisoners taken. Conceivably, Jones and Ewell might have manoeuvred more locally to take Davies and Richardson in the flank while Bonham and Longstreet took them head on. If this had resulted in Davies and Richardson being smashed it might have freed all four brigades on the Confederate right to exploit and compound a general Union rout.

The main operational failing of the Union at First Bull Run was failing to launch its attack sooner.

Tyler's division, in particular, was instructed to demonstrate before the Stone Bridge and it did. But it also fell for Evans's bluff to the effect that the bridge was significantly defended when in fact, after Evans headed north west, it was not. Tyler could have stormed, or attempted to storm, the bridge long before he did. Tyler's division could also have outflanked the bridge. Sherman's brigade, for example, could have crossed at one of the fords slightly to the north of the bridge while Schenk's brigade simultaneously assaulted the bridge directly. A direct assault would not have been easy in the face of the Confederate abattis. Nonetheless, this, because Evans's brigade was small should have carried the position even if Evans had been defending it in full but especially since he more or less was not at all.

If the Union had crossed at Stone Bridge earlier they could have taken the Confederate defence in its right flank before it had time to gather strength and defeated it in detail leading to the successful implementation of McDowell's bold plan to take the Confederate army in the rear by a sweeping right hook.

Hunter's and Heintzelman's Divisions were also too slow. This might have been offset if they had begun their march an hour or two earlier, or if they had found their way to the track through the woods that they were under instruction to follow and missed it or perhaps, as I think (history is unclear as to which applies) is more plausible, chose to avoid it (in



the hope of not being observed in their movement by their enemy).

In the early stages of Hunter's and Heintzelman's divisions going into action their regiments were deployed in penny packets blunting their effectiveness. Having said that we should note that they did almost overwhelm the defence. The battle was close fought and casualties were similar on each side until the Union right flank routed. Had the Union won a convincing victory it is quite likely, if not probable, that the war would have ended in 1861.





## 2. OBJECTIVES

Renown Points (RPs) are awarded also to individuals for comparison with others of the same rank.

**TABLE 3.**  
**Federal Aims**

<b>UNITED STATES CRUSHING VICTORY IS 201-500% MORE VICTORY POINTS THAN THE CONFEDERACY. UNITED STATES 19TH CENTURY CANNAE 501%+ MORE VICTORY POINTS THAN THE CONFEDERACY.</b> It is supposed that a crushing US victory would probably have ended the rebellion. On-map routs x 0.3. <b>Exit VPs are forfeit unless there are men on map within 1,760 yards of the exit, marked "rear-guard."</b> If there are $\geq$ exited men x 0.2 exit VPs x 1.6. Troops may be earmarked rear-guard by acting brigade commanders	<b>U. S. VICTORY POINTS (VPs)</b> <b>Prerequisite <math>\geq 300</math></b>
Confederate infantry (cavalry) [gunner] {artillery piece} killed, captured or routed off map. On-map capture x 0.5.	3 (8) [30] {480}
Confederate colour party captured or routed off map (adjutant) [aide] {Brigadier-General or higher officer killed or captured} [Colonel killed or captured] [or Lt-Colonel killed or captured]	120 (10) [15] {150} [60] [30]
Ratio of US casualties (c) + prisoners (p) + missing (m) : rebel c+p+m is 2:3 or better	x 1.33
Ratio of US casualties (c) + prisoners (p) + missing (m) : rebel c+p+m is 2:4 or better	x 1.5
Exiting US infantrymen (cavalrymen) [artillery pieces] or {colour parties} by the south west face of the map (the Nokesville Road, Bristow Road, Independent Hill, Dumfries Road, Brentsville Road, Southern Railroad or Lonesome Road track).	8 (12) [2,000] {240}
Exiting US infantrymen (cavalrymen) [artillery pieces] or {colour parties} by the west face of the map (Warrenton Turnpike at Gainesville, Linton Hall Road to Bristow or Independent Hill at Gainesville).	2 (3) [500] {60}
Exiting US infantrymen (cavalrymen) [artillery pieces] or {colour parties} by the Glenkirk Road track	3 (5) [750] {90}
Exiting US infantrymen (cavalrymen) [artillery pieces] or {colour parties} by the Vint Hill Road track	4 (6) [1,000] {120}
US marginal victory 16% - 45% more victory points than the Confederate States.	
US victory 46% - 90% more victory points than the Confederate States. US Decisive victory 91% - 200% more VPs	
US crushing victory 201% - 500% more victory points than the Confederacy. US 19th Century Cannae 501%+	



# OBJECTIVE

Renown (casualties suffered to casualties inflicted) awarded individually is compared with others of the rank.

**TABLE 4. Confederate Aims**

<p><b>CONFEDERATE STATES CRUSHING VICTORY IS 201+% MORE VICTORY POINTS THAN THE UNION.</b> It is supposed that a crushing Confederate Victory would have yielded, say, a 40% chance of Washington D.C. falling by the end of August (and Maryland joining the Confederacy as a result). On-map routes x 0.4. <b>Exit VPs are forfeit unless there are men on map within 1,760 yards of the exit, marked "rear-guard."</b> If there are <math>\geq</math> exited men x 0.2 exit VPs x 1.6. Troops may be earmarked to the rear-guard by acting brigade commanders or higher.</p>	<p><b>CONFEDERATE STATES VICTORY POINTS (VPs)</b> <b>Prerequisite <math>\geq</math> 300 VPs</b></p>
US infantry (cavalry) [gunner] {artillery piece} killed, captured or routed (except if to the east x 0.4) off map . On-map capture x 0.6.	5 (8) [15] {240}
US colour party captured or routed off map (adjutant) [aide] {Brigadier-General or higher officer killed or captured} [Colonel killed or captured]   Lt-Colonel killed or captured	60 (10) [15] {150} [60]   30
Ratio of CSA casualties (c) + prisoners (p) + missing (m) : US c+p+m is 2:3 or better	x 1.25
Ratio of CSA casualties (c) + prisoners (p) + missing (m) : US c+p+m is 2:4 or better	x 1.5
Exiting Confederate infantrymen (cavalrymen) [artillery pieces] or {colour parties} by the southerly east face of the map on the Yates Ford Road to the old Fairfax Road to Alexandria road. To score the Confederates must exit men (A) in excess of the "relevance threshold" a number = US off map regiments (B) = $\{[(B) - 4]/6.5\} * 1,000$ . Once the threshold is reached all exits, including sub-threshold, score.	9 (13) [2,200] {260}
Exiting Confederate infantrymen (cavalrymen) [artillery pieces] or {colour parties} by the east face of the map (on the Little River Turnpike to Fairfax County, the Warrenton Turnpike to Fairfax Court House, the Braddock Road to Fairfax County, Pope's Head track or the Colchester Road to Fairfax Station or the Alexandria & Orange Railroad to Alexandria. To score these VPs the Confederates must exit men (A) in excess of the "relevance threshold" which is a number = US off map regiment $\{[(B) - 2]/6.5\} * 2,400$ . Once the threshold is reached all exits, including sub-threshold, score.	12 (18) [3,000] {360}
Exiting Confederate infantrymen (cavalrymen) [artillery pieces] or {colour parties} by the westerly north face of the map reading from east to west (on the Louis Mill Road heading north east. the Braddock Road heading north west or the Pleasant Valley track heading north. The	4 (6) [1000] {120}
Exiting Confederate infantrymen (cavalrymen) [artillery pieces] or {colour parties} by the easterly north face of the map (on the Centerville Road heading north or the Little River Turnpike heading north west). To score the Confederates must exit men (A) in excess of the "relevance threshold" which is a number = US off map regiments $\{[(B) - 2]/6.5\} * 1,600$ . Once the threshold is reached all exits. including	6 (9) [1500] {180}
CSA marginal victory 16% - 45% more victory points than the United States.	
CSA victory 46% - 90% more victory points than the United States. CSA Decisive Victory 91% - 200% more VPs	
CSA crushing victory 201% - 500% more victory points than the United States. CSA 19th Century Cannae 501%+	



### 3. PRIZES AND PROMOTION

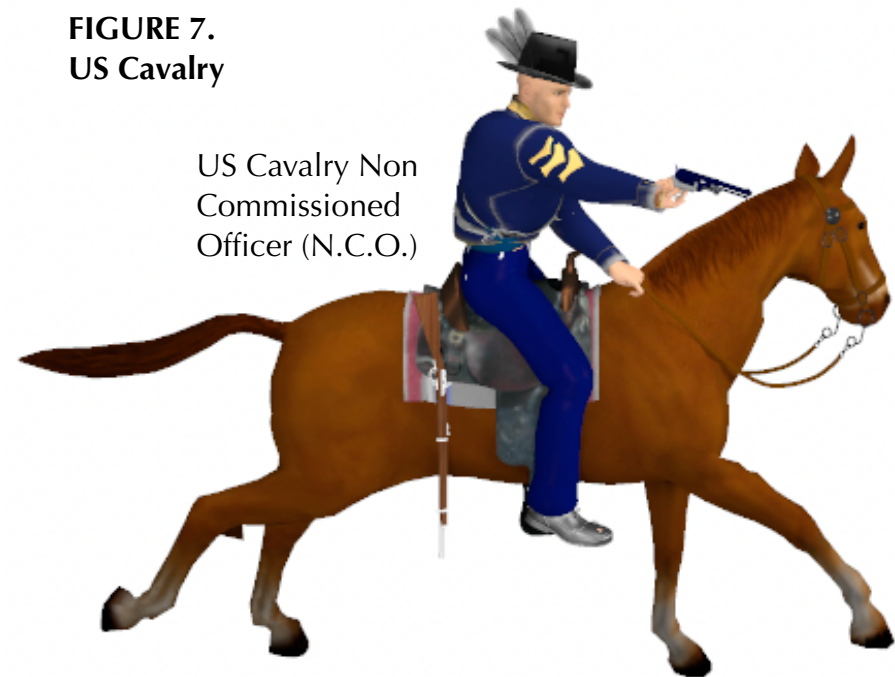
Each Federal brigade commander (excluding Colonel McCunn) must issue, close to the end of the battle, one commendation for a subordinate played-for-character, who he as a player is not himself playing for, within his chain of command. Each Federal division commander (excluding New Jersey Brigadier General Runyon) must put forward, for after action promotion, one such commended played-for-character, who he as a player is not himself playing for. Fifty per cent (determined by seniority) of those put forward for after action promotion will receive it. A player whose played-for-character at the time was both commended and promoted after the action in one game, if participating in the next game, if there is one, is granted first refusal as to which commander of a single step up, if desired, in rank to be. In addition he receives a (time limited) promotion bounty equal to 50% of the cost of having played his previous position, which he is eligible to make use of as a discount subject to his fighting again in the next iteration of the game.

Each Federal division commander must issue a commendation to one subordinate (brigade commanding) played-for-character. The commander-in-chief must recommend for after action promotion one such. A player, whose played-for-character is recommended for after action promotion to Division commander, if participating in the next game if there is one, is granted first refusal as to which Federal division commander to be. In addition, though subject to his fighting again in the next iteration of the game, he receives a promotion bounty (discount) equal to half the cost of his previous position.

The Federal commander-in-chief is permitted to issue a commendation to one played-for-division-commander. A player commended thus in one game, if participating in the next game if there is one, will have his bids, if he chooses to bid, in the auction to be commander-in-chief counted at the ratio 1.5:1. If the player bids 1.0 an uncommended rival will have bid 1.51 to win the auction. In addition,

**FIGURE 7.**  
**US Cavalry**

US Cavalry Non  
Commissioned  
Officer (N.C.O.)





though this is subject to his fighting again in the next iteration of the game, he receives a promotion bounty (discount) equal to 25% of the cost of his having played as a division commander in the event that he chooses to play again but at a lower or the same rank. An equivalent system operates for the Confederates (the two senior brigade commanders gain the same benefits as the Federal division commanders).

The number of after action promotions is halved (rounding down) for the army which is not victorious.

## **FAME (BEAUREGARDE v JOHNSTON).**

### **RENOWN**

Casualties inflicted and suffered within the player's command are quantified in the form of victory points (VPs). Ratios between losses of friendlies suffered (VPs) and losses inflicted (VPs) on the enemy yields a value expressed as a ratio. The higher the ratio of enemies to friendlies the better. The top 25% are declared to have earned renown while the second 25% are declared to have served honourably. Within those who earn renown the top 2%, second 2%, third 2% and fourth 2% garner military fame. Each of those who served honourably are mentioned in dispatches. Each of those who gained Renown are mentioned repeatedly in dispatches. The top 8% are said to have come to the attention of Major General Winfield Scott (in the case of Federal forces) and the three generals (Samuel Cooper, Joseph Eggleston Johnston and Robert Edmund Lee) and President Davis (in the case of Confederate forces).

## **4. CHARACTERS RELIEVED OF COMMAND**

Divisional (or for the Confederacy the two senior brigade) commanders (Bonham and Holmes) may never relieve more than one subordinate of his command (this could be a regimental or a brigade commander) in the course of the battle and moreover to do so must first obtain permission from (in the case of the Confederacy) Beauregard or Johnston (or any successor) or (in the case of the Union) the army commander (McDowell or any successor). Beauregard may never relieve more than two, and Johnston never more than three, more junior commanders of their command and the Union army commander may never relieve more than three. Beauregard needs Johnston's permission to relieve anyone of command.



The order of battle is updated once the officer above the dismisser has granted permission. This permission will be requested by a written dispatch that has to arrive or during a face to face conversation.

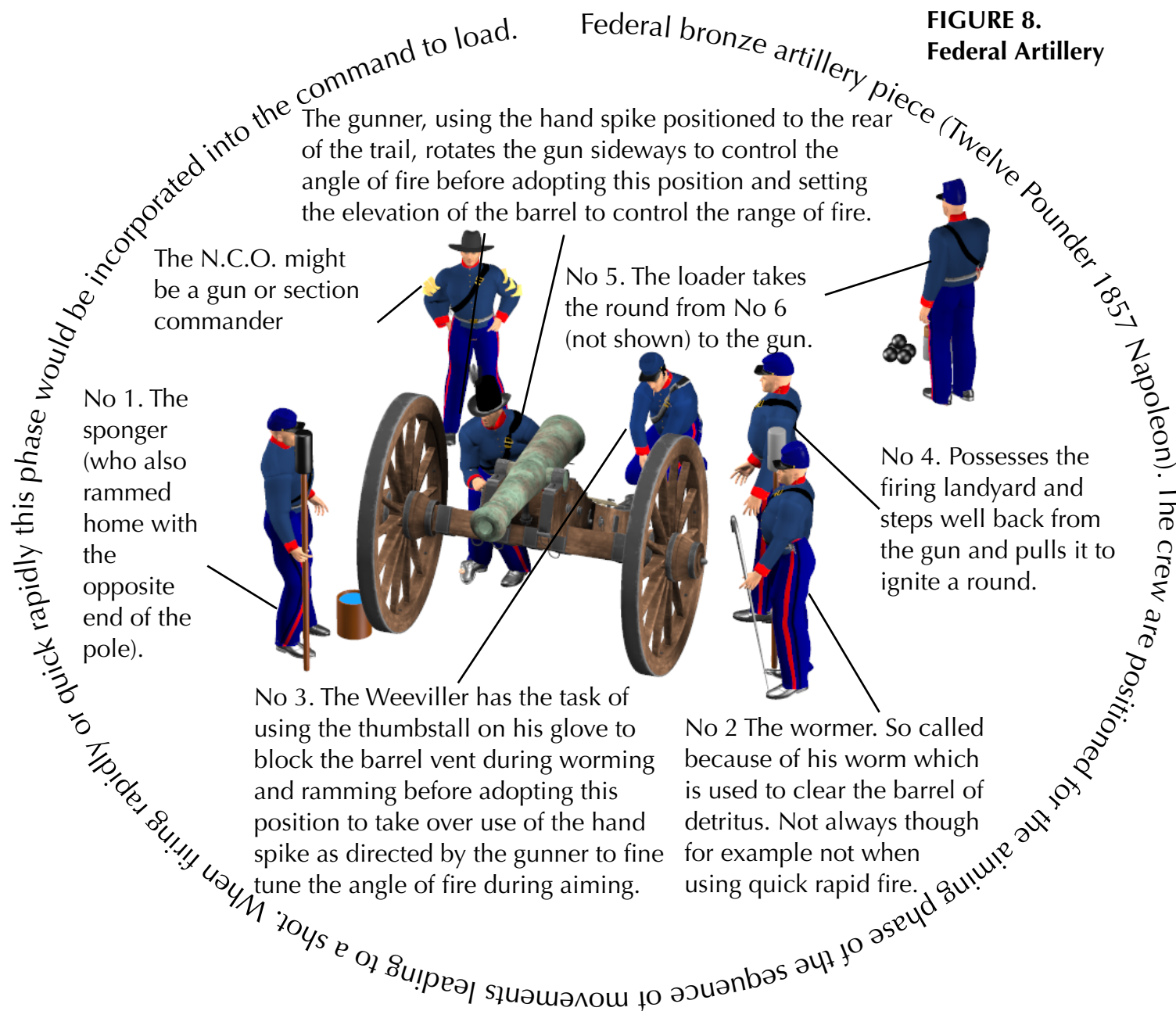
## 5. SPEECH IN THE BATTLE

We trust that players in a position to circumvent game restrictions on communications will refrain from so doing. The company reserves the right to take steps to police this matter.

When a new player takes on a played-for-character part way through the battle (perhaps because he joined the game as a reserve player) he will not be able to read inherited face to face conversations.

When played-for-characters are mounted and  $\leq 440$  yards apart they will be able to engage in face to face conversation. This presumes they canter to each other. When played for characters are dismounted and not more than 220 yards apart (in the same, adjacent or adjacent but one hexagons) they will be able to engage in face to face conversation. This presumes they jog to each other.

**FIGURE 8.**  
**Federal Artillery**





## 6. MOBILITY

You may issue orders to any friendly unit. If there is a commander, closer in the chain of command to the unit receiving your order, who is also physically closer then your order will not be obeyed (unless it is an override order) even if the closer commander issued no orders whatsoever. But if you are physically closer, even if you are not closer in the command chain, your order will be obeyed so long as commanders closer in the chain of command have not issued the unit any order whatsoever. However if a unit has received an order from a commander, regardless of how physically far away he is, who is closer in the chain of command the unit will follow the order within the chain of command even if you are physically closer and have issued an order too. The exception is if your order is an override order whether or not from a person closer in the chain of command.

Cavalry and artillery are unable to ascend or descend a ridge that is at an angle greater than 20 degrees (circa 2.2:1.0). For example, a ridge top 110 yards away with a 66 yard slope leading up to it could not be ascended or descended.

Infantry in column of fours may be ordered to march at double quick time (which is about 87% faster than normal), or quick time (which is 22% faster than normal), for  $\leq$  ten minutes without negative consequence. Potential negative consequences are cancelled by a halt to rest. Depending on how tired the men are it is not certain how long the halt needs to be. The immediate consequences of not resting (after movement at double quick time or quick time) are becoming fatigued or bone tired. Troops that are bone tired are liable to drop out (dropping out is a form of casualty which does not precipitate a moral check but does weaken a unit and count toward defeat) at an increasing rate the longer and faster you march the men without adequate rest. In the case of limbered artillery and cavalry units, dropping out effects horses not men. Initially horses are dropped out of the spare horses pool but after the team or horses pulling the artillery piece is reduced to half strength it has to unlimber.

In the case you press on with a double quick time march of fresh infantry beyond ten minutes there is a chance of fatigue. Once fatigued there is a similar chance of becoming bone tired.

Recovery from bone tired to fatigued will take five minutes most ●●●●● of the time but can be longer and this is true also of recovery from fatigued to fresh.






Infantry in line, extended line, column of platoons or column of sections may be ordered to force march at quick time. At quick time infantry go 22% faster than normal. Infantry in these formations cannot proceed at double quick time.

Cavalry in march column or limbered artillery may be ordered to quick time (though not double quick time) which in the case of cavalry means a trot, canter, trot (50% faster than normal) or, if they are on a track a canter (55% faster than cavalry moving on a track in a normal manner) or, if they are on a main road a trot (27% faster than cavalry moving on a main road



# MOVEMENT IN YARDS (and miles per hour) PER FIVE MINUTES (moving at normal time)



TABLE 5.  
Movement  
Chart I

	COLUMNS OF DIVISIONS, LINES OR UNLIMBERED ARTILLERY	COLUMNS OF PLATOONS, SECTIONS OR COMPANIES	COLUMN OF FOURS, LIMBERED ARTILLERY OR MOUNTED OFFICERS		
TYPE OF UNIT			Off-road, Dirt Track or Railway	Dirt Road	Road
Infantry 	195 (1.35 m.p.h.)	220 (1.5 m.p.h.)	330 (2.25 m.p.h.)	385 (2.625 m.p.h.)	440 (3.0 m.p.h.)
Cavalry 	320 (2.25 m.p.h.) [slowed walk]	355 (2.5 m.p.h.) [slowed walk]	440 (3.0 m.p.h.) [slowed walk]	525 (3.6 m.p.h.) [walk]	690 (4.7 m.p.h.) [walk, trot, walk]
Artillery 	55 (0.375 m.p.h.)	N.A.	275 (1.875 m.p.h.) [slowed walk]	490 (3.3 m.p.h.) [walk]	630 (4.3 m.p.h.) [walk, trot, walk]
Wagons 	N.A.	N.A.	275 (1.875 m.p.h.) [slowed walk]	440 (3.0 m.p.h.) [slowed walk]	550 (3.75 m.p.h.) [walk]
Mounted Officers & Colours 	N.A.	N.A.	495 (3.375 m.p.h.) [slowed walk]	575 (3.9 m.p.h.) [walk]	760 (5.2 m.p.h.) [walk, trot, walk]



# MOVEMENT IN YARDS (and miles per hour) PER FIVE MINUTES (moving at normal time)

TABLE 6.  
Movement  
Chart II

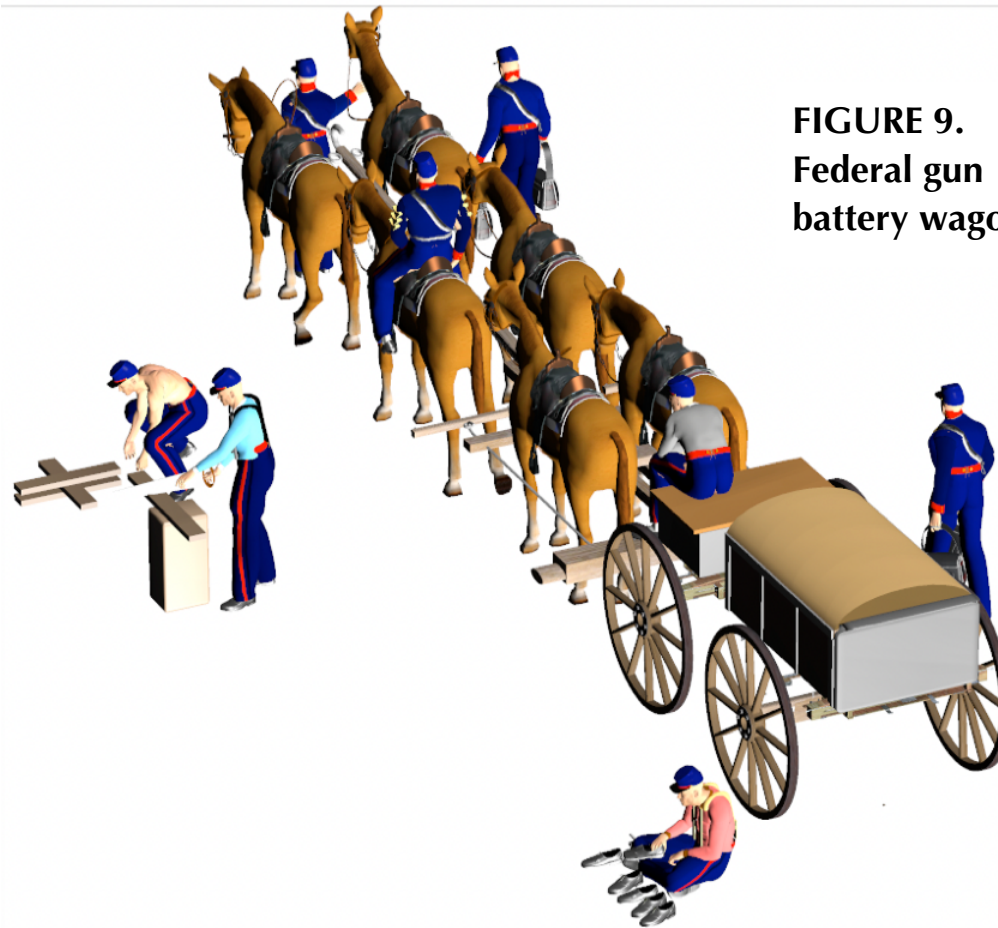
	LINE OR UNLIMBERED ARTILLERY	COLUMN OF DIVISIONS, COMPANIES, PLATOONS OR SECTIONS	COLUMN OF FOURS, LIMBERED ARTILLERY OR DISMOUNTED OFFICERS		
TYPE OF UNIT			Off-road	Track or Railway	Road
Dismounted Officers & Colours 	N.A.	N.A.	385 (2.625 m.p.h.)	440 (3.0 m.p.h.)	495 (3.375 m.p.h.)
Train 	N.A.	N.A.	N.A.	1650 Railway only (11.25 m.p.h.)	N.A.

Some units may be ordered to form line, march column or column of divisions (companies, platoons or sections), to limber or unlimber, to mount or dismount, to climb a watchtower, building or tree or to descend a watchtower, building or tree, to move with care or to follow a road].

- Movement in a direction greater than 60 degrees bearing from the direction of facing (e.g. facing W and moving NE, E or SE) is at half pace for infantry and quarter pace for others, except officers and colours who will turn to face the direction of movement without delay.
- Officers need 4 minutes to climb a watchtower and 3 minutes to descend a watchtower. Officers need 2 minutes to climb a two storey building (and check out the views) and 15 seconds to descend a two storey building. Officers need 5 minutes to climb onto the roof of a one storey building and 3 minutes to climb off it.
- Facing change is simultaneous with formation change if done within the same part of a turn. Soldiers can move from line to, say, march column and change their orientation while doing so at no extra cost of time.
- Congested units move at 30% time and heavily congested units at 16% time.



## United States gun battery wagon



**FIGURE 9.**  
**Federal gun**  
**battery wagon**

in a normal manner).

Like cavalry limbered artillery may move at quick time but not double quick time. In the case of limbered artillery it is at the walk, trot, walk or trot, walk, trot on a track or trot, canter, trot on a main road.




Orders to halt may be helpful if you want to leave units behind since without issuing a halt order units that straggle will tend to move up.

### Game videos

To see discussions of how to play the game please consult the Videos. These are available by clicking on Tools of the game at



# DEPLOYMENT-FORMATION CHANGES IN MINUTES (MOVING AT NORMAL TIME)

TYPE OF UNIT	MOUNTING & DISMOUNTING	FORMATION CHANGE ON FAVOURABLE TERRAIN (in addition to time taken for the movement involved in any deployment order. The element of movement, when deploying is at double quick time.)	TO CHANGE the FACING (BY ANY ANGLE OTHER THAN AN ABOUT FACE) OF COMPANIES MOVING "IN COLUMNS OF FOURS"	TO CHANGE FACING (BY ANY ANGLE OTHER THAN AN ABOUT FACE - which takes fifteen seconds) OF COMPANIES, BATTALIONS OR REGIMENTS NOT MOVING IN "COLUMNS OF FOURS"
Infantry and Cavalry 	Infantry N.A. Cavalry 0.25	2	Automatic and without time cost	Using the deployment button on the regimental (or company) menu, in conjunction with dragging and dropping the colours (or other guideon) onto the new location sets the location around which companies, battalions and regiments will deploy (including their facing and formation) which will in turn determine how long it takes.
Artillery & Wagons 	N.A.	2	Automatic and without time cost	
Mounted Officers & Colours 	0.25	Forthwith	Automatic and without time cost	

**TABLE 7.**  
**DEPLOYMENT-FORMATION CHANGES**

## 7. CONGESTION AND DECONGESTION

When infantry, cavalry or guns, absent an order to “avoid congestion”, march into each other at a junction of gravel roads, dirt roads or dirt tracks they are liable, in the absence of an officer of rank or acting rank of regimental commander or higher, to become congested. This can also happen off road when units intermingle as a result of movement.

Regimental commanders may “decongest” units that are within 55 yards. Commanders with two or three aides may “decongest” congested units that are within 165 yards but only if all of the commander and his aides are not carrying dispatches or attempting to rally. Where four or five aides are present, and not otherwise engaged, decongestion will extend to 275 yards out, and where six, seven or eight are present to 385 yards out and where more are present 495 yards out.

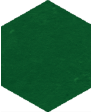

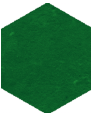
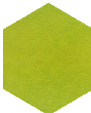
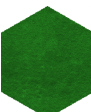
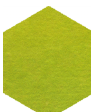
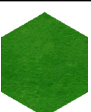
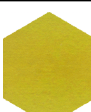








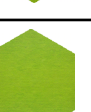
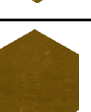
Battery commanders may decongest only guns and only up to a range of 55 yards. The exceptions are battery commanders, if they are of the rank of major or above who may also decongest either infantry or cavalry or guns or a mix up to a maximum of 165 yards.

When units are in March column they will, by default, be under orders to avoid congestion. Orders to avoid congestion mean that units will not enter hexagons where doing so would, in the absence of an officer with the ability to decongest, cause congestion. By the same token players may want to switch off avoid congestion in circumstances in which they wish to pass through friendly units at a right angle in the face of whom they would otherwise stop. Passing through friendly units off road who at different facings will result in congestion in the absence of a decongesting officer.

## 8. BLOWING BRIDGES

Prior to the start of the battle Beauregard may send an aides-de-camp to one bridge crossing Bull Run (there are four that can be mined the exception being the bridge Young’s branch), east and south of the Stone Bridge inclusive, to order that it be fitted with explosives. Once the aides-de-camp has occupied the a bridge hexside hexagon for thirty minutes the bridge is mined. Thereafter the closest friendly Major or higher rank who can, on any given turn, see it may order detonation (destroying the bridge) or he may order the explosives dismantled. If a bridge with explosives on is overrun by the Federals the option to detonate or dismantle passes to them, but only on the turn subsequent to the bridge having been overrun. This affords the Confederates the chance to detonate bridges with Federals on them. However if the Confederates do choose detonation within Federal Skirmishing screens there is a 14% chance the order will fail. In the case the Confederates choose to detonate bridges with Federal troops on them there is an 56% chance the order will fail. When a detonation occurs troops










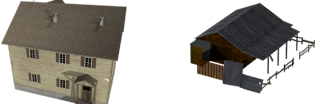
MOVEMENT EFFECTS are cumulative.	TERRAIN EFFECTS CHART	BATTLE EFFECTS are cumulative.
UNFEATURED TERRAIN	UNFEATURED TERRAIN	MOVEMENT USED. BATTLE EFFECT
 100-120 feet (c. 34 m) above sea level	 281-300 feet above sea level	1. None (as herein so below)
 121-140 feet (c. 40 m) above sea level	 301-320 feet above sea level	
 141-160 feet above sea level	 321-340 feet above sea level	
 161-180 feet above sea level	 341-360 feet above sea level	
 181-200 feet above sea level	 361-380 feet above sea level	
 201-220 feet above sea level	 381-400 feet above sea level	
 221-240 feet above sea level	 401-420 feet above sea level	
 241-260 feet above sea level	 421-440 feet above sea level	
 261-280 feet above sea level	 441-460 feet above sea level	<b>TABLE 8.</b> <b>Terrain Effects I</b>

**MOVEMENT EFFECTS are cumulative.**

**TERRAIN  
EFFECTS  
CHART**




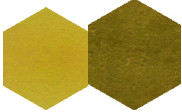
**BATTLE EFFECTS are cumulative.**

**TABLE 9.  
Terrain Effects**

TERRAIN	MOVEMENT	BATTLE EFFECT
 Dog trot	1	The melee casualties defending crumbling infantry inflict are 55%.
 Yankee house	1	“ “
 Church	1	“ “
 Water Mill	1	“ “
 New Jersey style barn	1	“ “
 Stone House	1	Melee casualties crumbling infantry inflict are 80%. Charging a stone house melee casualties inflicted are 80%. The benefit of shock is lost. Attackers firing into this terrain inflict 40% of normal casualties.
 School House	1	“ “
 Built-up terrain (two or more buildings)	1	The melee casualties crumbling infantry inflict are 70%. Attackers firing into this terrain inflict 50% of normal casualties.



**FIGURE 10.**  
**Terrain Effects**







MOVEMENT EFFECTS are cumulative.		TERRAIN EFFECTS CHART	BATTLE EFFECTS are cumulative.
TERRAIN		MOVEMENT USED.	BATTLE EFFECT
 <p>Large House</p>		1	Melee casualties defending crumbling infantry inflict are 50%. Charging a large house melee casualties inflicted are 70%. The benefit of shock is lost. Attackers firing into this terrain inflict 30% of normal casualties.
 <p>Large Church</p>		1	Melee casualties defending crumbling infantry inflict are 80%. Charging a large church melee casualties inflicted are 70%. The benefit of shock is lost. Attackers firing into this terrain inflict 20% of normal casualties.
 <p>Stone Built-up terrain (two or more stone buildings)</p>		1	Melee casualties defending crumbling infantry inflict are 90%. Charging a stone house melee casualties inflicted are 60%. The benefit of shock is lost. Attackers firing into this terrain inflict 20% of normal casualties.
 <p>A ridge is the hex-sides of two hexagons of different heights above sea level.</p>		The first 20 feet of ascent per 110 yards infantry speed is reduced by 20%, cavalry 24%, limbered guns 26%, unlimbered 35%. For greater ascents there is an exponent. The ascent effect is nullified by (gravel) road but applies in full on track. The nullification effect applies only to inclines of $\leq 1.125: 1.000$ .	The percentile increase in casualties inflicted during melee per 20 foot height advantage is 10% (so if the height advantage were 120 feet it would be +60%). Similarly taking fire with a 20 foot height advantage friendly casualties are reduced by 4%.

**MOVEMENT EFFECTS are cumulative.**

## **TERRAIN EFFECTS CHART**

**BATTLE EFFECTS are cumulative.**

**TABLE 11.  
Terrain Effects**

<b>TERRAIN</b>	<b>MOVEMENT RATE</b>	<b>BATTLE EFFECT</b>
 <p>River and Marsh</p>	<p>River impassable. Marsh: 50% Infantry 40% Cavalry 20% Artillery 66% Officers and Colours.</p>	
 <p>Wheat (4.5 feet high)</p>	<p>67% Infantry 67% Cavalry 67% Artillery. 85% Officers &amp; Colours.</p>	<p>Hit chance when firing small arms into x 0.95</p>
 <p>Corn (6 feet high)</p>	<p>61% Infantry 56% Cavalry 61% Artillery. 75% Officers &amp; Colours.</p>	<p>Hit chance when firing small arms into x 0.8 (cavalry x 0.95, artillery x 0.7)</p>
 <p>Orchard (21 feet high).</p>	<p>67% Infantry 57% Cavalry &amp; Artillery. 85% Officers and Colours. Can be climbed for an improved view.</p>	<p>Decrease in casualties inflicted firing from orchard -5%. Decrease in melee casualties inflicted when cavalry attacking into or out of -30%. Hit chance when firing into x 0.7.</p>
 <p>Wood (diverse heights)</p>	<p>50% Infantry 40% Cavalry 33% Artillery 75% Officers and Colours. Can be climbed for a better view.</p>	<p>Decrease in casualties inflicted firing from forest -5%. Decrease in melee casualties inflicted when cavalry attacking into or out of -40%. Hit chance when firing into x 0.5.</p>
 <p>Stream and Lake</p>	<p>Lake impassable. Stream: 80% Artillery, 90% Cavalry and Infantry.</p>	



**MOVEMENT EFFECTS are cumulative.**

## **TERRAIN EFFECTS CHART**

**BATTLE EFFECTS are cumulative.**

**TABLE 12.**  
**Terrain Effects V**

### **TERRAIN**

### **MOVEMENT RATE**



Wooden Bridge

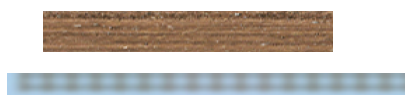
A wooden bridge enables crossing of rivers by infantry in columns of fours.



Stone Bridge

A stone bridge enables crossing of rivers by infantry in columns of fours or sections.  
A ford enables crossing of rivers by infantry in columns of fours, sections or platoons.

Dirt Track & Railroad



Ignore terrain on rail road and (except for steams) Dirt track. Infantry can cross fords only in columns of fours, sections or platoons.



Dirt Road

Ignore terrain on dirt road. Infantry 9% faster. A river crossed by a track or road is a ford. Infantry can cross fords in columns of fours, sections or platoons.



Watchtower  
(90 feet high). ●

To use the watchtower telescope (or binoculars from its viewing platform) the watchtower must be climbed.

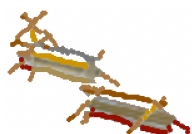
### **BATTLE EFFECT**



Field Works  
(hexsides)  
including  
8 feet high

Cavalry & Artillery: 20%, Infantry Ext. Line 60%, Line 50%, Col. of Fours or Sections 80%, Col. Platoons or Companies 70%

Hit chance (when firing into across the hexside fortified by the field works)  $\times 0.15$  for artillery and  $\times 0.2$  for infantry fire. meleé casualties inflicted by the attack at 40%.

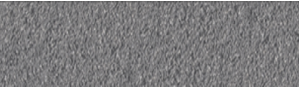



Fence  
(4 feet high)

Cavalry: 100 seconds. Artillery: 90 seconds, 60 second infantry in extend line, Line 90 seconds, Col. of Fours or Sections, 70 seconds, Columns of Platoons or Companies 80 seconds. Colour Parties 70 seconds. Officers alone 240 seconds, with infantry as infantry.

Hit chance when firing into  $\times 0.95$  when it is a pasture fence.  
Hit chance when firing into  $\times 0.80$  when it is a corn or wheat fence. ● ●

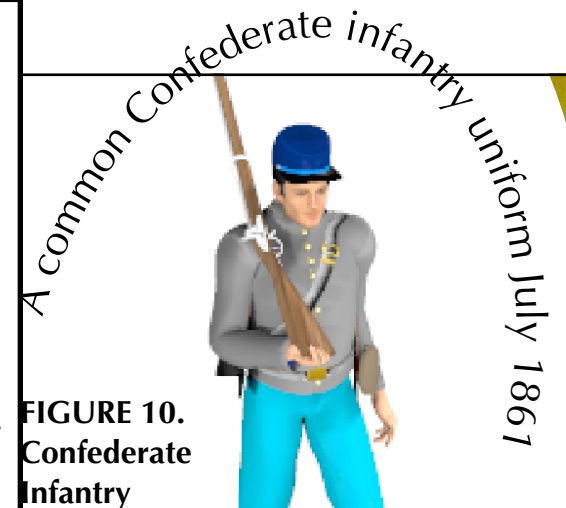


TERRAIN	MOVEMENT RATE	BATTLE EFFECT
 Gravel, including macadamised, Road	Ignore terrain on gravel road. Infantry 14% faster. Cavalry 22% faster. Limbeed artillery 25% faster. If a river is crossed by a gravel road it is a ford.	Not applicable
 Abatis	Cavalry & Artillery: Impassable. Infantry, with the charge order, move at 25% in the hex but in this case they dont clear the abatis and they become tired. Alternatively infantry stop at the abatis and start trying to clear it. One company will take circa 180 minutes but six would take 30 minutes	Hit chance (when firing into x 0.7 for artillery and x 0.7 for infantry fire, melee casualties inflicted by the attacker at 50%). For determinig rout from melee an abatis is treated as woods.

#### INSET I: NEWSPAPER POINTS

To represent the court of public opinion in the Confederacy, at 13:35 hundred pm and 20:35 hundred the Confederate Brigade commanders vote on whether they think Johnston or Beauregard is the better high commander and these votes tallied consitute Newspaper Points.

In 1861 Beauregard garnered the lion's share, in the public eye, of the credit for the outcome of First Bull Run. Joseph E Johnston, the fourth ranking full general in the Confederacy, generously recommended Beauregard for promotion to full general (increasing the total number of them to five) on 23-Jul-1861 and President Davis retroactively approved this recommendation with effect from 21-Jul-1861. Beauregard squandered the good will among his peers this promotion declared by publishing an article blaming President Davis for Bull Run not having been a greater victory. Compounding this self-promotion (and untruth), he alienated his superiors further by opposing (which was probably to Beauregard's credit) President Davis's strategy of not advancing out of the Confederate States. Beauregard proposed an advance into Maryland. The high command procrastinated over what to do with him until 14-Mar-1862 when Beauregard was made second-in-command to Albert Sidney Johnston's (the second ranking full Confederate general) Army of the Mississippi facing Ulysses Grant. His effect in this role was baleful and he was held to account for that being relieved of command in early June 1862. On 29-Aug-62 he was restored to command but in a coastal defence capacity (where he performed well). If, say, Jackson instead of Beauregard had been promoted after Bull Run and sent to the Mississippi perhaps Grant's Union army there would have been wiped out (it nearly was despite Beauregard) and the Union's greatest commander might never have risen further or become President.



**FIGURE 11.**  
**Confederate**  
**Colours**

A rebel N.C.O. carrying the Confederate July 1861 Battle Flag.



## 9. ORGANISATION

### Command Organisation

Units obey orders according to the chain of command. Senior officers cannot ignore the chain of command but they may override it sometimes.

Commanders may issue orders to any friendly units within gesticulating range (550 yards).

The Table of Organisation (T.O.) overleaf shows who commands whom. The T.O. is liable to flux. In particular those with the requisite authority may, within the specified limits, edit the T.O. For example, Federal Division commanders or Confederate senior brigade commanders may transfer regiments between their subordinate brigades.

### Reinforcements

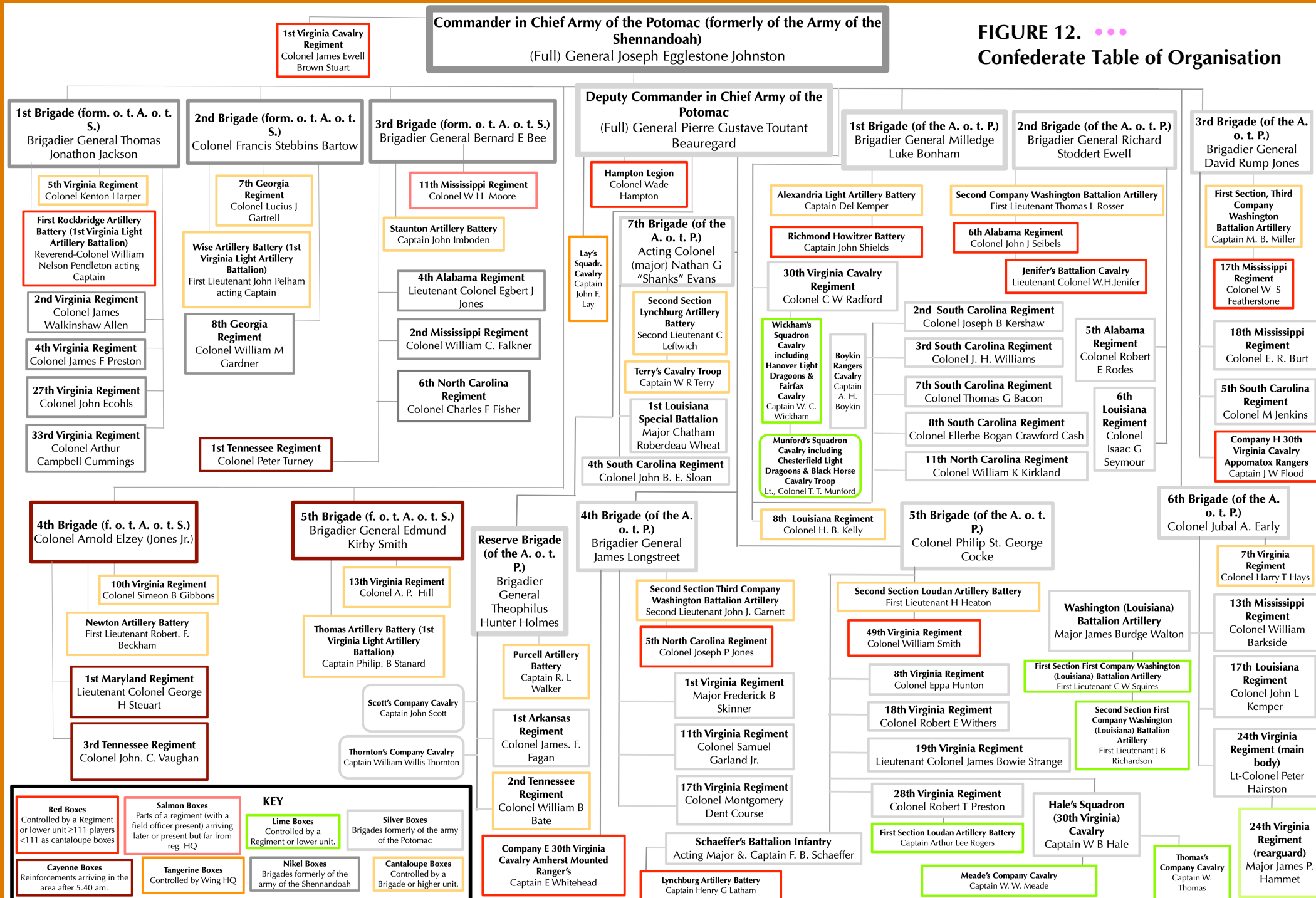
Depending on how the battle unfolds the Union may call up elements of its reserve division (this did not happen in real life). In this case the division commander (Runyon) and his subordinates have some flexibility as to where they enter the battlefield.

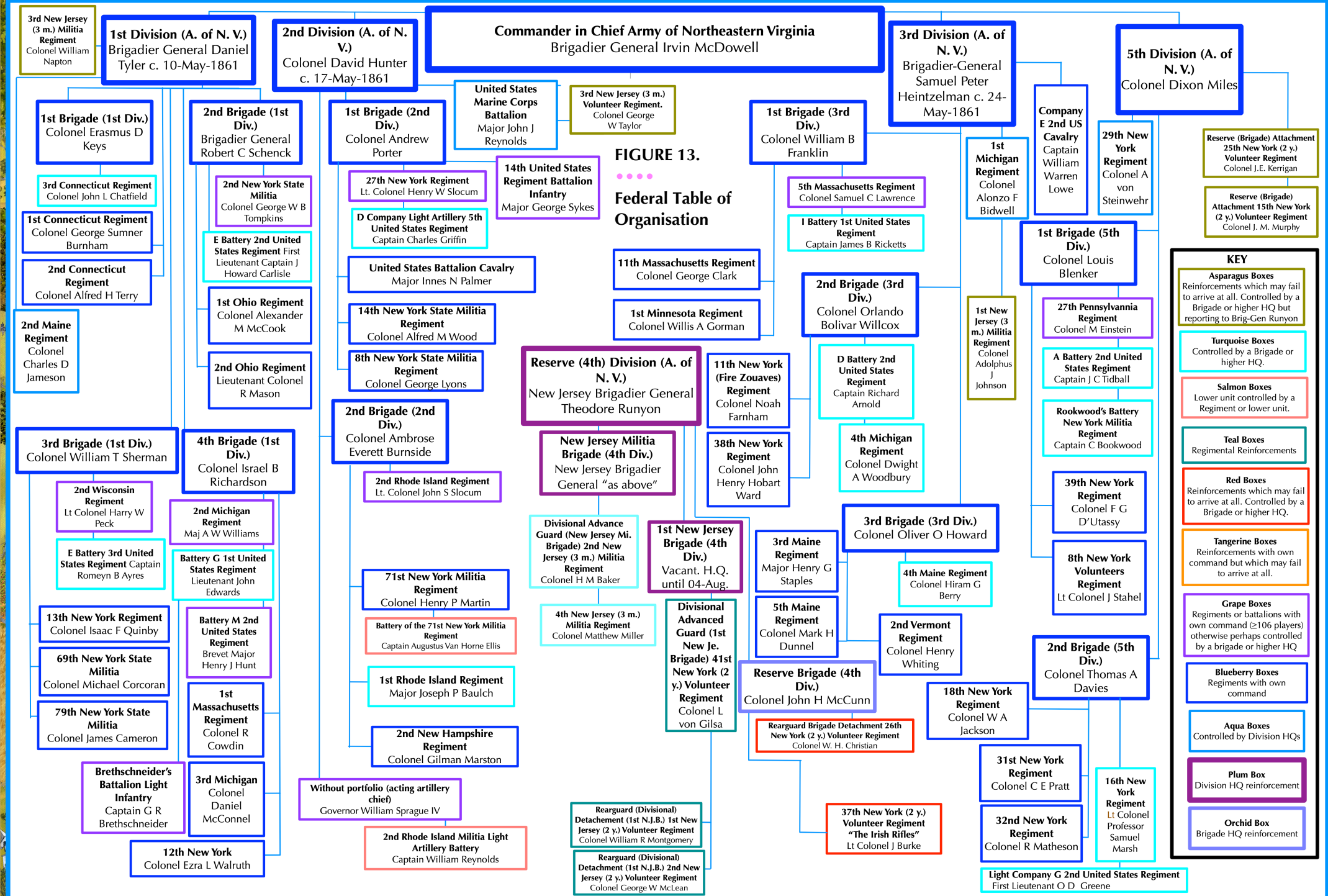
There is also a more certain Union reinforcement schedule which will be made known to the appropriate Union officer when the battle begins.

The pertinent Confederate commanders, who have flexibility as to where Confederate reinforcements disembark any trains they



**FIGURE 12.** ● ● ●  
**Confederate Table of Organisation**







**FIGURE 14.**  
**Confederate**  
**Line Officer**

A 3rd Lieutenant in a common Confederate infantry officer uniform July 1867



are arriving on, will be informed as to the timing of their arrival during the course of the battle not in advance of it.

In the event a unit moving by railway engine is compelled to by a combination of its engagement order on the one hand, and entry into an enemy skirmishing screens or close cavalry charge range on the other hand, or by the enemy being deployed across the railroad (having we presume taken up the tracks) the men on the train will automatically disembark.

The Federal reinforcement schedule may be invoked by a Confederate descent upon Fairfax Station.

## 10. COMMAND

### Range

Subject to you being able to see them (which is much harder in woods, corn etc) the range up to which direct orders may be issued to infantry, cavalry and guns is 440 yards. Commanders wishing to issue orders to subordinate units located more than 440 yards away must either move themselves or another played-for-character they control to within 440 yards.

Command range is reduced to 330 yards if the officer is not mounted.

### The Aide-de-camp and Dispatches

An aide-de-camp may carry dispatches to other played

for commanders. This is done by viewing the map through the played for aide's eyes. In order to prevent excessive (instantaneous telepathic) intelligence being gathered by the player when viewing the map through the eyes of an aide the aide's vision range is quite restricted. This will make it more likely that aides will get lost as indeed they often did in life.

### Stragglers

Units that are more than 660 yards from their regimental commander, their brigade commander, or their divisional commander or more than 660 yards from their regimental colour party and which have no movement orders including no order to hold position are termed stragglers. Stragglers may or may not move towards their regimental colour party or, if they are part of a group detached from the regiment, their guiding officer (if applicable). In any case no orders need, or, because they are out of sight, can, be issued to make them do so. The probability, each applicable turn, that straggling units will, of their own initiative, move up is 70 per cent. To move up on their colour party stragglers must, however, be within 1,320 yards. Stragglers will cease to move up as soon as they are within 660 yards of their most directly commanding officer or upon being within 660 yards of the colour party or guidon officer. If stragglers are further than 1,320 yards away from their regimental commander, or any other regimental commander in their brigade, or the brigade commander the stragglers become lost. Engage orders override the inherent tendency of stragglers, most of the time, to seek to move up. The inherent tendency of stragglers to move up represents the capacity of company commanders to show initiative. Characters wishing to leave troops behind somewhere may issue a hold position order. This will override the tendency of stragglers to close up.

### Conflicting orders, the Command hierarchy and Direct Commands

When units receive orders during a single turn both from commanders immediately above them in the chain of command and from commanders further up the command chain the orders of the closer in the chain of command are obeyed subject to the constraint that brigade commanders' orders may override four subordinate officer orders per five minutes (for this purpose an order to a colour party would count as one as well as to any combat unit). Any excess of conflicting orders above the permitted quota are made redundant. The exceptions are Bee, Bonham, Holmes, Jackson, Longstreet and Porter who may issue seven such overriding orders per five minutes, the Union Division commanders who may issue ten such orders per five minutes, Beauregard and Johnston, who may issue such orders to up to fourteen



units per five minutes and McDowell who may issue such orders to up to twenty units per five minutes.

When units receive orders from friendly commanders who are not their direct commander, or even in their command chain, and they have received no orders from their direct commander, or some other commander more or less directly above them, the orders from the friendly commander outside their command chain will be obeyed but only if he is physically closer to the unit receiving the order than other officers to whom the unit is more directly accountable. There is no limit to the number of such orders that may be obeyed. The exception is regiment wide deployment orders. These may only be issued by officers in the regiments chain of command. If a friendly officer not in the chain of command wants to issue multi-company deployment orders he may create a group of companies and issue a group wide deployment order. It is never possible to create such a multi-company group comprised by all the companies in a regiment. A sub-regimental multi-company group may never comprise more than circa 80% of a regiment.

Commanders sometimes play for additional characters, as laid down in the Table of Organisation.

### Relieving officers of command

Divisional commanders (or for the Confederacy Bonham or Holmes) may never relieve more than 1 junior commander of his command in the course of the battle. Moreover, to do so he must first obtain permission from (in the case of the Confederacy) Beauregard, Johnston or any successor or, in the case of the Union, the army commander

**FIGURE 15.**  
Confederate  
artillery  
spare horses



*Spare artillery horses 1861 Confederate.*

McDowell or any successor. Beauregard, Johnston or any successor may never relieve more than 2 more junior commanders of their command, in the course of the battle, and the Union army commander may never relieve more than three more junior commanders of their command in the course of the battle. The Union army commander and Johnston do not need the approval of a more senior officer to use their quota but Beauregard does need Johnston's permission.

When an officer is relieved of command (or becomes a casualty) his replacement will be determined automatically according to seniority. For example, if McDowell becomes a casualty he is replaced by the senior surviving Division Commander (Tyler, commissioned Brigadier-General 10-May-1861, first, Hunter, commissioned Brigadier-General 17-May-1861, second, Heintzelman, commissioned Brigadier-General circa 24-May-1861, third and Miles fourth) and if he is Johnston he is replaced by Beauregard. If Beauregard becomes a casualty he is replaced Bonham. Regimental commanders or their deputies are replaced by their second or third in command automatically but once there is no field officer (typically a major or higher rank) remaining the regiment falls out of command. The two senior Confederate Brigade commanders, in the event both Johnston and Beauregard became casualties are, Bonham, commissioned Brigadier General 19-Apr-1861, first and Holmes, commissioned Brigadier General 06-Jun-1861, second.

In the case of a dismissal the order of battle is updated once the officer above the dismitter has granted permission. This permission will be requested in a face to face conversation or by a written dispatch that has to arrive before it can be approved.

#### Transferring units from one commander to another

Divisional commanders, or for the Confederacy Bonham or Holmes, may transfer authority over directly subordinate regiments (for Bonham and Holmes this is those in the brigades of Longstreet, Jones, Early and Ewell) ●●●● but not companies, for example from one brigade to another. Army or deputy army commanders may also transfer authority over subordinate regiments but not companies, for example from one brigade to another or subordinate brigades from one division to another. Transfers by an army commander would overrule simultaneous transfers by a divisional, or for the Confederacy, a senior brigade commander.

Although companies may not formally be transferred between different commands in practice they can be grouped, or guide on, regiments that are not their own and also obey orders from officers outside their chain of command if



**FIGURE 16.**  
Confederate  
limbered battery  
wagon

Confederate battery wagon



they have no orders from their chain of command (and no one in their chain of command closer).

Individual officers may never be transferred by themselves.

A brigade may never be stripped of so many men (by the transfer of regiments) as to have less than three combinations of regiments and/or gun batteries.

A Union division may never be stripped of so many men as to have less than one brigade.

A brigade may never be reinforced by so many men as to have more than twelve combinations of regiments and/or gun batteries.

A Union division may never be reinforced by so many men as to have more than six brigades under it.

The brigades and divisions which you can transfer regiments, batteries and, if applicable, brigades to are any whether or not you can see their commanding officer.

Units can be transferred more than once so for example they could be transferred back again.



Units may not be transferred up or down the command hierarchy. For this purpose Johnston and Beauregard are considered at the same level. So regiments may not be attached directly to army or divisional commanders unless originally directly under a divisional or army commander in which case they could be transferred to someone of the same rank. For example, one infantry so-to-speak regiment (the Hampton Legion) begins the battle under the direct command of the Confederate Beauregard. These units could be transferred to Johnston but not to Bonham (a senior brigade commander) as the latter would involve movement up or down the hierarchy.

### Guiding companies on other companies (rather than on regimental colours or commanders)

Companies may guide on other companies instead of the regimental colours. When they do so they form groups that are composed of **six** companies or fewer.

## 11. RAILWAY ENGINES

In the event a train is halted, either by its reaction order in the context of entry into an enemy screen or cavalry close charge range, or because the railway is blocked by the enemy or by the decision of the senior officer on board the troops on the train will disembark ●.

Disembarkation is conducted in a sequence as follows (for infantry), queueing, alighting from the train, falling in, roll call, making coffee or handing out water, drinking, clearing up, assisting in the disembarkation of wagons and their mules. Embarkation follows a similar sequence in reverse except that it can be much slower if it involves waiting for a train.

Disembarkation time may be reduced by ten minutes if the regimental commander decides to leave the wagons (including the infantry ammunition wagon) behind.

If a troop carrying train has to halt, due to its reaction order being halt upon entry into an enemy skirmishing or sharp shooting screen, because it has placed itself within close charge distance (880 yards) of mounted enemy cavalry, because its commander has ordered it to halt or due to it being blocked by an enemy, and the train is charged by that enemy leading to a rout then instead of routing the applicable unit surrenders. Conversely if  $\geq$  one friendly company has completed disembarkation, or there is a friendly company anyway within 330 yards of the train, this conversion of meleé rout to surrender does not apply.



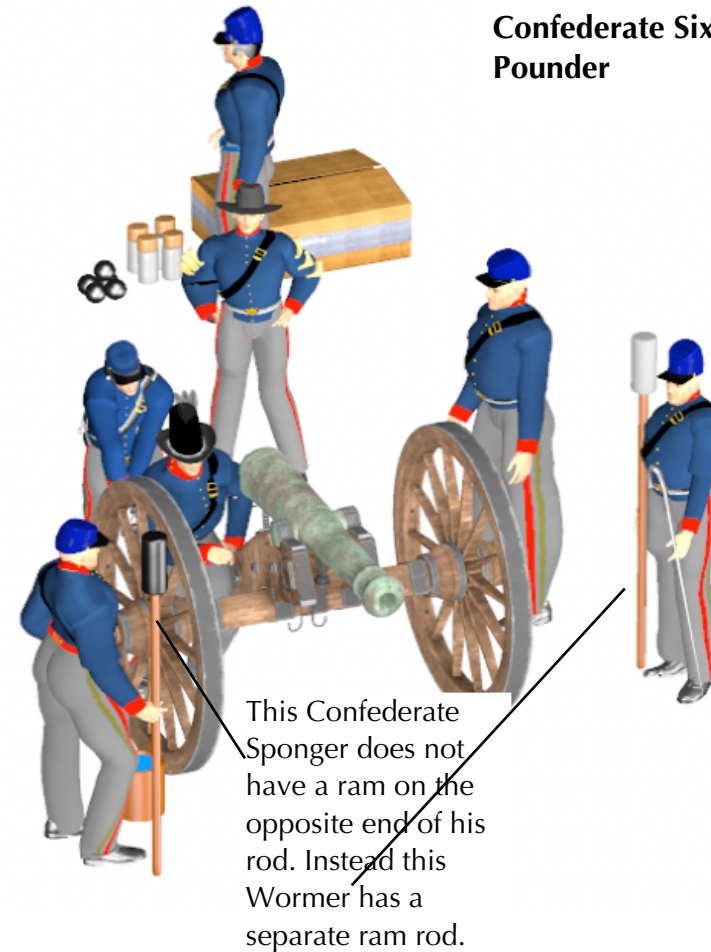
## 12. EXECUTION

### The five procedures for moving units

- Point and click [with the brigade (or company/group) menu open], and move the H.Q. (which will include any aides to hand), with the off-road or on-road option invoked [(individual companies, columns of fours, limbered artillery) with or without an optional way-point].
- By the drill [columns of sections, of platoons or companies, or columns by divisions - two companies side by side, or infantry or cavalry in line] where directions such as oblique right are set and distance too.
- Drag and drop (individual officers, colour parties, ammunition wagons, unlimbered guns and individual companies or groups when they are being deployed).
- Drag and trace (officers guiding on themselves, colour parties and ammunition wagons only).
- Deployment (on the colours, an officer or a guidon company) of groups and regiments.

Confederate States bronze artillery piece (Six Pounder 1841)

**FIGURE 17.  
Confederate Six  
Pounder**



Each of the five procedures have different characteristics:

- Point and click: This movement, which incorporates automatic changes of facing so as to maximise speed along the desired path, is suited to medium distance movement which might involve one change of direction but would not be highly convoluted.
- By the drill: This movement requires control of facing and is suited to line or section or platoon column formations not to faster columns of fours. It is for more precise control, particularly in the face of the enemy.
- Drag and drop: This movement is in a straight line from where you are to where you drop. It is suited to short range movement and precise intra-hex positioning.
- Drag and trace: This movement allows convoluted paths to be followed. It is suited to long distance movement including off road and beyond your line of sight but is not available to collectives such as regiments or groups.
- Deployment: this movement is for changes of formation and facing. The formation disintegrates and then reforms in the new position to which it has been ordered to deploy. When deploying men move at double quick time.

### Movement Orders

- Units may move, and face, in six directions and may deploy into different formations (for infantry or cavalry these are; line, column of fours, column of sections, column of platoons, column of companies and column of divisions - two companies beside each other). Guns may limber and unlimber and officers mount and dismount. Officers may also climb (in order to get a better view), and descend, watchtowers, houses and trees.
- Units ordered to avoid congestion will temporarily stop and wait until congestion clears before continuing their movement.
- When moving beyond the line of sight sticking to movement orders along roads reduces the risk of getting snarled up by awkward terrain.
- A unit that is either on a road (railroad or track) and ordered to follow it, or ordered to move to one and then follow it, will obey the follow a road order unless it is a group (or regiment wide) order where not all companies are in a hex containing a segment of the road/track path to be followed.
- Infantry and cavalry companies, guns, groups and regiments will alter their facing automatically, as they are moving, in order to maximise speed if they are moving in columns of fours or using road movement. This will not be



true of infantry or cavalry in Line or columns of sections, platoons, companies or divisions.

- **Hold Your Ground.** A unit with this order will not advance out of its immediate area neither as a consequence of melee or fire nor will it regard itself as a straggler when it loses contact with its command.
- Only infantry in columns of fours may march double quick time.

### Rally

An officer with a rally order may not at the same time conduct close communication nor use binoculars.

### Engage Orders

A unit's engage orders are triggered when it enters enemy skirmish or sharpshooter line range or cavalry close charge distance (880 yards) or by the entry of enemy units into the friendly unit's skirmish or sharpshooter line range or cavalry close charge distance .

There are two types of battle order, one type seeks to engage a specific target the other to react to whatever enemy approaches. In the latter case engaging, as a rule, the nearest. Battle orders also control the rate of fire to be normal, deliberate or rapid or, if you wish, limited to one volley.

- Select a target with



**FIGURE 18.**  
**1st Virginia**  
**Cavalryman**

the crosshair (available to mounted cavalry, dismounted cavalry, infantry or guns)

or

- Opportunity Fire.

### SELECT A TARGET (with crosshair)

On the company, group or regiment menu selecting the *Rifle, musket and bayonet* option invokes the cross hair on map as well as the *VOLLEY FIRE AND MELEE ORDERS* submenu.

In the case you use the cross hair to select a target, fire (or a melee attack) will commence at this range. Fire will track the target as it moves including if it changes range.

Targets may be changed. It costs infantry about 2.5 minutes (cease fire would have to be implemented before new fire was).

It is possible to target individual enemy units within enemy concentrations when you are firing individual companies, guns or groups. However regimental fire will target groups or regiments (if present) with fire spread across the whole part of the target which stands closer to the firing unit. This means that if you wish to focus fire on selected companies of an enemy regiment in, say, line with which you might be engaged frontally then you should reorganise your regiment into groups and order them to fire on a single target or you should break your regiment down into companies guiding on themselves and fire each company individually. The drawback of this more fiddly approach is that it will take you longer than delegating targeting in the knowledge that it will be spread out evenly across the enemy force (or at least that part of it closer to your firing men).

### OPPORTUNITY FIRE

To fire at targets of opportunity you set the favoured range, subject to it being 220 yards or less, adjusted for terrain and smoke effects, at which to do so. You will then fire on the first enemy to appear within this range. In this case enemy is defined as any unit in the predominant uniform of the enemy. Those who are confusingly dressed will not be fired on. Instead they have to be attacked with targetted fire. From this point matters proceed as with targeted fire except that the enemy target is not tracked as it moves. If it moves away and another enemy unit moves into the chosen fire zone then opportunity fire will switch to the nearer enemy if it simply withdraws or moves away opportunity fire will cease.



Red Oak mature mean ninety two feet (28 m) tall.

**FIGURE 19.**  
**Red Oak**



Fire sometimes misses its target only to strike some other target close by. Accidental casualties are affected by terrain so less likely to happen, for example, in forest. Case fire causes accidental casualties about 16% more often than fire by bolt, canister or shell. Fire by cannon ball does not cause accidental casualties in the way other fire does. Instead the ball bounces and this, in combination with deviation in its flight path may result in collateral damage.

### Hold your fire

This order forms part of the *Volley Fire and Melee Orders* submenu to the company menu as well as part of the *Regimental Engagement* submenu to the Regimental Menu. It can be useful when extricating yourself from a situation where your unit is 110 yards or less from the enemy and liable to default to volleying to defend itself with the perhaps undesirable consequence that its obedience to a movement order would be impaired. When units have an engagement order this will override the default self-defensive fire order. Thus in the case we imagine with, say, a movement order and a "Hold your

Although found, in game, at all altitudes of the battlefield the Red Oak is more common at low and mid altitudes. It is also found on all quarters of the battlefield but is noticeably more common in the northern part.

Although the average height of a Red oak is ninety two feet tall Red Oaks will reach a hundred and thirty eight feet in height on occasion.

We have set its favourite altitude at 200 feet above sea level.

Although, like the Sweet Chery and Southern Magnolia, it favours moist soil the competition near water courses can be greater and so Red Oaks tend to be denser when more than three hundred and thirty feet from water courses. Having said that close to water courses, and one hundred and twenty feet above sea level, Red Oaks do constitute one in six trees.

fire” engage order a unit, even one 110 yards or less from an enemy shooting at it, will be able to move away unimpaired (though taking casualties probably). Perhaps the obvious reason to “Hold your fire” or limit volleys is to conserve ammunition.

### Melée

When units are engaged in meleé it is not possible, for fear of hitting friendlies, to fire on them. However, multiple friendly units in a hex may be engaged simultaneously in both fire and melee combat. Enemy units may therefore fire into the hex so long as they target those enemy who are not engaged in melee. Enemy units with target of opportunity orders will favour targets that can be fired on. When enemy units, with volley fire orders, are moved right into a hex where melee is occurring and the preexisting melee resolves in favour of the friendly units the friendly melee unit will, if able, go on to attack another target with volley fire. The enemy with volley fire orders will always be able to fire in self-defence one round at 30 yards.

Civil War melée was primarily a psychological engagement. One or other side would usually rout before blows were exchanged. Bayonet charges were highly effective in the American Civil War. “When properly executed, it buoyed the morale of those who were delivering the charge, while it so intimidated the enemies in front that they instantly turned and fled, usually” (this word is not referring to fire received during the charge, but at the point of contact for hand to hand fighting or lack of it) without a casualty on either side”••. However, this tendency to not come to actual blows will not be so true in woods or built up areas (hexagons with more than one building on them). In this sort of place a meleé can get bloody.

- “Fix Bayonets and Charge” (infantry only). In the case a unit with this engage order is instructed to advance on an enemy it will press on to melee. Moreover, in doing so it will accelerate. The acceleration will depend upon the range at which the infantry began to “Fix Bayonets and Charge”. For example, from 660-550 yards the infantry will move for 1.5 minutes at common time (2.5 mph) before accelerating between 550-330 yards for two minutes to quick time (3.75 mph) prior to accelerating again for 1.25 minutes from 330-110 yards to double quick time (5.625 mph) while in the final 110 yards the infantry will accelerate to charge at an average 7.5 m.p.h. for 30 seconds (110 yards).

- “Fix Bayonets and Charge firing a single targeted volley” (infantry only). The charge will be at a specified target. It works as the order above except for the volley the range at which to fire may be specified.

- Selecting Opportunity Fire, on the *Volley Fire and Melee Orders* submenu, in conjunction with *Fix Bayonet and Charge* will result in charging a target of opportunity without firing a volley. This order will therefore cause units to move.

- “Draw Steel or Pistol and Charge a specific target” (only mounted cavalry). Cavalry in line or column ordered to “Draw Steel or Pistol and Charge a specific target” or to “Draw Steel and Charge a target of opportunity” will, when at anything from



990 yards (note that close charge distance for reaction orders is 880 yards or less) to (depending on where they are when they target it) 660 yards from their target, accelerate from a walk of 1.5 m.p.h. in line, or 2.25 m.p.h. in column, to a canter [of 3.0 m.p.h., in line and 4.5 m.p.h. (132 yards per minute) in column] while, when between 220-660 yards, they will accelerate to a gallop (of 7.8 m.p.h in line and 10.4 m.p.h., in column - including columns of platoons) and in the final two hundred and twenty yard approach to the target will accelerate to a flat out-charge at 16.6 m.p.h. in line and 21 m.p.h in column (753 yards per minute).

- “Draw Steel or Pistol and Charge a target of opportunity” (only mounted cavalry).
- “Advance on foot with Carbine on a specific target” (which may only be issued to dismounted carbine carrying cavalry and only so long as the target is within 1,100 metres - to close on more remote targets the cavalry must remount and approach closer on horse back first).

- “Advance with Carbine on a target of opportunity” (which may only be issued to dismounted carbine carrying cavalry).

When an artillery piece is ordered to “Fire” it tracks a target as that target moves through the artillery screen.

When enemy cavalry are closing for melée against friendly infantry ordered to “Volley” the friendly infantry will never have time to fire at 33 yards range or less.

### Movement Order Engage Order interaction

In the case units have engage and movement orders, but their engage orders cannot yet be invoked, they will begin moving while checking if the conditions are now correct for their engage order to be invoked. In the case engage orders are invoked they will, if applicable, affect the speed of movement and will be enacted. However, the path of movement will be remembered and once the engagement order has been fulfilled movement will continue along that path. The engagement order cannot alter your direction of movement or your facing in any way (except a little in a charge). It can speed you up, however, if you have a fix bayonets and charge order. To alter your facing and direction of movement you have to wait until the next turn and issue a deployment order or a change facing and/or formation order.

### Default Orders

Infantry, dismounted cavalry or artillery receiving an attack, who are under no battle orders, will automatically fire (using the most plentiful applicable ammunition if artillery), at  $\leq 110$  yards. Officers unsupported will automatically withdraw from formed enemy at about fifty yards, but also from a skirmish line at about 150 yards, with a 50% chance of being captured if the officer is more mobile and a 20% chance if he is equally mobile.

# MOVEMENT ENGAGE ORDER INTERACTION CHART (FOR A UNIT WITH BOTH TYPES OF ORDER)

**TABLE 14.**  
Movement Order Engage Order  
Interaction Chart

MOVEMENT ORDER	ENGAGE ORDER			
	Fix bayonets and charge	Volley at the first target of opportunity	Draw steel, or pistols, and charge a target of opportunity	Artillery fire at the first target of opportunity
Withdraw, Forward, By Left Flank, By Right Flank, Right Oblique, Left Oblique	The movement path is not altered but (frontal not withdrawal) movement into the enemy will be pressed home (including a shift in the final fifty yards to bring on contact with the enemy).	Movement carries on unaltered but volley fire is directed at the first target of opportunity with speed and fire effectiveness halved because the men are alternating movement and fire within the turn.	The movement path is not altered but (frontal not withdrawal) movement into the enemy will be pressed home (including a shift in the final fifty yards to bring on contact with the enemy).	
Hold your ground	The ground will be held and the engagement order will not occur.	The ground will be held but the engagement order will occur.	The ground will be held and the engagement order will not occur.	If the enemy is inside your preferred fire range, and you are unlimbered, your engagement order will occur.

## INSET II: RENOWN POINTS (RPs) AWARDED TO PLAYED-FOR-CHARACTERS FOR COMPARISON WITH OTHERS OF A RANK

At the end of the battle when victory points are scored for enemy routed off map these particular victory points when converted into renown points are awarded only to general officers. In the Union Army 50% are awarded to the brigade commander whose men inflicted the last rout on these enemies prior to their exiting the map while a further 50% are awarded to the Divisional commander to whom that brigade reports. In the Confederate Army 70% are awarded to the brigade commander whose men inflicted the last rout on these enemies prior to their exiting the map while a further 20% are awarded to whichever of the former army of the Shennandoah and the former Army of the Potomac the brigade belonged to on 20-Jul-1861. If the brigade belonged to the Army of the Potomac a further 10% are awarded to Boham or Holmes (determined at random) but if the brigade belonged to the Army of the Shennandoah then to Bee or Jackson (determined at random).



If the enemy comes within 110 yards this default order to fire will immediately come into effect but with no attempt to close the range further.

The default movement order is halt. The default marching order is null.

If unsupported (that is with friendlies more than forty yards away AND enemies closer than friends) officers are moving up to a formed enemy there will be a default, from 47 yards or closer, to attempt to change direction so as to escape and in this case the chance of so escaping will be 85% whether on foot or not (the rule is modelling confusion not the officers speed) but if the enemy is a skirmish line the chance falls to 50% if the officer is mounted and 10% if the friendly officer is on foot.

### Infantry Ammunition

Infantrymen are taken to carry fifty rounds, forty in the regulation cartridge box and, it is allowed, ten in sundry pockets.

## **13. PERCEPTION**

### Line of Sight

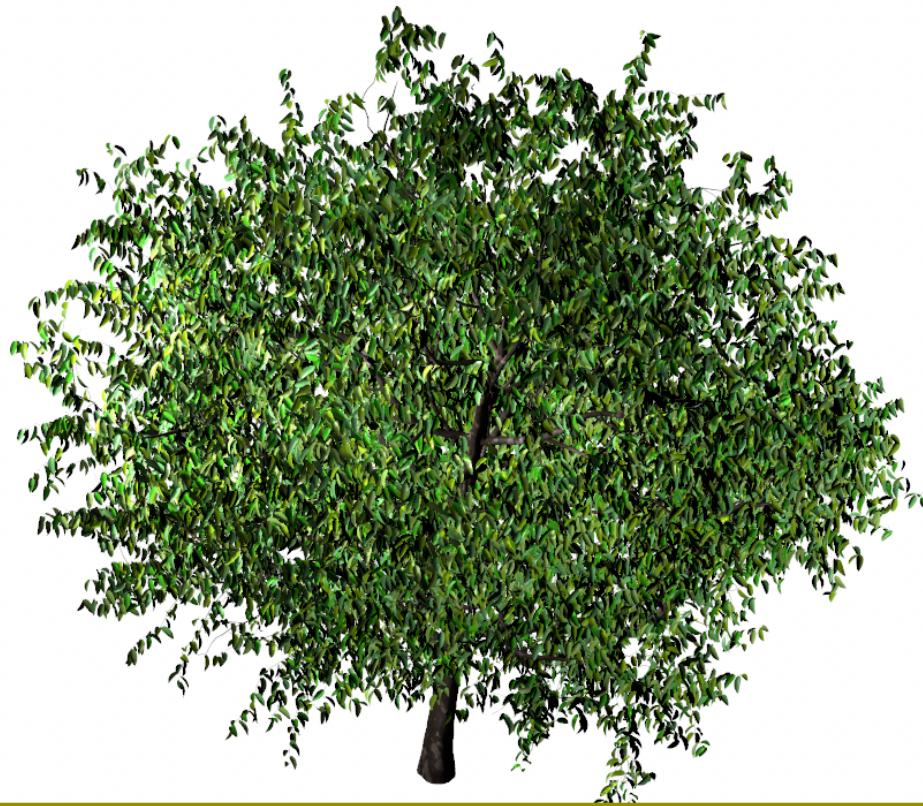
In clear air the range of unobstructed line of sight up to which you might see some glitter of arms if, like Captain John Imboden of the Staunton artillery, Captain Edward Porter Alexander Signal Officer of the Confederate Army, First Lieutenant Oliver D. Green of Light Company G of the 2nd United States Artillery Regiment or Frederick E. Prime an aides-de-camps of Colonel Richardson ●●● you have excellent eyesight, and are looking to the horizon (an option in game), is 2,341 yards (circa 21 hexagons - ideally this would have been 4,400 (but is not for technical reasons) but if you have average eyesight it is 1,760 yards (ideally this would have been 3,300 but is not for technical reasons). Through smoke it is 60% less. Some officers have terrible eye sight. For example, Colonel Francis Stebbins Bartow ●●●●. If you have terrible eye sight your vision is reduced, by one third, to 1,210 yards (circa 11 hexagons - ideally this would have been 2,200 but is not for technical reasons). Characters see in all directions within their line of sight except if they are using binoculars or a glass (telescopes-on-stands). Within those devices' narrower arc the range of sight is improved by the use of them.

Some played-for-characters are denied part of their line of sight. This is true of aide-de-camps and adjutants. The reason is that such characters will relatively often be ordered to far distant parts of the map (to carry dispatches). In order



Sweet Cherry mature mean thirty three feet (10 m) tall.

**FIGURE 20.**  
Sweet  
Cherry



to prevent excessive instantaneous intelligence gathering arising from such movements the average unobstructed line of sight for such officers is reduced by 80% so to a maximum of 660 yards. This could be enough to find their way about so as to, say, deliver written messages but not so much as to gain excessive intelligence. For the same reason, but to a lesser extent, played-for-regimental second-in-command's line of sight is reduced (but not if he is promoted into his commander's shoes) 70% to 990 yards. In this case a second logic justifying the reduction is that when you observe the battlefield through the eyes of a second-in-command what is being represented is not, precisely, you being him too but instead, partially him reporting to you. The prevailing range is a compromise between different considerations. An exercise of artistic judgement recognised as not ideal. Although it would be better if the second-in-command was a separate player, the fact he is not played for by someone else is something you may be

Wooded areas, as viewable on the battlefield, are composed of a mix of tree species with the mix varying by distance from water, height above sea level, quarter segment of the map and a random element.

In reality the species mix will also be influenced by soil, drainage, predation and other factors. We take three variables (and a random element) in order to give a potentially distinguishable look to terrain that is close to a water course and terrain that is higher or lower and to base this distinguishable look loosely on the geography of the natural vegetation in north east Virginia.

For example, the sweet cherry trees that we have rendered on the battlefield are mostly found, in game, within three hundred and thirty feet of water courses all over the map (which won't be precisely correct although it is botanically correct that Sweet Cherry trees are hydrophile in favouring moist ground). Sweet Cherries also favour well drained ground so our sweet cherry trees are most common very close to water courses but on ground twenty feet above the water course (where they constitute 12% of our characteristic species mix). We position Sweet Cherry trees only up to one hundred and sixty feet above sea level (which is a compression, for artistic purposes, of their actual height range).



thankful for if you become a casualty or prisoner.

A unit may fire on a target only if it is within its line of sight. The exception is howitzers. Howitzers may fire at targets not within their own line of sight but within the line of sight of any officer with authority over the guns so long as said officer is within 550 yards of the firing Howitzer. Such indirect fire always misses the first time a round is unleashed and accuracy is 50% of what it would normally be the second time a round is released (direct artillery fire, on a particular target, also improves over time from 20%, to 50% to 80% to 110%) but thereafter howtzer indirect fire proceeds (unless the target is switched) 75% as effectively as normal so long as the line of sight through a friendly officer is maintained.

Line of sight is obstructed by terrain and some things in between a unit and the object of its perception. Possible obstructions to line of sight are ridges, forest, densely built upon terrain (as indicated by more than one building in a hexagon or the presence of a church), and other combat units. An obstruction of a certain height blocks vision to units behind it where the units behind it are upon terrain lower than the line of sight passing from the viewer to the top of the obstruction.

Obstructions are assigned heights of 2.2 yards (units), 6.6 yards (urban terrain), 38.5 yards (forest), 6.6 yards (one terrain step), 22 yards (watchtowers), 6.6 yards (two storey buildings) and 5.5 yards (one storey buildings), 2.2 yards (corn) and 1.3 yards (wheat). Only horses, terrain and (but only for officers) watchtowers, built on terrain, two storey buildings, one storey buildings, and forest (in the case of trees climbed) count towards raising the height of the target (in the case of forest by 19 yards) or viewing units. Horses raise the viewing height of officers by 1 yard. Two storey buildings, one storey buildings and watchtowers do not block line of sight.

The line of sight to units in the same hex as an obstruction is not blocked by the obstruction - however, the range at which such units are visible is reduced by 25% in the case of built upon terrain, and 66% in the case of forest and 50%, for infantry and dismounted officers only, in the case of corn (but not wheat). Other obstructions do not reduce the range in this way. The line of sight to infantry, or officers who are dismounted, standing in corn is not reduced if the viewer is on higher terrain. The line of sight to infantry, moving through corn is not reduced unless they are in line formation.

At extreme far range, defined as 1,650-2,200 yards with the naked eye and average eyesight, all that might be (4% per five minutes per potentially observed unit) seen of infantry, cavalry and guns is the glitter of arms. At ultra extreme far range, defined as 2,200 to 3,300 yards, the likelihood of seeing glitter of arms is halved (to 2%). Canons have discernibly different glitter to small arms. One might (2%-4%) observe more than one glitter at a time. At far range (with the naked average eye), from 1,320 yards to 1,650 yards, it will be possible to make

out the number of formations but no further details about them. This lack of detail of perception does not preclude artillery firing upon far targets. At near range (with an average naked eye) from 660 yards to 1,320 yards it will be possible to make out not only the number but also the type and facing of a formation but not its identity. At very close range (with an average eye) from 220 yards to 660 yards it will be possible to observe uniforms but only if they are prominently coloured●●●●●. At point blank range ( $\leq$  circa 220 yards with the naked eye) it will be possible to observe the enemy's state of moral and uniforms even if they are drab. Some units, those whose uniforms are confusing, may be impossible to identify at any distance. It is possible to fire at one's own side by mistake.

When enemy units are behind (defined as the rear 120 degree arc) the direction in which a combat unit is facing the friendly unit's reaction orders may not be executed.

Some officers, such as Bartow, have bad eye sight and their vision range will be a third less.

### Smoke

Average wind speed in Prince William county in contemporary (2022) July is circa 3 m.p.h. But on the morning of 21st July the air *"was magically still."* Porter Alexander (N.B. Captain, Chief Engineer and Signal Officer of the Confederate Army of the Potomac w.eff. 03-Jun-1861) *"would later say he never again in his life saw such a phenomenon. No breezes wafted the smoke away from the battlefield, so it hung like a London fog between the two sides, before imperceptibly rising above the treetops. (The same was true of the road dust, stirred by marching feet, which slower ascended higher and higher into towers, hundreds of feet high, giant mesas hovering above the troops - in the process, revealing their presence and their movements.)"*●. The prevailing wind on the day of the battle is taken to have been south westerly moving on average, though with variability, in the morning at 0.375 m.p.h. (55 yards per five minutes) accelerating to 1.875 m.p.h in the afternoon. Infantry fire smoke is taken to have a duration of 15 minutes and so drifts about 165 yards before dissipating and artillery smoke has a duration of 25 minutes and so drifts about 275 yards before dissipating and dust has a duration of 20 minutes and so drifts about 220 yards before dissipating in the morning but in the afternoon these drifts rise to circa 825, 1,375 and 1,100 yards.

### Binoculars and Telescopes-on-Stands

Officers using binoculars can see further and better albeit within a narrower field of view, but when they are doing so may not move (for five minutes). However they may issue orders. Officers using binoculars see only within the 180



degree arc into which they are facing. Officers using telescopes-on-stands can see very much further and better but when they are doing so may see only within the 60 degree arc into which they are facing. Telescopes-on-stands are found only on the Confederate observation hills (illustrated by watchtowers). Officers using telescopes-on-stands may not move (for five minutes) but they may not issue orders.

### The Signal Corps

The three commanding officers of the Confederate signal corps, one captain (Edward Porter Alexander) and two signals officers, are each deployed on one observation hill (indicated by a watchtower). They are permitted to send messages by flag to each other. The maximum length of these messages is twenty five characters. A message takes five minutes to transmit. Signal corps

Southern Magnolia mature mean seventy nine feet (21 metres) tall.

**FIGURE 21.**  
**Southern**  
**Magnolia**



Unlike most north east Virginia trees the Southern Magnolia was probably in (white) flower, as above, at the time of First Bull Run or Manassas. The Southern Magnolia is a hydrophile and so is to be found close to water courses but it tends not to survive flood and so we do not place them at the same height as water courses but rather only at least twenty feet above them. In the context of the natural geography of the Bull Run river area this means at least one hundred and twenty feet above sea level. We have the Southern Magnolia favouring low lying land and so like the Sweet Cherry never (for artistic reasons) more than 160 feet above sea level. The Southern Magnolia is only to be found in the south east quarter of the battlefield in the lower terrain towards the Occoquan River.

Under our fanciful but not fantastical distribution rules Southern Magnolia are found within three hundred and thirty feet of the water courses of the south eastern quarter of the battlefield and between one hundred and one hundred and twenty feet above sea level Southern Magnolia account for 24% of trees in woods.



messages may be sent only between observation hills. At each observation hill there are, additionally, two aides (a sergeant of signals and a private signaller) who may be dispatched by the signals officer (or any higher ranked officer on the tower) with written messages. Signal Corps officers are placed permanently under the direct command of the played-for-Brigade or played-for-Division Commanding Officer who is positioned closest to them at the start of each turn.

The two officers of the Federal Signal Corps are the Signals Officer Major A. J. Meyer and his assistant signals officer Major Malcolm McDowell. These join the army as reinforcements after the battle has begun.

### The small scale map

The small scale map may be invoked from the top left of the game window. The compass acts as a toggle. With the toggle not invoked you see the initial dispositions of all the brigades in your army a few minutes before dawn (05:40 hundred hours). With the toggle invoked you see the present position of the commands close to you in the command chain.

### The sound of guns

On any turn when skirmishers fire the crackle of small arms will be heard in respect of an approximate direction (North West, North East, South East or South West) and an approximate distance "some miles off" or "close - less than a mile away" or "very close - less than 550 yards away". When there is more than one point source for noise only the closest will be reported on. On any turn when volleys are fired the crash of small arms will be heard in respect of an approximate direction (North West, North East, South East or South West) and an approximate distance "some miles off" or "close less than a mile away" or very close less than 550 yards away. On any turn when artillery are fired the sound of guns will be heard in respect of an approximate direction (North West, North East, South East or South West) and an approximate distance "far off" (some miles) or, not far off (a mile or so) or "close" (less than a mile) or very close (less than 550 yards) away.

### Drums and bugles

There are eleven aural commands ••; •1 Forward, •2 right oblique •3 move right ("by right flank"), •4 left oblique •5 move left ("by left flank"), •6 Hold your ground, •7 Lie down, •8 Withdraw, •9 Fire, •10 Rally, •11 Deploy into line guiding on the colour party, an officer or a company. In the case of infantry, upon their being selected and subject to their having been issued, these orders will be sounded by the drums. In the case of skirmishers and sharpshooters, guns and cavalry by the bugle. In addition after fire has completed the drums or bugle will sound; •12 Cease Fire. •13 There is also a drum and bugle sound for units moving faster than normal speed and •14 another for units ordered to charge.



## 14. INFANTRY SKIRMISH LINES AND ARTILLERY SCREENS

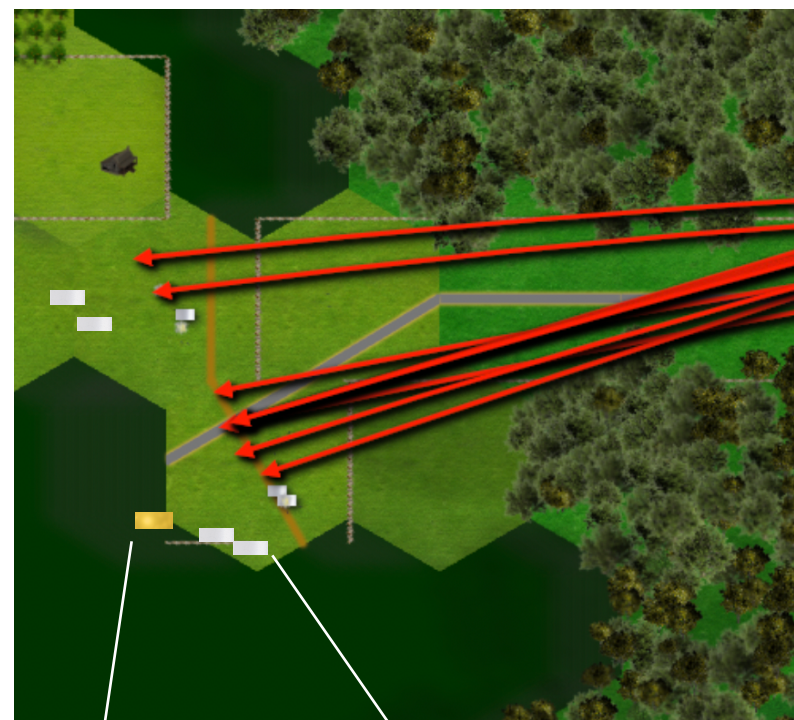
A musket armed infantry unit may extend a "skirmish line" deploying it, with a 20 yard variation either way, at 150 yards out (220 yards out if it is a mounted cavalry skirmish line). This takes one minute. A rifle, or rifled-musket, armed infantry unit extends a "sharpshooters line" deploying it at also at 150 yards out. Each company may commit up to three quarters of its men to the skirmishing line or, in accordance with its weaponry, sharpshooting line including none if it prefers. When skirmishers or sharpshooters are deployed at least one section (each company has four sections) of the company stays behind acting as an anchor to the line while one of, two of or all of the other sections form a line, of a single rank deep, spread out over circa one hundred and fifty yards per section (with a modest possible sideways variation against the regulation 5 yard gap between men, a plus or minus five yard gap fore or to the rear and the regulation 5-40 yard gap between units of four, "comrades of battle"). These skirmishing or sharp shooting lines project a semi-circular screen whose base runs along the line of men and whose outermost point is circa 330 yards ahead of the centre of that line you see on the map, in the case of musket armed skirmishers, and circa 550 yards ahead in the case of rifled-musket or rifle armed sharp shooters.

Skirmishers or sharp shooters guide on themselves but move (though don't deploy) with their regiment or their group (so long as it is led by an officer). So one might want to recall skirmishers before regimental deployment.

The probability of an enemy being hit, if within the semi-circle whose base

Artillery have fired arcs (red)  
PAST ARCS

**FIGURE 22.**  
Past Artillery  
Arcs I



Glitter of Arms  
(artillery barrels)

Glitter of Arms (infantry bayonets)

Glitter of arms is all you see when infantry and canon are within perception range but at extreme distance. As you can see a glitter of arms can be targeted by artillery (or indeed infantry in certain situations). There is no glitter of arms from cavalry.



is the skirmisher or sharp shooter line, is the ordinary chance of being hit by the weapon,  $\times 0.25$ ,  $0.5$  or  $0.75$  depending on whether there are one, two or three sections deployed and an additional  $\times 0.7$  if the target is in one of the outer 45 degree quadrants of the screen but  $\times 1$  if it is within the inner two 45 degree quadrants of the screen.

Skirmishers and sharp shooters use deliberate fire by default which raises the chance of being hit, as compared with ordinary fire, (from  $0.25$ ) to  $0.3$ , (from  $0.5$  to)  $0.7$  or (from  $0.75$  to)  $0.9$  if firing into the middle quadrant of the screen.

When skirmishers and sharp shooters fire if there are enemy officers within their firing semi-circle a significant portion of the men ( $35\%$ ) will concentrate their fire on those officers while if there are enemy artillery within their screen similarly ( $30\%$ ) of them will concentrate their fire on the gunners so that if both types of target are within the screen probably a mere minority of the skirmishers or sharp shooters will be aiming at ordinary infantry.

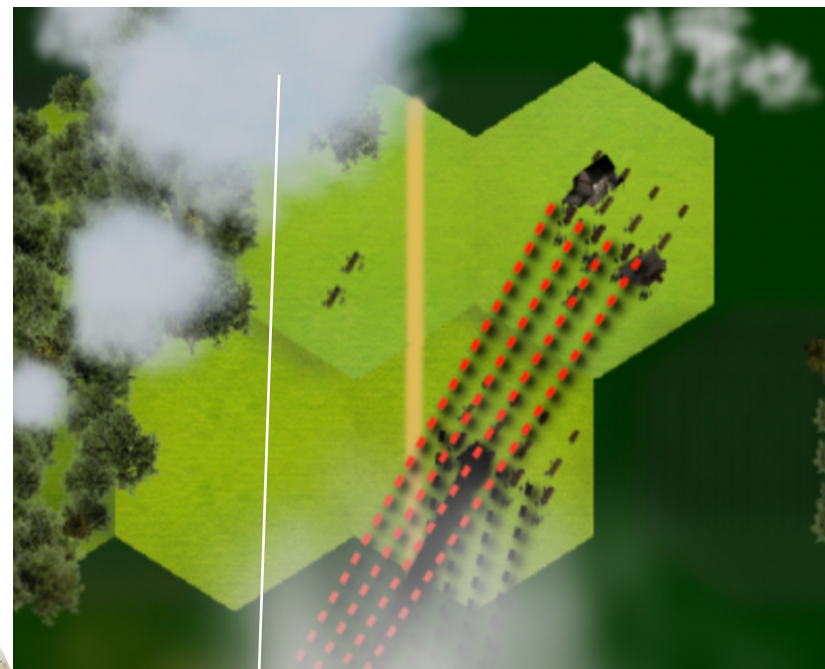
If, in a previous turn, a unit having received enemy fire defaulted, because it did not have an order, to firing back at 110 yards this does not inhibit your ability on the current turn to issue new movement (deployment) or engagement orders.

In addition, for every hexagon passed through within range of hostile skirmishers (deployed by musket armed infantry) or sharpshooters" (deployed by rifled-musket, rifle armed infantry or rifled carbine armed dismounted cavalry) hostile fire is received. Fire from skirmishers and sharp

**FIGURE 23.**  
Past Artillery  
Arcs II

Artillery have fired (but lost the target) arcs (red dotted)

PAST ARCS



Gunpowder smoke  
(severely impairs vision)

The dotted red arrow-arc means that although a gun had a target within the last five minutes it lost it. It will need a new target to fire again.



shooters is never received from units that are routing or that are engaged in melée not is it received from mounted cavalry but it will be received from dismounted cavalry (as well as infantry). Skirmisher fire and Sharp Shooting is normally sustained at a rate of one volley per 120 seconds but skirmishers and sharp shooters may also fire "deliberately" at a rate of one volley per 240 seconds with a benefit of greater accuracy.

A US M1841 six pounder smoothbore gun casts an "artillery screen" into the hexagons ahead, up to a range of 1,320 yards (12 hexagons), a US M1841 smoothbore howitzer up to a range of 990 yards (9 hexagons), a M1860 3.8 inch James gun up to a range of 1,430 yards (13 hexagons) a US M1857 Napoleon twelve pounder smoothbore up to a range of 1,540 yards (14 hexagons), a M1860 3 inch Parrot up to a range of 1,650 yards (15 hexagons), a M1860 3.67 inch Parrot up to a range of 1,760 yards (16 hexagons) a M1861 Ordnance Rifled gun up to a range of 1,870 yards (17 hexagons) and a M1860 4.2 inch 30 pounder Parrot siege gun up to a range of 3,300 yards (30 hexagons). To cast "artillery screens" artillery must be unlimbered. Limbered artillery cast no screens.

Units will not stop upon entering an enemy "artillery screen" but in carrying on without stopping they are subject to "artillery fire" so long as the enemy artillery have been authorised to conduct attacks on targets of opportunity. The friendly units may continue with their move but the cycle of exposure to counter-attack will be repeated for so long as they are moving through the hostile "artillery screen".

Friendly units negate enemy screens if they are blocking the enemy's line of sight (as they would not be if the enemy had the benefit of elevation). So that, as long as it was behind (but not through) a line of one's own forces one may move directly across an enemy front without being subject to skirmish, sharpshooting or artillery screen fire.

"Skirmish line fire ranges", "Sharp Shooter line fire ranges", "being within close charging distance of cavalry" and "Dismounted Cavalry skirmish line fire ranges" are broken by unbridged rivers but extend across bridged rivers (and all streams). "Artillery screens" are not broken by river.

"Being within close charging distance of cavalry" and "artillery screens" is broken by obstacles to the line of sight. Skirmish line fire is not obstructed by obstacles to the line of sight unless the obstacles are enemy units in which case skirmish line fire is obstructed.

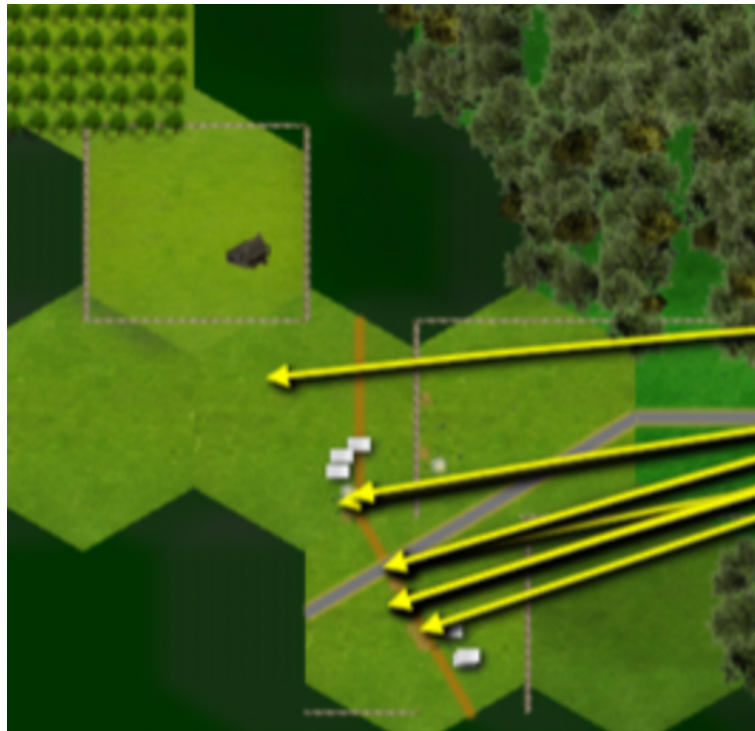
A dismounted cavalry unit skirmishes like infantry with the skirmish line firing out to 330 yards if it is equipped with Sharpe's rifled carbines, 440 yards if it is equipped with Burnside's or Hall's rifled carbines or 110 yards if it is armed with double barrelled shot guns.

If non skirmishing enemy units approach the skirmish line and the skirmish line contains most of the company the skirmish line will fall back on the anchor section and that section too will fall back but if a half or a minority of the



Artillery targeting arcs (yellow arrows)

EXTANT ARCS



**FIGURE 24.**  
Artillery Arcs

company is in the skirmish line the skirmishers will fall back on the anchor section eventually folding back into a formed company bringing the skirmishing to an end and the reformed company will not automatically fall back.

#### Within close charging range of Cavalry

Friendly cavalry units coming within close charging distance of enemy cavalry or infantry skirmish or sharp shooter line range have the option to "Draw Sabre or Pistol and Charge" so long as they have been authorised to charge targets of opportunity and are not restricted to lesser range than that applicable. See Figures 30 and 31.

### **15. AGGRESSION**

Units within one hexagon can be attacked simultaneously from more than one hexagon.

Sometimes actions will carry on across turns with the effect that orders issued to units on a fresh turn may be delayed in the execution having said which the general rule is that new orders replace old.

With the exception of a) infantry and dismounted cavalry ordered to fire a single volley (whether or not as part of a charge) and b) infantry and dismounted cavalry who have fired not more than two volleys (which can be achieved, within a single turn, by ordering the men to fire deliberately though this consequence could not be brought forward to a



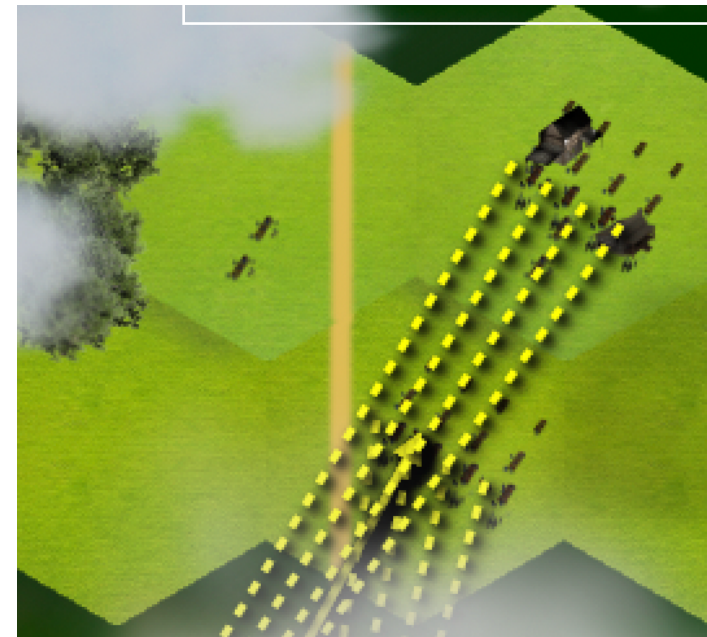
subsequent turn of a continuous fire fight because upon the third volley being fired control would be lost and men no longer responsive to movement or deployment orders ) in a fire fight (unless ordered to cease fire), infantry and dismounted cavalry firing by volley are unable to change facing or deploy and they are also unable to move. Once a firefight has begun, and gathered momentum into a third volley, company commanders would lose the ability to issue complex orders because soldiers would not hear what was being shouted or rolled on the drum or, if in smoke, see what was being gesticulated, moreover infantry would be reluctant, while being fired on, to cease fire for the time required to perform a manoeuvre. Infantry or dismounted cavalry in a fire fight will, however, obey fix bayonets and charge engage orders. To move, if you are unwilling to charge, you must first hold fire (for five minutes) or use deliberate fire to retain control for an extra two minutes. The ability to charge is because some of the infantry would hear the bugle or drums sounding a charge and respond to it prompting their compatriots to fix bayonets or, if cavalry, draw swords or pistols and move forward with them.

#### Cavalry ordered to draw steel or pistols and charge

In the case a friendly cavalry unit charges an unfriendly unit at 880 yards distance or less it will use charge speed. This is 4 m.p.h. (canter) for the first 310 yards of the charge but rises to 10.4 m.p.h. (gallop) for the subsequent 410 yards and to 21 m.p.h. (flat out) for the final 160 yards. If the unfriendly unit is nearer when charged the friendly cavalry unit moves more

Artillery targeting (could not be fired on) arcs (dotted yellow)

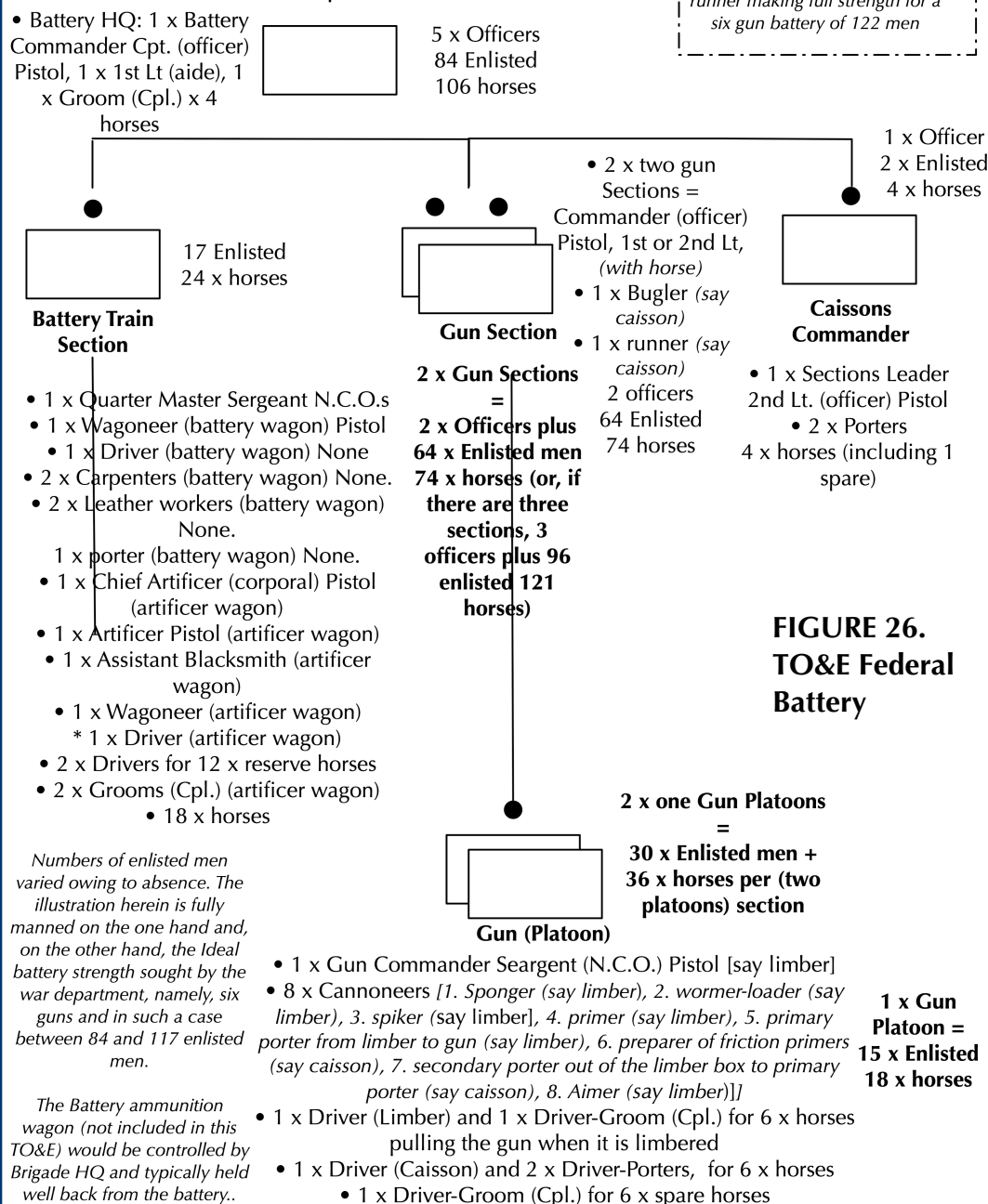
#### EXTANT ARCS



**FIGURE 25.**  
**Artillery Arcs II**



**Federal Artillery Battery (four guns 89 men inc.  
train or, if six guns, 122 men including train) with  
106-142 horses January 1860  
(Table of Organisation & Equipment)**



**FIGURE 26.  
TO&E Federal  
Battery**

quickly to the gallop.

### Infantry Ammunition

Infantrymen are taken to carry fifty rounds, forty in the regulation cartridge box and, it is allowed, ten in sundry pockets.

### Smoothbore and Rifling

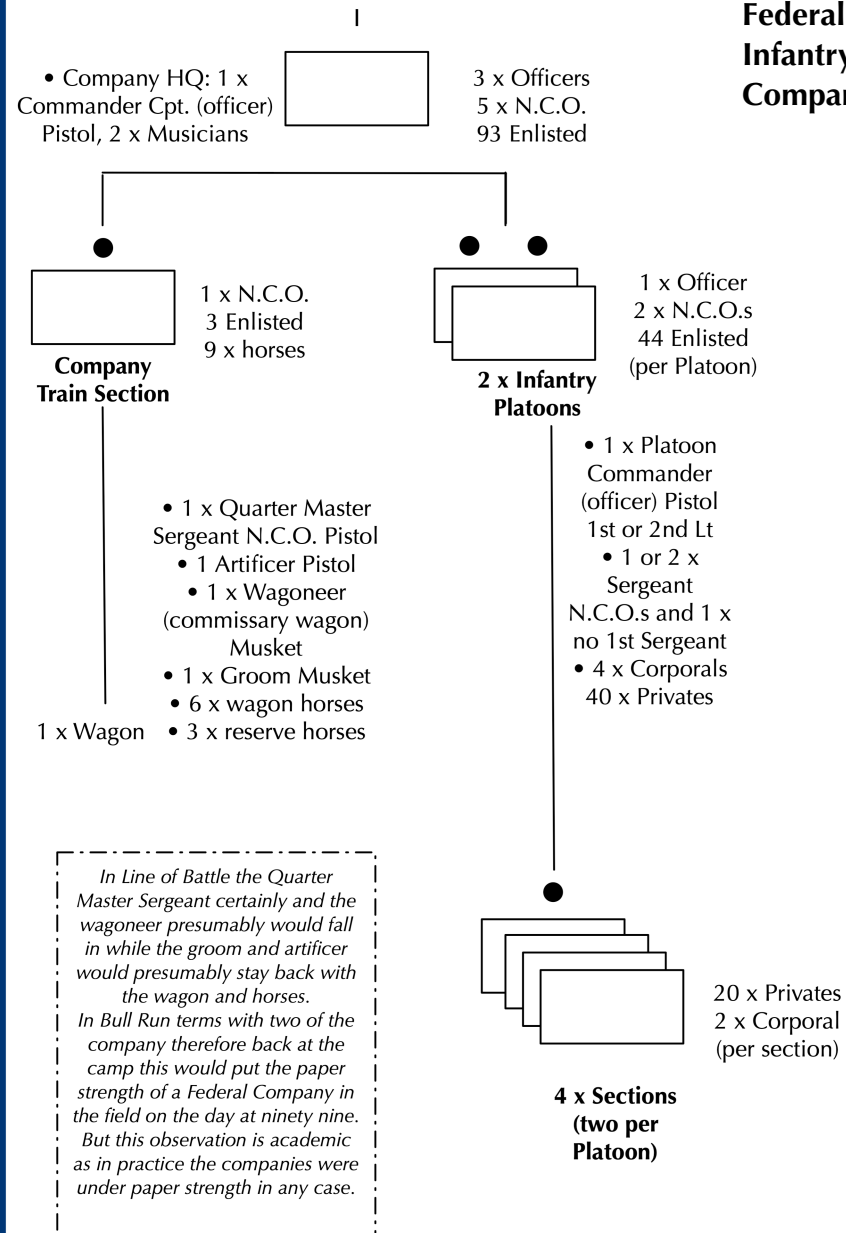
Most Union artillery pieces are rifled though a large minority are not. Among the Confederates the situation is reversed.

By 1862 most infantry, at least in the Union Army, carried rifled small arms, but at First Bull Run in 1861 the majority of the infantry were still equipped with smoothbore muskets. Nonetheless, many companies, on both sides at First Bull Run, had rifles or, far more often, rifled muskets. In our model the precise small arm of each company is represented with as much accuracy as research permitted. The consensus among 20th century historians (as well as military prophets of the time) was that the rifled musket transformed the 19th century battlefield making the American Civil War the first modern war and if so we should see great effect from the infantry with more modern small arms. This consensus view is, however, out of date. More recent studies have proven that to be effectively used rifled-muskets and rifles required specialised training in marksmanship. This is because the rifled musket follows a parabolic path and so without training is, unless the target is within circa



110 yards, liable to fall short or long of the target. American Civil War infantry were not given training in rifle marksmanship to the extent needed to benefit from rifled weapons not even later in the war let alone at the time of its first engagement. Indeed, the efficacy of such training would have been doubtful given that even with skills in marksmanship rifled-musket and rifle armed infantry would have often chosen to begin volleys at close range for two other additional reasons than difficulty in aiming. One reason rifle and rifled-musket armed infantry could not exploit their weaponry's range was lack of visual range. This tended to level the playing field between rifled muskets and muskets both in terms of the difficulty or discerning targets more than about 800 yards away (however accurate your weapon) and because terrain often contained obstacles to line of sight fire at long distances a problem compounded where friendly forces stood between the soldier and his potential targets. These factors of training and vision would have significantly limited the advantage possessed by troops with rifled small arms even without quantifying the separate and massive effect of black powder smoke obscuring the battlefield for rifle and musket alike which tended to compel units to approach really close to the enemy to be sure they were there at all. At First Bull Run the prevailing wind in the afternoon would certainly have dispersed smoke in due course (average wind speed in July in Prince William county today is 4.2 m.p.h.) but as one observer on the day observed wind in the morning was magically still.

### Federal Infantry Company (101) January 1860 (Table of Organisation & Equipment)



Throughout the day it was relatively calm. Researchers have not really looked into exactly how thick smoke was or how long it took at different wind speeds to disperse sufficiently to free troops to fire accurately again but what we are sure of is that smoke massively reduced range of a vision and as such was a huge leveller in favour of the inferior small arm. On grounds of black powder smoke alone I would argue modern warfare did not begin until smokeless powder arms were provided to armies which in the case of the first army to adopt the technology, the French, was 1887 (the US army did so in 1893).

The range at which infantry fire was received, on average, in American Civil War battles in the last two and half years of the American Civil War (when most small arms were rifled) was 94 yards (little different from muskets)•••. This would not have been so had the rifled musket revolutionised the balance of power between defence and attack or between infantry and guns as was until recently accepted to have been the case. Such a revolution in the relationship between infantry and guns and attack and defence did take place but it required two further and really more fundamental advances, namely, much higher rates of fire (which breech loading did bring on toward the end of the war) and smokeless gunpowder which did not enter general military use until after 1887. Even musket armed infantry of fifty years previously might have been firing on average at, say, 140 yards if they had had smokeless gunpowder.

The rifled-musket and rifle did have a large impact on skirmishing (in the minority, at First Bull Run, of cases where skirmishers were equipped with rifled-muskets or rifles) but skirmishing was not the core, though an important, part of what determined the outcome of the battle. About twenty per cent of the infantry were assigned to skirmishing and sharpshooting. Once in proximity to the enemy they tended to be pulled back if lines closed, but it seems likely that they account for more than their pro rata share of the casualties even though their rate of fire would have been on average perhaps half as fast. Indeed, in so far as it was important skirmishing was particularly so for officers. This is because skirmishers and sharp shooters would have focused on attempting to shoot officers. To reduce the chance of being picked out by skirmishers and sharp shooters officers needed to mix in with their men and get off their horses (good though being mounted was for infantry morale). Doing so was significantly more important than it would have been in the Napoleonic Wars. So long as an officer was about 300 or more yards from the nearest enemy musket armed skirmisher he would have been unlikely to be picked off in the Napoleonic Wars and at First Bull Run equally, but facing an enemy rifled-musket armed sharp shooter the officer needed to put about 550 yards between himself and the enemy sharp shooter. At 500 yards alone, on horseback, in the open and within range of a section of twenty sharpshooters for, say, five minutes was heading to suicidal. This fact would have motivated field officers to stand on foot rearward of their men (line officers were duty bound by the drill manual to stand to the flank in line with their men) to a greater extent



**TABLE 15.**  
**Orientation**  
**effects**

Building burned to the ground.



Buildings can be burned to the ground if fired on by artillery loaded with shell..

**FIGURE 28.**  
**Burning**  
**building.**

## ORIENTATION EFFECTS TABLE

	FRONT v	FRONT FLANK v	REAR v	REAR FLANK v
REAR	Casualties inflicted by the attacker during mêlée +80%. Defender cannot fire	Casualties inflicted by the attacker during mêlée +80%. Attacker fire at 70%. Defender cannot fire.	No mêlée effect. Neither side may fire.	Casualties inflicted by the attacker during mêlée +20%. Only the Defender can fire at 30%.
REAR FLANK	Casualties inflicted by the attacker during mêlée +40%. Defender fire at 30%	Casualties inflicted by the attacker during mêlée +40%. Attacker fire at 70%. Defender fire at 30%.	Casualties inflicted by the attacker during mêlée -20%. Neither side can fire.	No mêlée effect. Both sides may fire with 30% effect.
FRONT FLANK	Casualties inflicted by the attacker during mêlée +20%. Defender fire at 70%	No mêlée effects. Fire at 70%.	Casualties inflicted by the attacker during mêlée -40%. Only the Defender can fire at 70%.	Casualties inflicted by the attacker during mêlée -40%. Attacker fire at 30%. Defender 70%.
FRONT	No mêlée modifiers all fire at 100%	Casualties inflicted by the attacker during mêlée -20. Fire at 70%.	Casualties inflicted by the attacker during mêlée -80%. Only the Defender can fire at 70%.	Casualties inflicted by the attacker during mêlée -80%. Attacker fire with 30% effect. Defender with 100% effect.

than in the Napoleonic period but that in turn would make it much harder for them to see what was going on. United States infantry drill of the 1850s instructed all line officers (lieutenants and captains) to stand at the side of any battle line (and they would not have been provided with horses). This training, and the example of officers so trained to other officers not trained, would have militated to make life harder for sharp shooters to pick off field officers than it would have been fifty years previously reflecting some degree of adaption to the onset of rifling.

### Artillery Ammunition and Artillery Rates Of Fire

Artillery, subject to type (for example rifled guns cannot fire shot and smoothbore guns cannot fire bolt) can be loaded with one (or two) rounds of canister, or one of round shot, bolt, case shot (also known as shrapnel) or shell.

Canister consists of a case containing about 27 bullets. When the case emerges from the barrel it breaks up and the twenty seven bullets fan out in a cone. Above circa 440 yards Canister cannot be used. Canister also cannot, except by howitzers whose muzzle can be lowered further, be used below 55 yards. Canister can be fired double shot. It is 35% more effective than single shot (but uses up two rounds).

Case Shot (also known as Shrapnel) consists of a fused shell (containing about 78 bullets) that detonates in the air above the target. With the exception of howitzers case is unusable (because of the inability to incline the gun appropriately and because of the length of the fuse) below about 660 yards.

Bolt is a solid shot with a cylindrical instead of spherical round. Round shot cannot be fired from rifled guns and Bolts cannot be fired from smoothbore guns.

Round shot consists of metal cannon balls. Artillery cannot use round shot below 220 yards.

Shell fire may be used to set wooden buildings alight removing their defensive terrain effect.

Guns may fire once per 30 seconds which is called "quick rapid fire," once per minute which is "rapid fire", once per two minutes which is the normal rate of fire, once per three minutes which is called "deliberate fire" and once per ten minutes which is "slow fire."

Quick rapid fire is 25% less accurate, and deliberate and slow fire 20% more accurate than rapid fire.

Rapid fire is sustainable for not more than four minutes. Once the four minutes is up guns must withhold fire for three minutes (to cool down and for crew to rest) before they can fire again which once they have rested they may do at any speed including rapid fire again.

Quick rapid fire is sustainable for not more than three minutes. After a bout of quick rapid fire guns must withhold fire for nine minutes (to cool down and for crew to rest) before they can fire again. There is a 10% chance that artillery will be



crumbling after any bout (whether of 30 seconds or three minutes duration) of quick rapid fire. Once the gun has rested for nine minutes it can fire again at any speed.

A drawback of firing as fast as possible is that ammunition may run out. Subject to the wagon containing sufficient supplies of the appropriate type of artillery round, ammunition may begin to be replenished from the ammunition (artillery) wagon (which reports to brigade HQ) so long as that vehicle comes within fifty five yards of a gun that is not firing or moving. In the event of an ammunition wagon (artillery) being hit any men within eight yards become a casualty, 40% of those between 8-20 yards become a casualty and 10% of those between 20-50 yards become a casualty and 4% of those between 50-100 yards become a casualty. ●●●●

#### Infantry Ammunition and Infantry Rates Of Fire

Flintlocks, percussion cap muskets, rifled-muskets and percussion cap rifles can fire circa (depending on the model) once per 60 seconds (actual average rates of fire in combat in the American Civil War were one round per 2.1 minutes) ●●●●●.

Specifically, US M1816 flintlocks in 65 seconds and US M1822 flintlocks in 64 seconds, Liege Belgian 1842 Percussion Cap Muskets in 60 seconds, US M1842 Percussion Cap Muskets and M1842 Palmetto Percussion Cap Muskets in 59 seconds and Prussian 1834 Percussion Cap Muskets in 58 seconds.

Bavarian M-1842 rifled-muskets in 63 seconds, 1841 Mississippi Rifles and South Carolina M1841 Palmetto Rifles in 61 seconds and 1854 Lorenz Rifled-Musket ● in 60 seconds. US M1855 Harper's Ferry roll-cap rifled muskets once per 55 seconds.

On the parade ground small arms fire would be much faster about twice as fast (and four times as fast in speed trials), but on the battlefield

*Far Distant units.*

**FIGURE 29.**  
**Far Distant**  
**Units**



At extreme distance the viewer may make out only the glitter of bayonets or cannon but at far distance, once the viewed get within circa 1,650 yards (1.5 km), it becomes possible to distinguish the number of formations though nothing else about them. This cadet grey icon indicates the presence of such a single formation, or multiple formations, of unknown provenance.

the rate would be slowed by deliberation, distraction, fowling and fatigue. Deliberation would be less important in ordered fire but more important in fire at will (which was probably about sixty per cent of the fire that took place **TABLE 16. Melee Results I**

### MELEE RESULTS TABLE I PER 5 MINUTES OF CONTINUOUS MELEE

FORMATION	Average casualties inflicted (A)	Reduction to (A) facing enemy cavalry charge head on in line	Diminution casualties suffered (B) if cavalry dismounted and defending built on terrain	Increase to (A) per 20 feet height advantage	(B) when attacking into or defending forest
Limbered artillery	0.5			10%	-40%
Unlimbered artillery	1		-20%	10%	-40%
Union Cavalry (72 men) in column of fours	3	-30%	-20%	10%	-40%
Confederate Cavalry (64 men) in column of fours	2.5	-30%	-20%	10%	-40%
Union Cavalry (72) men in line	8		-20%	10%	-40%
Union Cavalry (72 men) in column of platoons	7	-10%	-20%	10%	-40%
Union Cavalry (72) men in column of sections	6	-20%	-20%	10%	-40%
Confederate Cavalry (64 men) in line	7		-20%	10%	-40%
Confed. Cavalry (64 men) in column of platoons	6	-10%	-20%	10%	-40%
Confed. Cavalry (64 men) in column of sections	5	-20%	-20%	10%	-40%
Infantry (80) men in column of fours	2			10%	-40%
Infantry (80) men in line or col. of cos. or divs.	3	-30%		10%	-40%
Infantry (80) men in column of platoons	4.675			10%	-40%
Infantry (80) men in column of sections	5.325			10%	-40%



## MELEE RESULTS TABLE II PER 5 MINUTES OF CONTINUOUS MELEE

FORMATION	Average casualties inflicted	Diminution in casualties inflicted when cavalry charge head on	Diminution in casualties suffered (if cavalry only if dismounted) when defending built on terrain	Increase in casualties inflicted per 20 feet height advantage.	Decrease in casualties suffered when defending, or attacking into, forest terrain.
Officer and Aide on foot	0.15		-20%	6%	-40%
Officer and Aide mounted	0.25		-20%	6%	-40%
ALL FORMATIONS	Percentile increase in casualties inflicted per 5 minutes when frontally attacking the enemy's rear flank	Percentile increase in casualties inflicted per 5 minutes when frontally attacking the enemy's rear	Percentile increase in casualties inflicted per five minutes when defending a ford	Percentile decrease in casualties suffered per five minutes defending a bridge	Percentile decrease in casualties inflicted per five minutes when attacking across a stream
	40%	100%	30%	-50%	-30%
	Percentile decrease in casualties inflicted per 5 minutes by cavalry when they are "blown". For infantry who are bone tired the reduction is 40%.	Percentile decrease in casualties inflicted per 5 minutes when congested	Percentile increase in casualties inflicted per 5 minutes when attacking with more than one company depends on whether the attacker is engaging a battalion or single company.	Percentile decrease in casualties inflicted per 5 minutes when stunned (-20%), staggered (-30%) or crumbling (-50%)	Percentile decrease in casualties inflicted per turn when routed
	-40% cavalry blown -20% infantry fatigued	-60%	x number of attackers brought to bear.	-20% to 50%	-100%

Effects are multiplicatively cumulative so that defending built on terrain behind a bridge 100 feet higher than the attacker would bring a casualties inflicted increase of  $y \times 1.2$  (built on)  $\times 1.3$  (height) with defending casualties halved. Random effects vary deaths inflicted. Even when an angle of attack advantage comes into effect part way through a turn it expires at the end of the turn so that if a melee lasts for more than one turn by the start of the second turn of the melee angle of attack advantages will have expired with the disadvantaged force assumed to have redeployed by the beginning of the subsequent turn so as to have countered the disadvantage. Cavalry companies with both swords (sabres which are lighter than swords became widely used in place of swords only after the war had begun) and pistols inflict (+16%) more casualties than those with pistols only. The reason for this is that if the pistol or pistols ran out of ammunition then the sword would come into its own.

or more). Flintlock muskets are a little slower (double ignition, head-recoil from flash and additional loading movements). Carbines, however, are faster. Cook and Brothers (muzzle loading) carbines at 40 seconds per round and Hall's (muzzle loading) carbines at 36 seconds per round. Burnside's (breech loading) carbines at 30 seconds per round and Sharp's (breech loading) carbines at 16 seconds per round. Pistol fire is faster still at 6 seconds per round (3 on the range).

After two rounds (excluding any preloaded rounds) have been fired the third requires 20% more time, the fourth 40% more time and the fifth 60% more time. After the fifth round fatigue sets in and volleys need 100% more time from the sixth round inclusive onwards. Infantry may be ordered to deliberate fire which is at half normal speed. The advantages of deliberate fire are that it precludes fatigue and reduces the drain on ammunition resources. It is also 20% more accurate.

Infantry may be ordered to rapid fire which is at double normal speed. Rapid fire is 15% less accurate. Infantry conducting rapid fire need 30% more time for the third round, 50% more time for the fourth round after which fatigue will set in and 100% more time for the fifth round.

#### **EXAMPLE:**

Infantry firing a US M1816 Flintlock musket deliberately for ten minutes would fire, if the weapon was not preloaded, at 130 seconds, 260 seconds, 390 seconds and 520 seconds so four times in ten minutes. At the end of the time the unit would not be fatigued.

Firing the same weapon in the ordinary way for ten minutes would involve fire at 65 seconds, 130 seconds, 208 seconds, 299 seconds, 403 seconds and 533 seconds so six times. After firing the fifth volley the unit would be fatigued.

Firing the same weapon using rapid fire for ten minutes would involve fire at 33 seconds, 66 seconds, 109 seconds, 159 seconds, 224 seconds, 289 seconds, 354 seconds, 419 seconds, 484 seconds and 559 seconds so ten times in ten minutes. After firing the fourth volley the unit would be fatigued.

For each round fired in a fatigued state there is a 2%●● chance of irreversible fouling in which case the infantryman's weapon ceases to function. A man with a fouled weapon who has not picked up an un-fouled weapon contributes for the worse to any routing calculation in the event of a moral check having occurred. For each round fired in a bone tired state there is a 10% chance of irreversible fouling.

Subject to the wagon containing sufficient supplies of the appropriate type of small arms or artillery round, ammunition may begin to be replenished from the ammunition (infantry cartridges) wagon (which reports to Regimental HQ) so long as that vehicle comes within fifty five yards of the friendly infantry or artillery and that the combat unit is not firing or



moving.

### Orientation

Battle advantages accrue to *melée* and infantry firepower on the basis of angles of attack. Within their artillery screen artillery fire is not adversely effected by angle, but artillery cannot fire at targets that are not within their screen.

- If the number of men in an infantry company falls to  $\leq 35\%$  of muster strength, within sight of the enemy, or the number of men in a cavalry company (or troop) to  $\leq 35\%$  of muster strength they rout. If units routing, with less than or equal to 35% of muster strength, are rallied they must be assigned, to the nearest friendly companies that have taken losses and are within 660 yards of where they rallied, as reinforcements up to but not more than one hundred men. However if the ratio of assignees to assigned is 1:2 or more then the permanent morale of the newly combined unit falls by one step unless the assignees have better or the same morale than the assigned in which case it does not fall. Once assigned their old company is dissolved or else, if there are no such friendly companies within 660 yards, their having rallied is preemptively undone and they must continue to rout. There is no limit on the number of times that friendly officers may attempt to rally fleeing (or routing) units.

- Artillery units are eliminated when 75% or more of their gunners are dead. If artillery units lose 36% to 45% of their men in a single turn they automatically become crumbling. If artillery units lose 46%-65% of their men in a single turn they automatically rout. When artillery rout the men rout but the gun stays where it is. If friendly infantry occupy a hexagon containing unmanned enemy guns infantrymen may be turned into artillerymen and the gun turned against the enemy. In transferring men from the infantry to the artillery no morale check is required and no crumbling occurs.

### Concentrated Fire

- Players will want to keep in mind that fire effectiveness of congested units is only 30%.

In general the units of the game occupy the ground area they would have and so in working out how many units can be brought to bear in a given fire fight one need merely look at the map to see if there is room. The exception is when units are moving at odd angles to one another when officers need to be present to ensure there is no congestion.

















### Diminished strength and Melée

For each infantry or cavalry man a unit has lost from full strength the number of deaths a unit will inflict in *melée* is diminished in proportion according to the unit's original strength.

If a unit has fallen below 35% muster strength and it is attacked by *melée* it will surrender.

# MORALE CHART

**TABLE 18.**  
**Morale Chart**

CONFEDERATE	FEDERAL UNIONIST	MORALE & EFFECTS	CONFEDERATE	FEDERAL UNIONIST	MORALE & EFFECTS
		<b>ECSTATIC:</b> Raises the threshold of losses that can be sustained for a given chance of disorder and rout by 9 infantry men or 3 artillery men.			<b>SKITTISH:</b> Lowers the threshold of losses that can be sustained for a given chance of disorder and rout by 2 infantry men or 1 artillery man.
		<b>ELATED:</b> Raises the threshold of losses that can be sustained for a given chance of disorder and rout by 7 infantry men or 2 artillery men.			<b>SHAKEN:</b> Lowers the threshold of losses that can be sustained for a given chance of disorder and rout by 4 infantry men or 1 artillery man.
		<b>CONFIDENT:</b> Raises the threshold of losses that can be sustained for a given chance of disorder and rout by 4 infantry men or 1 artillery man.			<b>BREAKING:</b> Lowers the threshold of losses that can be sustained for a given chance of disorder and rout by 7 infantry men or 2 artillery man.
		<b>STEADY:</b> Raises the threshold of losses that can be sustained for a given chance of disorder and rout by 2 infantry men or 1 artillery man.			<b>SHATTERED:</b> Lowers the threshold of losses that can be sustained for a given chance of disorder and rout by 9 infantry men or 3 artillery man.



## Rally

Commanders and aides-de-Camp may attempt to rally units that are routed.

Any unit, or units, within range of a rallying officer may be rallied per (fifteen second) unit of rally time. The whole regiment may be rallied simultaneously by rallying the regimental colours. This is not always possible. In the case multiple companies of a regiment rout but any other companies do not the colour party will not rout and so cannot be rallied.

The colour party only routs when the whole regiment routs. Nonetheless, if the whole regiment does rout rallying the colour party is efficient since if the rally attempt is successful the effect will be an infectious one applying to all companies of the regiment in addition it is twice as easy (4%) as ordinary rally (2%). On the other hand, an ordinary rally may effect multiple companies simultaneously if they are within range. When the officer trying to rally has ordered friendly units within 55 yards of himself the odds of rallying double (to 8% if rallying the colours and 4% if rallying a company or set of companies).

The ease of rallying is affected by the morale of those it is being attempted to rally: Confident x 1.1, Elated x 1.5, Ecstatic x 2, Steady x 1, Skittish x 0.9, Shaken x 0.7, Breaking x 0.4, Shattered x 0.2.

The ease of rallying is also affected by the number of casualties a unit has taken.

The ease of rallying is affected (x 2.5) by the presence of ordered friendly infantry or cavalry.

To rally a routed unit it is necessary for an officer who is dismounted to be within 60 yards, or if he is mounted within 180 yards, of the location of the routed unit and to successfully perform the "Rallying" order.

Each attempt to rally takes fifteen seconds. To rally a regimental commander must be not more than 60 yards away from those (unless they are being rallied via the regimental colours) whom it is being attempted to rally.

Units within an enemy cavalry or infantry screen and routing cannot be rallied. Units within an enemy artillery screen can be rallied. A commander who is himself within an enemy cavalry or infantry screen may still attempt to rally so long as the units whom it is being attempted to rally are not in the enemy screen.

A commander performing the rally order cannot conduct communications nor can he move nor issue battle orders though he could cancel his rallying order if he wants to do these other things on a subsequent turn.

Unlimbered artillery can rout but may never be rallied however limbered artillery can be rallied.

Regiments, Brigades, Divisions and Armies which lose a high proportion of their strength (or key officers) in a single turn are liable to become routed en masse.

If a whole regiment routs regimental commanders with orders to rally and chase invoked chase after the colour party (or routing company/ies) automatically and attempt to rally, without any movement orders needing to be issued.

### Muzzle loading (bucketshot filled) double barrel shotguns. ●●●

In the first round of melee only the double barrelled shot gun increases casualties by 300%. The default load time of a double barrelled shot gun is 120 seconds (240 seconds if fatigued). Double barrelled shotgun equipped cavalry in melee that have discharged their shotgun have the option to continue the melee normally (having drawn their pistol or sword) or they can choose to inflict no casualties until they have loaded and then again inflict casualties at 300%.

## **16. MORALE**

### Morale and the ratio of foes to own forces in sight

In calculating, following losses, whether a unit has become disordered or routed a contributory factor is the number of ordered friendly units in sight relative to the number of ordered enemy units in sight. In making this calculation those in sight and within 330 yards will have more impact than those in sight and within 660 yards who in turn will have more impact than those in sight and within 990 yards and this will be true in the ratios 6:3:1. Where the ratio of enemy to friendly ordered units in sight, and within 990 yards (12 hexagons), is  $\geq 4:1$  this (the state of shattered morale) is equivalent to losses of 9 men for the purposes of assessing the onset of disorder or rout only. Where the ratio of enemy to friendly ordered units in sight and within 990 yards (12 hexagons) is  $\geq 3:1$  but  $< 4:1$  this (the state of breaking morale) is equivalent to losses of 7 men for the purposes of assessing the onset of disorder or rout only. Where the ratio of enemy to friendly ordered units in sight and within 990 yards is  $\geq 2:1$  but  $< 3:1$  this (the state of shaken morale) is equivalent to losses of 4 men for the purposes of assessing the onset of disorder or rout only. Where the ratio of enemy to friendly ordered units in sight and within 990 yards is  $\geq 1.5:1$  but  $< 2:1$  this (the state of skittish morale) is equivalent to losses of 2 men for the purposes of assessing the onset of disorder or rout only.

Where the ratio of friendly to enemy ordered troops in sight and within 990 yards is  $\geq 1.5:1$  but  $< 2:1$  the number of losses that can be sustained (in this the state of steady morale) before disorder or rout set in rises by 2. Where the ratio of friendly to enemy ordered troops in sight and within 990 yards is  $\geq 2:1$  but  $< 3:1$  the number of losses that can be sustained (in this the state of confident morale) before disorder or rout set in rises by 4. Where the ration of friendly to enemy ordered troops in sight and within 990 yards is  $\geq 3:1$  but  $< 4:1$  the number of losses that can be sustained (in this



the state of elated morale) before disorder or rout set in rises by 7. Where the ratio of friendly to enemy ordered troops in sight and within 990 yards is  $\geq 4:1$  the number of losses that can be sustained (in this the state of ecstatic morale) before disorder or rout set in rises by 9.

The equivalent to loss figures for artillery are 3, 2, 1 and 1.

Officers can observe which of the 8 states of morale a not disordered unit is in so long as that unit is within 220 yards of the officer.

When infantry or cavalry who have charged begin to melée they ignore, for fifteen seconds, the ratio of foes to friends in sight.

#### Morale and coming under frontal melee attack from the rear flank or rear

Units suffering a frontal melee attack to their rear flank experience an immediate permanent one step fall in morale. Units suffering a frontal attack to their rear experience an immediate permanent two step fall in morale. Any resultant melee being therefore conducted with the disadvantage immediately applicable.

#### Morale and losses sustained

In the case a unit has had  $> 0\%$  but  $\geq 2.5\%$  losses (and so is strong) whenever its morale is checked this will be equivalent to gaining 4 infantry or cavalry men or 1 artillery man for the purpose of determining, following losses, whether a unit has become crumbling or routed.

In the case a unit has lost between 2.5%-10% of its strength (and so is decimated) whenever its morale is checked this will be equivalent to losses of 2 infantry men (or if it is a gun 0.5 artillery man) for the purpose of determining, following losses, whether a unit has become crumbling or routed.

In the case a unit has lost between 11%-20% of its strength (and so is weak) whenever its morale is checked the casualties it has suffered will be equivalent to losses of 4 infantry men (or if it is a gun 1 artillery man) for the purpose of determining, following losses, whether a unit has become crumbling or routed.

In the case a unit has lost between 21%-35% of its strength (and so is extremely weak) whenever its morale is checked the heavy casualties it has suffered will be equivalent to losses of 6 infantry men (or if it is a gun 1.5 artillery man) for the purpose of determining, following losses, whether a unit has become crumbling or routed.

In the case a unit has lost between 36%-50% of its strength (and so is crippled) whenever its morale is checked the very heavy casualties it has suffered will be equivalent to losses of 8 infantry men (or if it is a gun 2 artillery man) for the

purpose of determining, following losses, whether a unit has become crumbling or routed.

In the case a unit has lost between 51%-65% of its strength (and so is on its last legs) whenever its morale is checked the extremely heavy casualties it has suffered will be equivalent to losses of 10 infantry men (or if it is a gun 3 artillery man) for the purpose of determining, following losses, whether a unit has become crumbling or routed.

In the case the commanding officer of a regiment becomes a casualty or is captured this is equivalent to the loss of 4 infantry men (or if it is a gun 2 artillery man) for the purpose of determining, following losses, whether a unit has become crumbling or routed but in this case the moral check is to the whole regiment within 550 yards. This effect lasts for circa five minutes even if the commander is immediately replaced. After circa 5 minutes there is a lingering effect equivalent to the loss of 1 infantry man and this affects the whole regiment regardless of where it is and lasts for 120 minutes. •

In the case the commanding officer of a brigade becomes a casualty or is captured this is equivalent to the loss of 4 infantry men (or if it is a gun one artillery man) for the purpose of determining, following losses, whether a unit has become crumbling or routed but in this case the moral check is to the whole brigade. This effect lasts for 15 minutes. After 15 minutes there is a lingering effect equivalent to the loss of 1 infantry man and this affects the whole brigade regardless of where it is and lasts for 120 minutes.

In the case a Confederate senior commanding officer of a brigade, or the commanding officer of a Federal division, becomes a casualty or is captured this is equivalent to the loss of 5 infantry men (or if it is guns two artillery man) for the purpose of determining, following losses, whether a unit has become crumbling or routed but in this case the moral check is to the whole brigade or division. This effect lasts for 30 minutes. After 30 minutes there is a lingering effect equivalent to the loss of 1 infantry man and this affects the whole brigade regardless of where it is and lasts for 120 minutes.

In the case the Beauregard or Johnston becomes a casualty or is captured this is equivalent to the loss of 6 infantry men (or if it is guns two artillery man) for the purpose of determining, following losses, whether a unit has become crumbling or routed but in this case the moral check is to the whole army. This effect lasts for 45 minutes. After 45 minutes there is a lingering effect equivalent to the loss of 1 infantry man and this affects the applicable former army (Potomac or Shenandoah) of regardless of where it is and lasts for 120 minutes.

In the case McDowell becomes a casualty or is captured this is equivalent to the loss of 8 infantry men (or if it is guns two artillery man) for the purpose of determining, following losses, whether a unit has become crumbling or routed but in this case the moral check is to the whole army. This effect lasts for 60 minutes. After 60 minutes there is a lingering effect equivalent to the loss of 1 infantry man and this affects the whole army regardless of where it is and lasts for 120 minutes.



### Morale and the first fifteen seconds of receiving a charge and morale when delivering a charge

When a unit receives a charge the charging unit will secure an initial, fifteen second, advantage of what we might think of as shock. This will increase the chance of the unit receiving the charge routing by a jump of 10% to 20% with the larger jump occurring where the charged unit is already weaker. In addition the unit receiving the charge will take a moral check even if it suffers no immediate casualties. This won't make so much difference against troops of high morale as they might not fail a moral check but it will make units whose morale has sunk more prone to rout at the start of the melee than they will be in the rest of the melee.

When infantry are charging with fixed bayonets their morale temporarily rises one step (until they begin to melée). This is also true of cavalry charging with sabres or pistols.

### Morale and congestion

When a unit becomes congested this is equivalent to losses of 2 infantry men (or if it is a gun one artillery man) for the purposes of assessing the onset of crumbling or rout.

### Stunned or Staggered.

When a friendly unit takes a moral check which results in the friendly unit being stunned it must cease movement, and formation facing changes, while carrying on obeying the rest of its orders. On the subsequent turn it is no longer stunned.

The likelihood of a unit being stunned is a function of its strength. A unit that has suffered less than 2.5% casualties faces a 30% chance of being stunned each time it takes a casualty and if it has suffered less than 11% but more than 2.5% casualties a 40% chance, less than 21% casualties but more than 11% a 50% chance and less than 36% but more than 21% casualties a 60% chance, less than 51% but more than 36% casualties a 70% chance and less than 66% but more than 51% casualties a 80% chance.

When a friendly unit that is stunned takes **three or more** casualties from a single volley, or round, of canon fire it may become staggered. A staggered unit must cease its intra-battle orders phase movement and formation facing changes while carrying on obeying the rest of its orders. If, in the subsequent five minutes, it sustains no more casualties it will revert to being stunned. Alternatively, if it takes **one or more extra** casualties (excluding skirmisher and sharp shooter fire) it will remain staggered. Whenever the moral of a staggered unit is checked the fact it is staggered is equivalent to losing 4 infantry men, 3 cavalry men or 1 artillery man for the purpose of determining, following losses, whether a unit has become

crumbling (or if it is already crumbling has routed). A unit that is staggered twice does not automatically crumble but if losses trigger a moral check the fact it is staggered at all (regardless of how many times it has been) makes it more likely that the check will result in crumbling (or if it is already crumbling in rout).

### Morale and the regimental or brigade colours

When the regimental colours of infantry or cavalry are in sight and within 550 yards (5 hexagons) whenever their morale is checked this is equivalent to gaining 2 infantry men or cavalry men for the purpose of determining, following losses, whether a unit is crumbling or routed.

When the regimental colours of infantry or cavalry are in sight and within 550 yards (5 hexagons) and the colour party are casualties but not captured whenever their infantry or cavalry's moral is checked this is equivalent to losing 1 infantry man or cavalry man for the purpose of determining whether a unit has become disordered or routed. On the turn following the colour party becoming casualties the party is renewed by deduction from the nearest friendly regimental company or if that is not possible the nearest friendly company.

When the regimental colours of infantry or cavalry are in sight and within 550 yards (6 hexagons) and captured whenever their moral is checked this is equivalent to losing 6 infantry men or 3 cavalry men for the purpose of determining, following losses, whether a unit is crumbling (formerly known as disordered) or routed.

### Morale and the (in-the-chain-of command) regimental and brigade commander

When the officer in command of a regiment or battalion of infantry or cavalry or a battery or section of guns is in sight and within 330 yards (3 hexagons) whenever their command's morale (that is to say the morale of each or any component company) is checked this is equivalent to gaining 2 infantrymen or cavalry or equivalent artillerymen for the purpose of determining, following losses, whether the component units of the command (the companies and individual guns the morale of each of which is checked individually) are crumbling or routed if the officer is on foot but in the case the officer is mounted this is equivalent to gaining 3 infantrymen, cavalrymen or equivalent artillerymen. These benefits are doubled if the unit commander's commander (or any yet higher officer) is also within 330 yards. In the case the unit commander's commander (or any yet higher officer) is 330-550 yards the benefit is not a doubling but instead is equivalent to gaining 1 infantrymen or cavalry or equivalent artillerymen if the officer is on foot and to gaining 2 if he is mounted.

In the case Beauregard is within 330 yards on foot this is equivalent to gaining 5 infantrymen, cavalrymen or equivalent artillerymen, Johnston is equivalent to 6 infantrymen cavalrymen or equivalent artillerymen and McDowell is equivalent to 7 infantrymen, cavalrymen or equivalent artillerymen if mounted these numbers become 7, 8 and 9. This benefit



applies only to regiments or smaller units within 330 yards.

When the officer in command of a regiment of infantry or cavalry or a battery or section of guns is in sight and within 330-440 yards (4 hexagons) whenever their command's morale (that is to say the morale of each component company) is checked this is equivalent to gaining 1 infantryman, cavalryman or equivalent artillerymen for the purpose of determining, following losses, whether the component units of the command are crumbling or routed if the officer is on foot but in the case the officer is mounted this is equivalent to gaining 2 infantry men or cavalry men.

When the officer in command of a regiment of infantry or cavalry or a battery or section of guns is in sight and within 440-550 yards (5 hexagons) whenever their command's morale is checked this is equivalent to a null effect for the purpose of determining, following losses, whether the component units of the command are crumbling or routed if the officer is on foot but in the case the officer is mounted this is equivalent to gaining 1 infantryman, cavalryman or equivalent artilleryman.

In the case the unit commander is more than 550 yards away from a unit this is equivalent to losing 1 infantry, cavalry or equivalent artilleryman.

So long as the officer in command of a regiment, brigade, or division is in sight, within 220 yards of a unit whose morale is checked, and **in front of the unit** whose moral is checked the moral benefit of the officer being present is doubled.

In the event of Beauregard being killed or captured a moral check is performed on the whole of the former army of the Potomac and in the event Johnston is killed or captured on the whole former army of the Shenandoah and if McDowell is on the whole Federal army.

### Morale and ammunition

When a unit has 91% - 100% of its designated ammunition supply whenever its morale is checked its abundant supplies will be equivalent to gaining 6 infantry men or 1.5 artillery man for the purpose of determining, following losses, whether a unit has become disordered or routed.

When a unit has 81% - 90% of its designated ammunition supply whenever its morale is checked its plentiful supplies will be equivalent to gaining 4 infantry men or 1 artillery man for the purpose of determining, following losses, whether a unit has become disordered or routed.

When a unit has 71% - 80% of its designated ammunition supply whenever its morale is checked its adequate supplies will be equivalent to gaining 2 infantry men or 0.5 artillery man for the purpose of determining, following losses, whether a unit has become disordered or routed.

When a unit has 31% - 70% of its designated ammunition supply whenever its morale is checked its ammunition supplies will have no effect on morale.

When a unit has 21% - 30% of its designated ammunition supply whenever its morale is checked its inadequate supplies will be equivalent to losing 2 infantry men or 0.5 artillery man for the purpose of determining, following losses, whether a unit has become disordered or routed.

When a unit has 11% - 20% of its designated ammunition supply whenever its morale is checked its inadequate supplies will be equivalent to losing 4 infantry men or 1 artillery man for the purpose of determining, following losses, whether a unit has become disordered or routed.

When a unit has 1% - 10% of its designated ammunition supply whenever its morale is checked its inadequate supplies will be equivalent to losing 8 infantry men or 2 artillery man for the purpose of determining, following losses, whether a unit has become crumbling or routed.

### Fatigue and Morale

Infantry or guns that have been in continuous melee' fatigue upon the start of the fifth minute, as do infantry that have fired four times within 5 minutes upon firing for the fifth time. The rate of fire of fatigued infantry drops to half the weapons normal rate [e.g. 60 seconds to once per 120 seconds (with accuracy not enhanced)]. Fatigued units recover if they avoid melee and withhold all fire for 5 minutes. Units that have been in continuous melee' for nine minutes become bone tired upon the start of the tenth minute, as do infantry that have fired at least eight times within 5 minutes become bone tired upon firing for the ninth time. The rate of fire of bone tired infantry drops to one quarter the weapon's normal rate (with accuracy not enhanced) - once every four minutes. Bone tired units recover to fatigued if they avoid melee, withhold all fire and do not move during the whole duration of a turn for 5 minutes.

Even units that are not fatigued but whose rate of fire has slowed cannot return to their normal rate of fire unless they avoid melee and withhold all fire for 10 minutes.

The state of fatigue is equivalent to the loss of two men at any time when moral is checked. The state of bone tiredness is equivalent to the loss of six men at any time when moral is checked.

When men become bone tired due to double quick time movement the longer quick time movement is sustained the greater the number of men likely to drop out of the unit due to exhaustion. Men can double quick time for fifteen minutes without this risk arising but having double quick timed for twenty minutes men might start to drop out of their unit and attempting to double quick time for much more than two hours continuously is going to have a crippling effect on the unit.



### Morale, the Hampton Legion and the First Virginia Cavalry

In the case the Hampton Legion or the First Virginia Cavalry rout a morale check should be performed on the nearest friendly brigade, regardless of whether it can see the Hampton Legion or First Virginia Cavalry so long as there is a friendly brigade within 2,200 yards of the Legion's, or the First Virginia's, colour party.

### The effect of routing and rallying on morale

When a unit routs its morale sometimes, about 60% the time, permanently drops one level.

### Blown Cavalry and Dismounted Cavalry

Cavalry which have "Drawn Steel and Pistol and Advanced" on a target become "blown". Blown cavalry cannot "Fall Out" into a different formation for the duration of the rest of the turn and they are crumbling.

### Congestion

The tendency of friendly units moving though an area at the same time as each other to be slowed is a result of overcrowding. The formal state of congestion sets in when too many un-concentrated units are in the same hexagon (which could happen either as a result of movement or as a result of the death of an officer). Units congested on one turn are returned to normal at the end of the next turn unless congested again. The movement of congested units slows 70%. A unit congested in successive 5 minute periods will become heavily congested. The movement of heavily congested units slows 85%. After ten minutes has passed heavily congested units revert to being congested.

If a unit closes for melée with a congested unit and the closing units' melée modifier is equal too or greater than the congested units' the congested unit may rout. There is a 40% chance that a congested unit beginning to rout will instead surrender.

If a unit closes for melée with a heavily congested unit and the closing units' melée modifier is equal to or greater than the congested units' the congested unit may rout. There is a 50% chance that a heavily congested unit beginning to rout will instead surrender.

A congested unit will not close for melée against an ordered unit.

A congested unit's fire effectiveness is 30% of normal (for round shot, bolt, case or shell this means the chance of hitting, for canister the number of casualties inflicted and for infantry one or the other). A congested unit's mobility is reduced by

30%.

A heavily congested unit's fire effectiveness is 20% of normal (for round shot, bolt, case or shell this means the chance of hitting, for canister it means the number of casualties inflicted and for infantry one or the other).

A heavily congested unit suffering casualties from fire will suffer twice the normal moral loss as a result.

### Crumbling

Units which lose a high proportion of their strength in a five minute period are liable to crumbling.

Units that suffer crumbling on one turn are returned to normal at the end of the next turn unless they suffer crumbling again in which case they rout.

If a unit suffering from crumbling closes for melée with a unit, or an unit engaged in melée with an an enemy unit starts to suffer crumbling in the course of the melée, the unit suffering from crumbling may, especially if it has lower morale than the enemy, rout without a fight. The fire accuracy of a unit suffering from crumbling is 80% of normal.

Regiments, Brigades and Divisions or even whole armies which loose a high proportion of their strength (or key officers) in a single turn are liable to crumbling en masse. We call this infectious crumbling.

A unit which has taken no casualties in any given five minute period will not enter the state of crumbling except, sometimes, in empathy with other units in its formation which are crumbling.

A crumbling unit's mobility is reduced by 60%. A crumbling unit's melee strength is reduced by 50%. A crumbling unit's moral drops one level. If a unit that is crumbling returns to normal its moral does not.

## **17. ROUT**

Units which lose a very high proportion of their strength in a five minute period, which are caught up in an infectious rout, which come under melée attack or which crumble twice in succession may rout.

Units that rout immediately start to leave the battlefield in the direction of their lines of communication. Routed units will leave the battlefield entirely unless rallied.

If a unit closes for melée with a routing unit and the closing units' melée modifier is  $\geq$  the routing unit's the routed unit will surrender. A routed unit will not close for melée against the enemy. Routed units may not fire. Concentrated units that rout, regardless of the presence of friendly officers, disperse.

A routed unit may be rallied during the same five minute period that it routed but if rallied may not be routed again within the same five minute period.



Once the threshold is crossed the chance of a unit routing (if it is crumbling), if its losses so far are  $\leq 5\%$ , is 10% or 20% if its morale is breaking or to 35% if its morale is shattered or 40% and 50% if its losses so far as  $\geq 36\%$ .

### Infectious Rout

If a regiment routs a moral check must be conducted on its entire brigade. if a brigade routs a moral check must be conducted on the nearest one, two, three or four (to be determined at random) friendly brigades with the outcome for them resolved as one. If a cluster of brigades rout a moral check must be conducted on an additional three, four, five, six, seven, eight or nine brigades again with the result effecting all brigades equally and if this second cluster routs then a moral check should take place on the whole army.

### Rout and surrender if surrounded or trapped or in some cases even if not

It is not always possible for units attempting to rout to do so. Routing units that cannot rout further away from the enemy (it will always be possible, unless you are trapped against a river or cliff, to rout further away from the enemy if there is only one enemy unit) surrender. For this purpose, with the exception of cavalry, only enemy within 130 yards are counted. For enemy cavalry it is those enemies within 240 yards that are counted, unless the routing friendly is also mounted cavalry, or mounted officer, in which case it is the enemy cavalry within 130 yards and the enemy infantry within 65 yards. For these calculations dismounted cavalry are treated as infantry.

If friendly units are routing down a road and the enemy appears in front of them at 65 yards distance or less they are captured. If the enemy is coming from behind them and the enemy moves right up the friendly routers will be captured. In these two cases capture will occur even if the enemy is only coming from one direction.

When a company captures an enemy company it must assign eight men to escort each company of prisoners. This escort will be lost tactically speaking but will not count toward either army's victory points.

### **A MODEST REQUEST**

Players may not upon pain, speaking perhaps too immodestly, of disqualification, conduct communications with more frequency than that allowed by the game. Players who are in a position to circumvent the above rule are hereby requested to be so kind as not to.





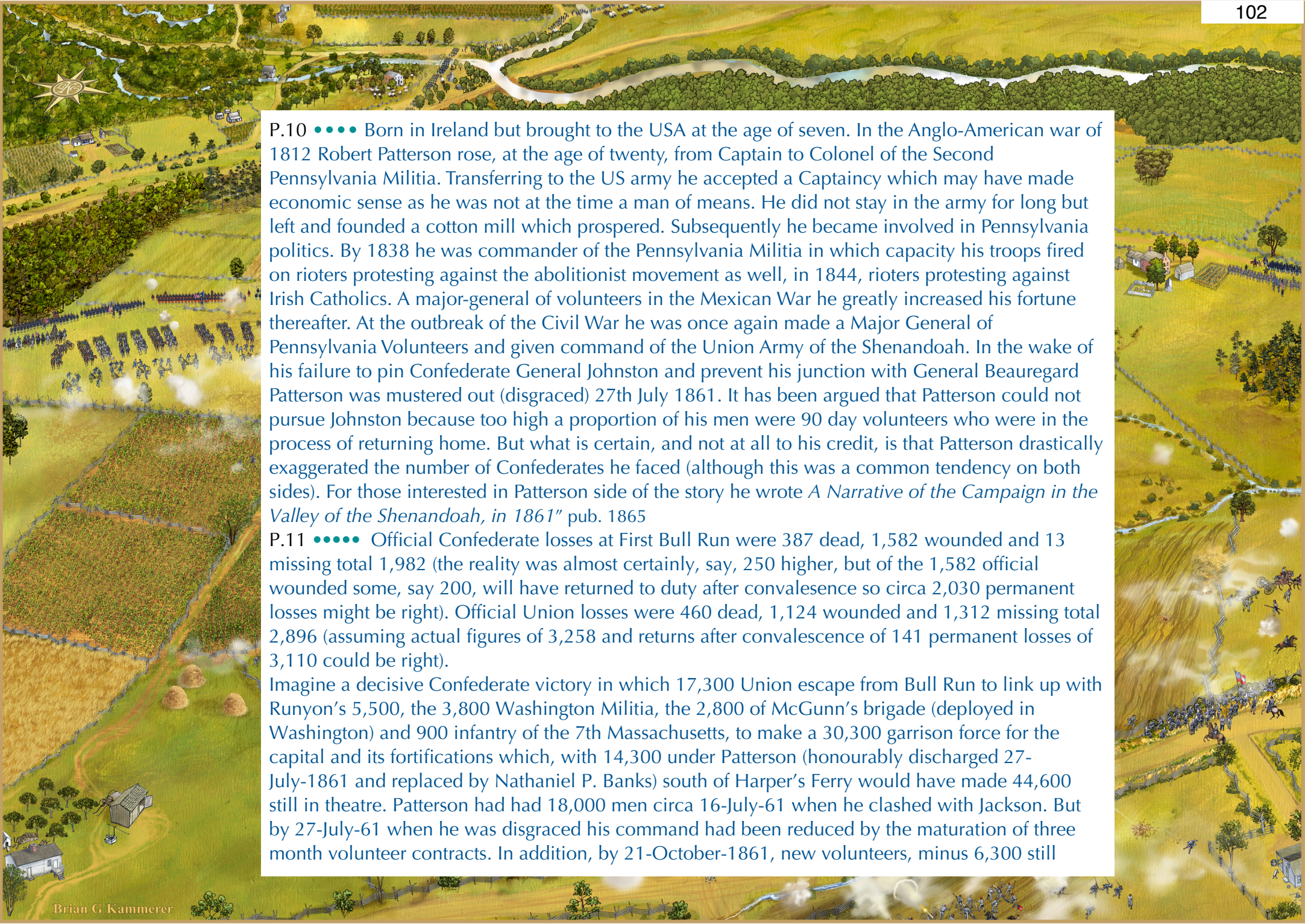
## END NOTES

P.1 • William C. Davis, *Battle at Bull Run* (Doubleday and Company Inc. 1977)

P.6 •• In history this is the *Battle of First Bull Run* but had the Confederacy emerged from the war independent the battle would have had a different name. Union nomenclature tends (though this is not an iron law) to name battles after the nearest feature of natural geography in this case the Bull Run river. Confederate nomenclature tends to name battles after the nearest village or town and so in this case in the south the action was called First Manassas (or First Manassas Junction) which, prior to the Second Battle of Bull Run would have been Manassas (or Manassas Junction).

P.7 ••• The Gauge font was designed by Alexander Tarbeev. It was published in 2006. Alexander said, of his work in general, *“everybody knows that there is such a thing as fashion. Art history has a number of great styles that change”* (Ed. s removed) *“everything ...from clothes to type. And yet, I won’t have the courage to describe, define and specify the contemporary typeface, all the more so since I am not really interested in doing it from this particular aesthetic point of view. I am into the technology challenge — and the challenge of different languages. Those things drive me to design fonts. For me, it’s an attempt to enhance the quality of typography.”* Reverend Doctor John Ramsey, Historical Engineering’s Hastati, selected Gauge font for its similarity to the font used in the Federal Topographical Engineering Office surveys of military defences including their 1st June 1862 map of Prince William and Fairfax counties and surrounds. We use it for terrain feature labels on the game map. In 1815 a family of fonts was developed called Consort. This Regency design was developed and made available in the public domain in the 21st C. by Paul Miller. This family of fonts is fitting for a 19th C. setting but is more readable than typical print fonts of the late 19th century. We use a font from this family which is called Munson to label units and officer names but also in menus or any other use of text in the game interface excepting the writing of dispatches (in this case we use U.S. Declaration font). The Gauge font is lovely in my opinion. For menus and buttons I had resolved to use Georgia font but since it was acquired by Microsoft licensing it (for commercial purposes) has become forbidding. Instead we are commissioning a font of our own. The rule book uses Optima as does the website.





P.10 ●●●● Born in Ireland but brought to the USA at the age of seven. In the Anglo-American war of 1812 Robert Patterson rose, at the age of twenty, from Captain to Colonel of the Second Pennsylvania Militia. Transferring to the US army he accepted a Captaincy which may have made economic sense as he was not at the time a man of means. He did not stay in the army for long but left and founded a cotton mill which prospered. Subsequently he became involved in Pennsylvania politics. By 1838 he was commander of the Pennsylvania Militia in which capacity his troops fired on rioters protesting against the abolitionist movement as well, in 1844, rioters protesting against Irish Catholics. A major-general of volunteers in the Mexican War he greatly increased his fortune thereafter. At the outbreak of the Civil War he was once again made a Major General of Pennsylvania Volunteers and given command of the Union Army of the Shenandoah. In the wake of his failure to pin Confederate General Johnston and prevent his junction with General Beauregard Patterson was mustered out (disgraced) 27th July 1861. It has been argued that Patterson could not pursue Johnston because too high a proportion of his men were 90 day volunteers who were in the process of returning home. But what is certain, and not at all to his credit, is that Patterson drastically exaggerated the number of Confederates he faced (although this was a common tendency on both sides). For those interested in Patterson side of the story he wrote *A Narrative of the Campaign in the Valley of the Shenandoah, in 1861*" pub. 1865

P.11 ●●●●● Official Confederate losses at First Bull Run were 387 dead, 1,582 wounded and 13 missing total 1,982 (the reality was almost certainly, say, 250 higher, but of the 1,582 official wounded some, say 200, will have returned to duty after convalescence so circa 2,030 permanent losses might be right). Official Union losses were 460 dead, 1,124 wounded and 1,312 missing total 2,896 (assuming actual figures of 3,258 and returns after convalescence of 141 permanent losses of 3,110 could be right).

Imagine a decisive Confederate victory in which 17,300 Union escape from Bull Run to link up with Runyon's 5,500, the 3,800 Washington Militia, the 2,800 of McGunn's brigade (deployed in Washington) and 900 infantry of the 7th Massachusetts, to make a 30,300 garrison force for the capital and its fortifications which, with 14,300 under Patterson (honourably discharged 27-July-1861 and replaced by Nathaniel P. Banks) south of Harper's Ferry would have made 44,600 still in theatre. Patterson had had 18,000 men circa 16-July-61 when he clashed with Jackson. But by 27-July-61 when he was disgraced his command had been reduced by the maturation of three month volunteer contracts. In addition, by 21-October-1861, new volunteers, minus 6,300 still



**FIGURE 30.**  
**Runyon**

P.17 ●●● Brigadier General Theodore Runyon (b. 29-Oct-1822 d. 27-Jan-1896)

Admitted to the New Jersey bar at the age of twenty four (1846). Brigadier General of the New Jersey Militia (2 x 90 day and 2 x 3 year service regiments) circa 28-May-61. Lincoln appointed him to have power over all the reserves (4th Division) Never commissioned into the Union Army. NJ Militia brevet Major General 25-Feb-1862. Upon his death he was United States ambassador to Germany.



receiving basic training, concentrating from all across the northern states, could have built up a relief force of 36,225 for a total of 80,825 in theatre (plus circa 15,700 across Pennsylvania). Let us imagine, in this case, that by 21-Oct-61 26,900 victorious Confederates (from the initial army of 30,900) after First Bull Run, plus 3,000 still in the Shenandoah plus 25,600 reinforcements and 13,000 across Virginia made for 68,500 in theatre. If you contrast this with the position imaginable as at 21-September-1861; with 68,225 Federals and 60,900 Confederates in theatre or as at 21-August-1861; with 55,625 Federals and 53,300 Confederates the thought experiment demonstrates a) that even after a decisive First Bull Run victory the Confederates would have needed another crushing victory hot on its heels against Union relief forces if it were to have any chance of prosecuting a successful siege of Washington, b) that even then Washington D.C. might have held out and c) that time was not the Confederate's ally.

P.11 ●●●●● D.C. Militia: Washington Light Infantry (100), The President's Mounted Guards (100), Potomac Light Infantry of Georgetown (100), D.C. National Rifles (100), National Blues (100) Union Guards (100), German Yeagers (100), Montgomery Guards (100), Marion Rifles (100), National Guards (100), The Georgetown College Cadet Corps (100), Clay Guards (200) and seven other companies formed between March 1861 and July 1861 for a total of 2,000 men. The D.C. militia were unusual in being consistently at full strength. In addition in Washington D.C were the 15th, 25th, 26th and 37th New York (3,320) and the 7th Massachusetts (900) so 6,220 in total.

P.11 ●●●●● The 34,800 includes 5,400 in seven regiments of New Jersey reserves; three volunteer (the 1st, 2nd and 3rd regiments) and four militia regiments (the 1st, 2nd, 3rd and 4th). I also count (on grounds of the broad authority granted to Runyon by the President's appointment letter) the 820 men of the 41st New York as subordinate to, and acting under, the reserve (thus 6,220 strong of which 5,400 counted as included in the main force). On average the New Jersey regiments were therefore somewhat smaller regiments of 770 men present. So the main Federal force was 29,400 strong (with 5,400 in the reserve).

P.14 ● Roger Lowenstein, *Ways and Means Lincoln and His Cabinet and the Financing of the Civil War* (Penguin Press 2022) following the State of the Union address of 01-Jan-1863: "Popular support for emancipation in Britain ended any realistic hope that Britain would intervene for the Confederacy."

P.17 ●● Present on the day according, more or less, to the roll calls as recorded in after action reports.

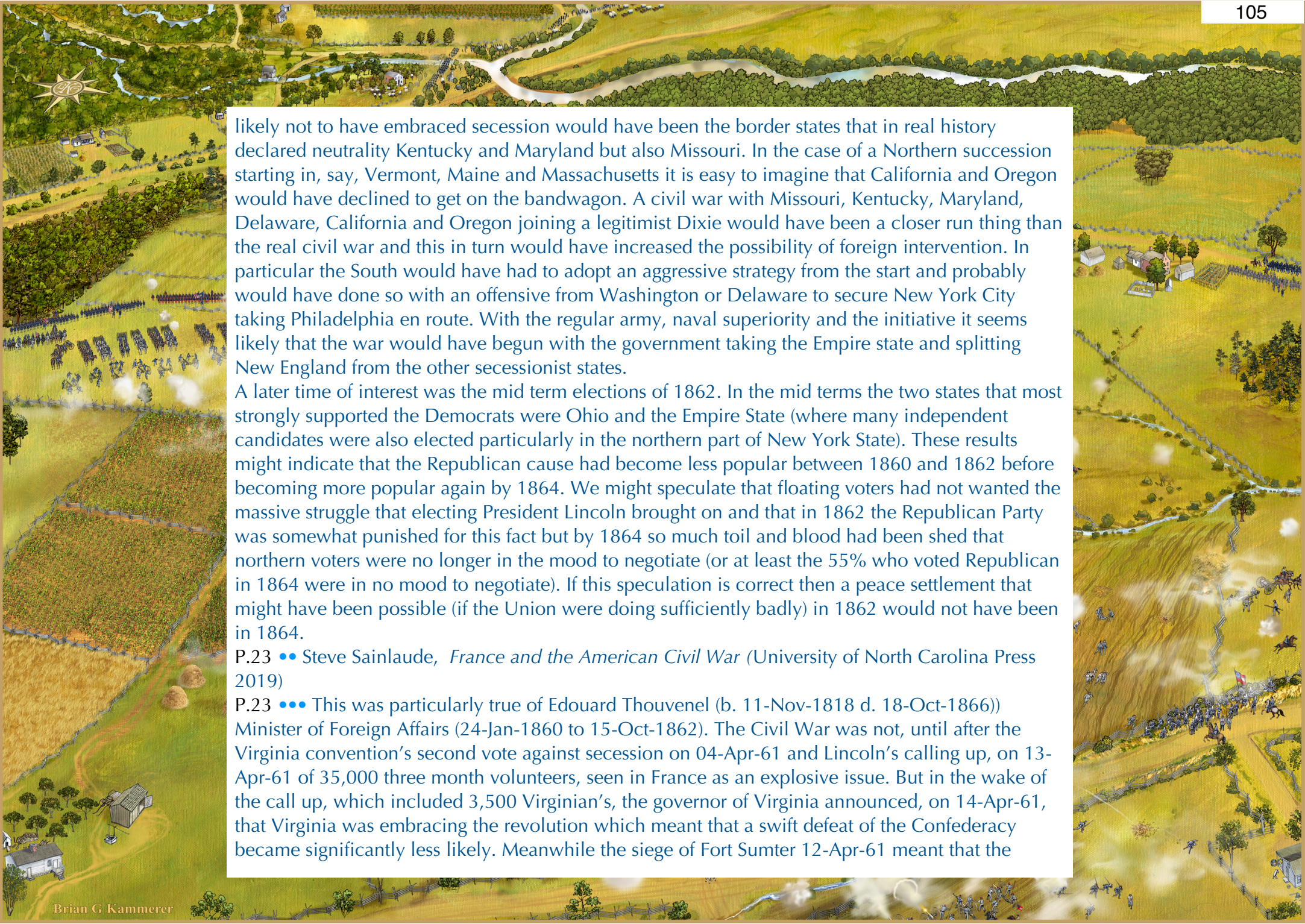


P.19 ●●●● 5,500 plus about 2,750 in McCunn's brigade who were probably subject to Runyon's authority on the basis of Lincoln's instruction to him to command all the men not in the field army between the enemy and Washington. McCunn's brigade was deployed in Washington D.C. at dawn (4.39 a.m.) on 21-Jul-61. It was called forward. It moved too slowly to reach or affect the battle but once they were outside Washington they would have become, I believe, subject to Runyon's authority.

P.19 ●●●● Preventing, to take two examples, the creation in 1863 of a Federal Banking System consisting of branches across the USA required to hold larger reserves than state or private banks and to accept each other's notes as well as, secondly, the creation of a US dollar currency (out of the "greenbacks" that had already been issued by the Federal government). The "National Banks" of the Federal banking system were required to hold Treasury Securities (promises of capital repayment and interest by the government to the purchaser). Since Treasury Securities had to be purchased in the first place this was in effect a system of forced loans whereby the National Banks purchased Treasuries (lent money to the government) who then paid it back with interest over time. As such it was a war financing measure one that eluded the Confederacy.

P.20 ● The Democratic Party split into three factions before the 1860 election each of which put forward a Presidential candidate. Given that two of these candidates combined received 15% more votes than Lincoln it is hard to avoid the conclusion that had the party not split it would have won the election and the south would not have declared secession at least not until some subsequent Presidential election. Had the Democrats remained united and won it is conceivable that this might have stimulated a secession movement in the north! The seeds of a northern secession movement were not, however, as widely or deeply spread as was the case in the south. If secession had been entertained in the north it would have been so in the most abolitionist states. In the 1860 Presidential election Republicanism was at its strongest in Vermont (76%), Minnesota (63%), Massachusetts (63%), Maine (62%) and Rhode Island (61%). New England in other words. The states that backed Lincoln where the margin of victory was, by a wide margin, least were California and Oregon followed by Lincoln's home state Illinois. In the thought experiment in which a better Democratic performance in the November 1860 election leads to a northern secession movement we might further suppose that states that had supported Constitutional Union (Bell) or Breckenridge would have been particularly disinclined to have joined a secession movement. These would be Delaware and Maryland (Breckenridge) and the border state Kentucky. In addition the states most





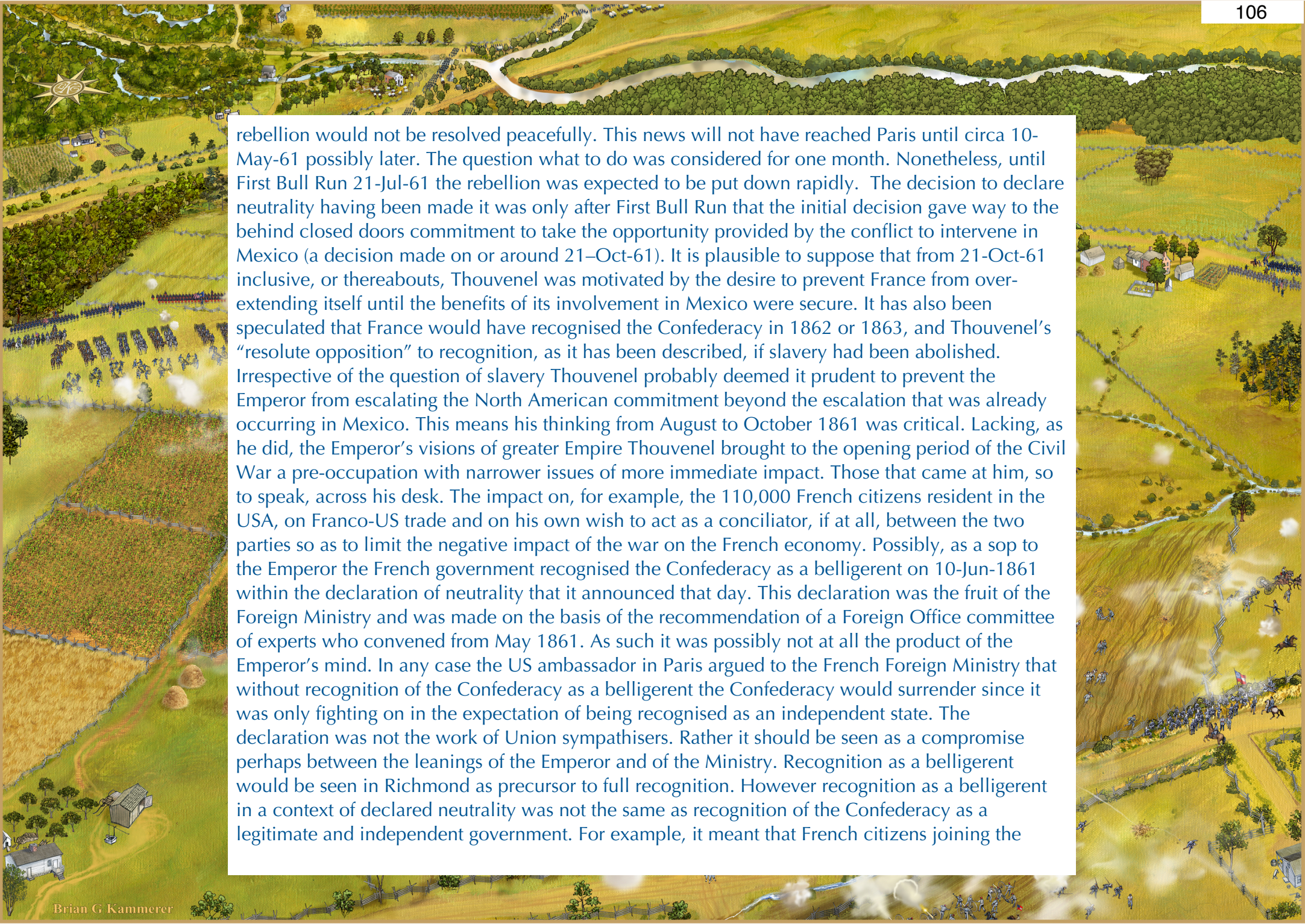
likely not to have embraced secession would have been the border states that in real history declared neutrality Kentucky and Maryland but also Missouri. In the case of a Northern succession starting in, say, Vermont, Maine and Massachusetts it is easy to imagine that California and Oregon would have declined to get on the bandwagon. A civil war with Missouri, Kentucky, Maryland, Delaware, California and Oregon joining a legitimist Dixie would have been a closer run thing than the real civil war and this in turn would have increased the possibility of foreign intervention. In particular the South would have had to adopt an aggressive strategy from the start and probably would have done so with an offensive from Washington or Delaware to secure New York City taking Philadelphia en route. With the regular army, naval superiority and the initiative it seems likely that the war would have begun with the government taking the Empire state and splitting New England from the other secessionist states.

A later time of interest was the mid term elections of 1862. In the mid terms the two states that most strongly supported the Democrats were Ohio and the Empire State (where many independent candidates were also elected particularly in the northern part of New York State). These results might indicate that the Republican cause had become less popular between 1860 and 1862 before becoming more popular again by 1864. We might speculate that floating voters had not wanted the massive struggle that electing President Lincoln brought on and that in 1862 the Republican Party was somewhat punished for this fact but by 1864 so much toil and blood had been shed that northern voters were no longer in the mood to negotiate (or at least the 55% who voted Republican in 1864 were in no mood to negotiate). If this speculation is correct then a peace settlement that might have been possible (if the Union were doing sufficiently badly) in 1862 would not have been in 1864.

P.23 •• Steve Sainlaude, *France and the American Civil War* (University of North Carolina Press 2019)

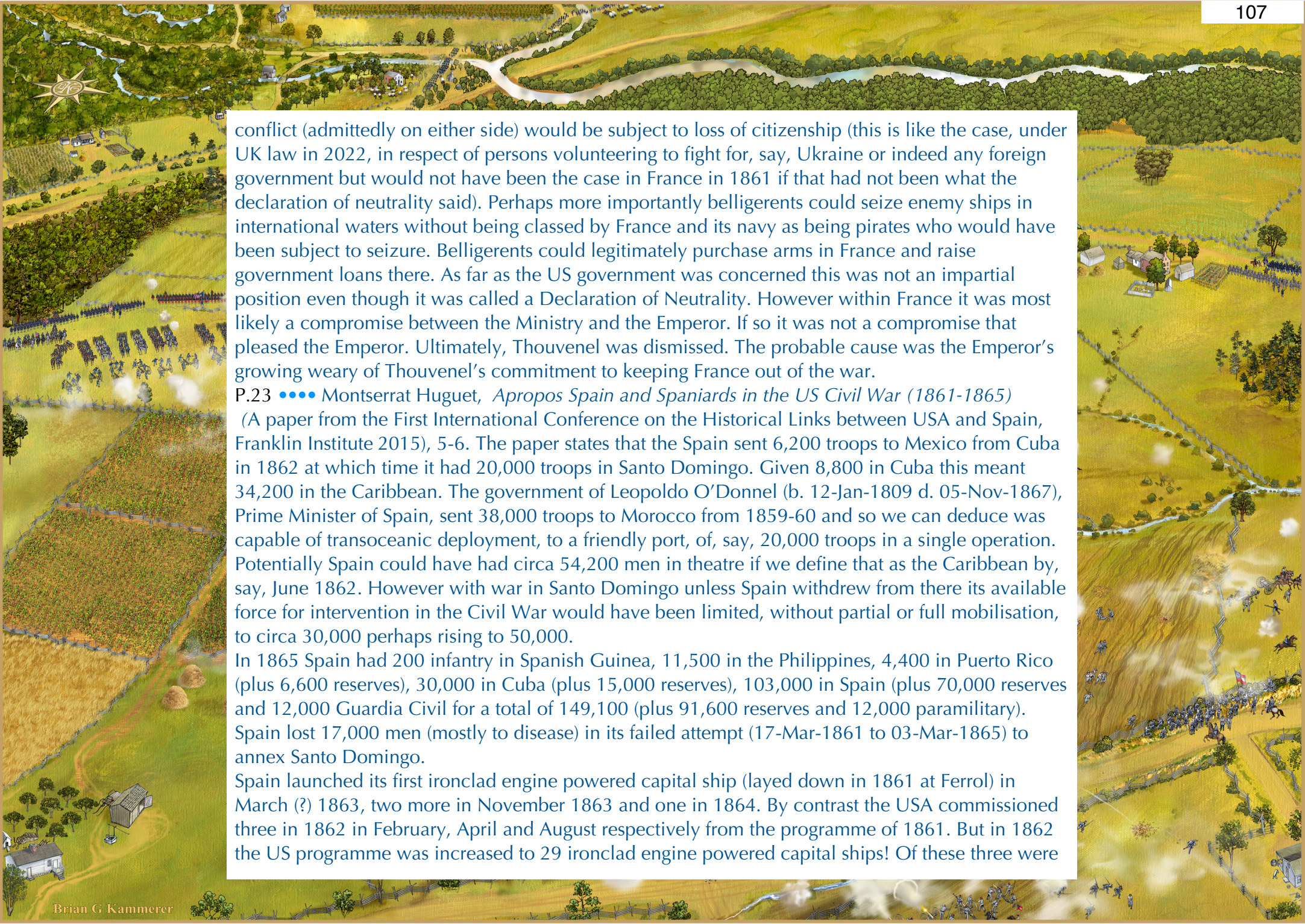
P.23 ••• This was particularly true of Edouard Thouvenel (b. 11-Nov-1818 d. 18-Oct-1866)) Minister of Foreign Affairs (24-Jan-1860 to 15-Oct-1862). The Civil War was not, until after the Virginia convention's second vote against secession on 04-Apr-61 and Lincoln's calling up, on 13-Apr-61 of 35,000 three month volunteers, seen in France as an explosive issue. But in the wake of the call up, which included 3,500 Virginian's, the governor of Virginia announced, on 14-Apr-61, that Virginia was embracing the revolution which meant that a swift defeat of the Confederacy became significantly less likely. Meanwhile the siege of Fort Sumter 12-Apr-61 meant that the





rebellion would not be resolved peacefully. This news will not have reached Paris until circa 10-May-61 possibly later. The question what to do was considered for one month. Nonetheless, until First Bull Run 21-Jul-61 the rebellion was expected to be put down rapidly. The decision to declare neutrality having been made it was only after First Bull Run that the initial decision gave way to the behind closed doors commitment to take the opportunity provided by the conflict to intervene in Mexico (a decision made on or around 21-Oct-61). It is plausible to suppose that from 21-Oct-61 inclusive, or thereabouts, Thouvenel was motivated by the desire to prevent France from over-extending itself until the benefits of its involvement in Mexico were secure. It has also been speculated that France would have recognised the Confederacy in 1862 or 1863, and Thouvenel's "resolute opposition" to recognition, as it has been described, if slavery had been abolished. Irrespective of the question of slavery Thouvenel probably deemed it prudent to prevent the Emperor from escalating the North American commitment beyond the escalation that was already occurring in Mexico. This means his thinking from August to October 1861 was critical. Lacking, as he did, the Emperor's visions of greater Empire Thouvenel brought to the opening period of the Civil War a pre-occupation with narrower issues of more immediate impact. Those that came at him, so to speak, across his desk. The impact on, for example, the 110,000 French citizens resident in the USA, on Franco-US trade and on his own wish to act as a conciliator, if at all, between the two parties so as to limit the negative impact of the war on the French economy. Possibly, as a sop to the Emperor the French government recognised the Confederacy as a belligerent on 10-Jun-1861 within the declaration of neutrality that it announced that day. This declaration was the fruit of the Foreign Ministry and was made on the basis of the recommendation of a Foreign Office committee of experts who convened from May 1861. As such it was possibly not at all the product of the Emperor's mind. In any case the US ambassador in Paris argued to the French Foreign Ministry that without recognition of the Confederacy as a belligerent the Confederacy would surrender since it was only fighting on in the expectation of being recognised as an independent state. The declaration was not the work of Union sympathisers. Rather it should be seen as a compromise perhaps between the leanings of the Emperor and of the Ministry. Recognition as a belligerent would be seen in Richmond as precursor to full recognition. However recognition as a belligerent in a context of declared neutrality was not the same as recognition of the Confederacy as a legitimate and independent government. For example, it meant that French citizens joining the





conflict (admittedly on either side) would be subject to loss of citizenship (this is like the case, under UK law in 2022, in respect of persons volunteering to fight for, say, Ukraine or indeed any foreign government but would not have been the case in France in 1861 if that had not been what the declaration of neutrality said). Perhaps more importantly belligerents could seize enemy ships in international waters without being classed by France and its navy as being pirates who would have been subject to seizure. Belligerents could legitimately purchase arms in France and raise government loans there. As far as the US government was concerned this was not an impartial position even though it was called a Declaration of Neutrality. However within France it was most likely a compromise between the Ministry and the Emperor. If so it was not a compromise that pleased the Emperor. Ultimately, Thouvenel was dismissed. The probable cause was the Emperor's growing weary of Thouvenel's commitment to keeping France out of the war.


P.23 ●●●● Montserrat Huguet, *Apropos Spain and Spaniards in the US Civil War (1861-1865)*

(A paper from the First International Conference on the Historical Links between USA and Spain, Franklin Institute 2015), 5-6. The paper states that the Spain sent 6,200 troops to Mexico from Cuba in 1862 at which time it had 20,000 troops in Santo Domingo. Given 8,800 in Cuba this meant 34,200 in the Caribbean. The government of Leopoldo O'Donnell (b. 12-Jan-1809 d. 05-Nov-1867), Prime Minister of Spain, sent 38,000 troops to Morocco from 1859-60 and so we can deduce was capable of transoceanic deployment, to a friendly port, of, say, 20,000 troops in a single operation. Potentially Spain could have had circa 54,200 men in theatre if we define that as the Caribbean by, say, June 1862. However with war in Santo Domingo unless Spain withdrew from there its available force for intervention in the Civil War would have been limited, without partial or full mobilisation, to circa 30,000 perhaps rising to 50,000.

In 1865 Spain had 200 infantry in Spanish Guinea, 11,500 in the Philippines, 4,400 in Puerto Rico (plus 6,600 reserves), 30,000 in Cuba (plus 15,000 reserves), 103,000 in Spain (plus 70,000 reserves and 12,000 Guardia Civil for a total of 149,100 (plus 91,600 reserves and 12,000 paramilitary). Spain lost 17,000 men (mostly to disease) in its failed attempt (17-Mar-1861 to 03-Mar-1865) to annex Santo Domingo.

Spain launched its first ironclad engine powered capital ship (laid down in 1861 at Ferrol) in March (?) 1863, two more in November 1863 and one in 1864. By contrast the USA commissioned three in 1862 in February, April and August respectively from the programme of 1861. But in 1862 the US programme was increased to 29 ironclad engine powered capital ships! Of these three were





commissioned in 1862, eight in 1863, eight in 1864 and four in 1865 the rest later or never. Nonetheless this programme dwarfed anything Spain was capable of. In the case Spain had recongised the Confederacy and then been drawn into the conflict as a result the period when it could have best altered the balance of naval power would have been April 1861 to January 1862 (before the USA had any ironclad capital ships) or, to a lesser extent, February 1862 to circa July 1862 (when the Spanish fleet of one would have faced odds of between evens and two to one against or again from January 1863 to circa March 1863 when their three ironclads would have faced soemthing between four and six US ironclads. Thereafter, increasingly, war with the USA would simply have resulted in the destruction of their fleet, the likely loss of Caribbean territory and potentially an inability to land any reinforcements in Confederate territory. This knowlege was the main reason Spain would never have followed any inclination to recognise the Confederacy after the first two years of the war had passed. Prudently if it was going to happen in had to in the first year. Actually had war broken out Spain might have increased its construction rate so the matter is a bit more complicated. But certainly time was not on the side of Spanish intervention.

P.25 ●●●● Virginia C-in-C Robert E. Lee an order issued 22-May-1861 *"The policy of the state at present is strictly defensive. No attack, or provocation for attack will therefore be given..."*

P.30 ●●●●● David Detzer, *Donnybrook The Battle at Bull Run, 1861* (David Detzer 2004), 219.

P.39 ●●●●●● 75%

P.40 ●●●●●●● Horse speeds, thanks to a hundred and sixty years of breeding in the interim, are circa ten per cent slower than you would expect on the basis of contemporary horses.

P.49 ● Detzer, *Donnybrook The Battle at Bull Run, 1861* states that there were no watchtowers constructed as at 21-Jul-1861. Near contemporary photographs suggests that they were built subsequently (probably by the time of The Battle of Second Bull Run). Even without the height boost of the towers the terrain was high enough to yield the key observations that were made from the south east "tower" circa 08:35 hours. Our provision of actual towers is, as such, artistic license.

P.49 ●● Detzer, *Donnybrook The Battle at Bull Run, 1861* states that when corn and wheat farmers were harvesting they turned their harvesters shy of boundary fences. I note that this means they would have planted shy of them too. The consequence would be that weeds would grow up around the fences without being cut back or controlled. Fences would therefore tend to turn into hedges. This would not be true for pasture because the grazing animals would eat right up to the fence. Presuming arable farming fences to be



more often buttressed by hedges we make them four times as useful to take shelter behind as pastoral farming fences.

P.52 ●●● The first player to sign up as a Confederate regimental commander will be allowed to play for free.

P.53 ●●● The first player to sign up as a Federal regimental commander will be allowed to play for free.

P.58 ●●●● Longstreet asked for one, then two, regiments from Early's brigade. *William C. Davis 1977 Doubleday and Company Inc.*

P.59 ● Infantry regiment reinforcements deemed to have not eaten for twelve hours before the 05:40 hundred hours start of the battle [this means the 41st New York (two year) Volunteers and the 1st New Jersey (3 month) Militia] are given ten minutes to cook, fifteen to eat and five to clear up, so thirty minutes in total, as at the last time on 21-Jul-61 that they disembark a train. Infantry take ten minutes to disembark and after disembarkation are deemed to spend ten minutes conducting a roll call. While the infantry are disembarking, so zero to twenty minutes in, three orderlies take fifteen minutes to move the field officers' horses off the train (this is reasonable if planks were to hand) and five minutes to feed them. While the infantry are cooking so twenty to thirty minutes into disembarkation the orderlies spend a further five minutes feeding the horses and then water and brush the field officers' horses each of which tasks is deemed to take five minutes more. The officers eat and drink at the same time as the infantry. As such both the infantry and officers are ready fifty minutes after disembarking. The wagons, however, are a bigger problem. The wagoneer and driver can take the mules off at the same time as the orderlies take the field officer's horses off and feed them in parallel but they need help from the infantry to take the wagons off and this takes thirty minutes. Taking the wagons (this is the infantry ammunition wagon we model in the game, but also the food wagon and the ambulance we don't) off therefore delays the infantry by ten minutes even though they remove the three wagons in parallel. Total disembarkation time rises to sixty minutes. Infantry deemed to have eaten within twelve hours take forty five minutes to disembark as they reduce cooking, eating and cleaning time from thirty minutes to fifteen minutes (for coffee). Infantry on a train halted owing to the presence of enemy screens or cavalry within close charge distance by its reaction order or halted by the presence of enemy troops on the track accelerate disembarkation. If the enemy are within 660-1320 yards the disembarking infantry confine themselves to disembarkation and roll call so that total disembarkation time is reduced to thirty minutes. If the enemy are within less than 660 yards roll call is skipped and disembarking reduced to 20 minutes. Embarkation time is disembarkation time plus an extra sixty minutes waiting for trains.



P.65 ●● Brent Noseworthy, *The Bloody Crucible of Courage Fighting Methods and Combat Experience of the Civil War* (Carroll and Graf Publishers 2003)

P.68 ●●● Detzer, *Donnybrook The Battle at Bull Run, 1861*, 270 "Someone with a good eye - Imboden"

P.68 ●●●● Detzer, *Donnybrook The Battle at Bull Run, 1861*, 269 "Poor Francis Bartow was terribly nearsighted and was apparently wandering around on some dusty road,..."

P.71 ●●●●● There are forty five companies with prominently coloured uniforms across the two armies. Twenty seven on the Union side and eighteen on the Confederate side. Eleven with white trousers or jackets; four Union seven Confederate. Thirty two with red jacket or trousers; twenty two Union and ten Confederate. Two in yellow; one Union and one Confederate. There are also one pale, one pink and three light grey companies noticeable at 440-660 yards.

P.71 ● Detzer, *Donnybrook The Battle at Bull Run, 1861*

P.73 ●● There were circa forty aural commands, which officers would ideally know, defined by the US army. Of those whose composition we are aware of we have taken the ones that conform to specified orders in the game. In this way the sound clips played in the game correspond to actual drum beats used at the time.

P.80 ●●● Early J. Hess, *The Rifle Musket in Civil War Combat Reality and Myth* (Kansas University Press 2008), Table 4.3 119.

P.83 ●●●● In the Federal Army, on paper, 60% of ammunition supplies (three wagons probably one ammunition (artillery round) wagon and two ammunition (Infantry cartridge) wagons were held at Division HQ. The other two were, typically (but provision at the battle was highly variable), held one under Brigade control (artillery rounds) and one under regimental control (infantry cartridges)

P.84 ●●●●● Hess, *The Rifle Musket in Civil War Combat Reality and Myth*, Table 4.2 99.

P.84 ● Minié Ball firing - the rifled-musket cost circa US\$20 in 1861. The cartridges cost circa 1.25 cents each so \$0.5 per box of forty. Interestingly by 1870 the price of a rifled-musket had fallen to \$8 partly because repeating rifles were now available for circa \$50. Riding horses cost circa \$200, harnesses \$50 and saddles \$30 although a good cowboy saddle would go for \$60.

P.87 ●● In quantifying the effect of fouling we allow for a) fouled weapons unfouled and b) fouled weapons replaced by unfouled weapons picked up off the ground from the dead, for which appropriate ammunition is possessed.

P.90 ●●● Auth. Multi-shot revolvers were a more effective melee weapon than swords. This would not have



been the case when the cavalry still had single shot pistols (in the early 1840s and before) but the day of the sword-sabre as first choice weapon ended increasingly from circa 1845 as multi-shot pistols became more widely used (by 1860 regular cavalry, or even Confederate irregular cavalry, will have employed almost entirely multi-shot revolvers). In or around 1862 it was noted that revolvers were at an initial disadvantage against sabres because the first round tended to miss and there was often no time for another before the swords struck however once the initial contact had passed the pistol will again have become more useful. Having said that melees were often resolved by the initial contact so for cavalry on cavalry combat, at the risk of losing a multi minute melee, arming with sabres could make sense. Against infantry, by contrast, this initial advantage of the cavalry with sabres would be less. The infantry might also miss with their first shot although they were much less likely to but even if they did the bayonet meant they were not defenceless. Standing off from infantry the pistol would be better although its very short range would mean such standing off had a limited advantage despite the much higher rate of fire than the infantry's small arms.

P.93 • Detzer, *Donnybrook The Battle at Bull Run, 1861*, 381 - The Fifth Massachusetts routed upon its commander being shot and killed.

P.107 Example of a First Bull Run era pasture fence (below).







# An Historical Engineering Production

