15.0 Expanded *Musket & Saber* Standard Rules Designer's Notes

The following is a much expanded version of the summary presented in the Standard Rules.

Musket & Saber is a remake and merger of the old *Napoleon at War* and *Blue & Gray* series, both of which were stepchildren of the original *Napoleon at Waterloo* game. Much of this new game system will be familiar to players of the old, but there have been both significant changes and significant additions. What follows are case-by-case explanations of the design intent behind the rules.

1.1 The Musket & Saber System

M&S originally was planned as two separate efforts, one for the Napoleonic era, the other for the American Civil War. However, with a few minor exceptions in the CRT and a difference in artillery range, the original series were identical. To quote from the original *B&G* Designer's Notes:

*...**Blue & Gray** ... started with the premise that Civil War battles were similar in scale and intensity to Napoleonic battles ...[so]... we could lift intact ... the **Napoleon at Waterloo** game system....Yet ... Civil War battles did differ from Napoleonic battles ... [as] a consequence of the general usage of the [rifled musket] ... This weapon ...[reduced] ... the traditional massed cavalry charge ... to a battlefield relic ...[and] ... reduce[d] the effectiveness of artillery as an offensive weapon...*

The first premise, concerning scale and intensity, is broadly correct. Battles in both eras tended to be one- or two-day affrays fought over battlefields rarely more than a half-dozen miles across. Most of the weapons, both shoulder arms and cannon, were single-shot muzzle loaders. Massed formations could be deployed without prohibitive losses, and horsed cavalry armed only with cold steel could attack infantry in the open field. Only direct fire against visible targets was effective. Communications were limited to the speed of a man on horseback.

The second *B&G* premise, on the effect of the rifled musket, is less accurate. It is true that horsed cavalry receded somewhat in value by mid-century, but not as much as is usually supposed (there were other, purely American reasons at play in the ACW). Artillery, on the other hand, played a demonstrably important role -- on both attack and defense -- not only in the Civil War, but in the two Prussian wars after 1865.

In short, the similarities between the eras far outweigh the differences, so the similarity of the two original series in scale and mechanics was appropriate. *M&S* quickly became a single system covering not only the battles of Napoleon & Grant, but those of the wars before, after, and in between: in other words, a true 19th-century system.

So why a remake? The original series still have a lot going for them: the right scale, quick set up, and a simple set of rules that make the battles accessible. On the other hand, the same simplicity gives us virtually undifferentiated units: artillery is nothing more than long-ranged infantry, while cavalry is faster, weaker infantry in the Napoleonic games and just plain infantry in the Civil War games. For those desiring a more detailed look at the same subject matter, a plethora of other games and systems have been published in the past decades. But there remains a need for a more detailed game retaining the key design elements of the original series: the move-fight sequence, single-phase combat resolution, a simple set of standard rules (8 pages versus approximately 6 for the originals, allowing for different font sizes), and a diminutive game size allowing set up, play, and repackaging in 2 hours or less.

The key to the new system was fixing the crucial flaw in the originals: the combat system, the heart of any wargame. The original system used what was then standard wargame mechanics: indefatigable single-step units deriving their combat strength primarily from size, an odds-based combat results table yielding mostly one-hex retreats (followed by one-hex advances), with unit elimination generally occurring only at extreme odds. The simplest fix would be to utilize reverse-side printing (in fairness, not an economically viable option for the original designers) to enable a greater variety and articulation of combat results and allowing individual units to weaken. That change alone would have justified a remake, but it would not have solved a much bigger problem.

Musket era warfare was emphatically linear. Battles consisted of collisions between solid lines of musket-armed men and/or sword-armed cavalry, lasting until one side weakened and gave way. Given the finite number of men who could be packed into a given length of line, most of these collisions were between relatively even numbers. Nevertheless, they could be quite bloody, an outcome not produced by the retreat-advance dominated CRT.

Most losses in the original games are caused by surrounding an enemy unit with zones of control, then forcing it to retreat. While this does reward superior positioning and timing of attacks -- which means a good gamer can use the system to achieve success -- it does not present an accurate view of the mechanics of battle. Gamers are forced to adopt tactics both counterintuitive and ahistorical.

For the defender, a solid line often is a liability since it opens up the possibility of advances into adjacent hexes. A properly timed set of attacks would see advances into hexes on either side of a given defender, who then would be surrounded by ZOCs and therefore be eliminated if forced to retreat. A safer, if somewhat weaker position can be created by occupying every other hex along a line (the "island" defense). While the attacker can combine more units against a single defender, the most that will be suffered (except at high odds) is a relatively benign one hex retreat. (This strongpoint-and-gap tactic is more egregious in *Blue & Gray*, which allows stacking and therefore yields a stack of two units on every *other* hex.) A rational player will adopt this tactic -- which would horrify his historical counterpart -- except under unusual circumstances.

There are two corollary effects of this tactic. First, the empty hexes between units are invulnerable, since they cannot be attacked themselves. Even if a defender is forced to retreat, the attacker cannot advance into the vacant hex. Secondly, there is no need or utility in placing additional units behind a line to back it up, since they have no ability to assist a retreating unit. Historically, commanders were exceedingly careful to have supports behind a line for exactly this purpose. The erstwhile support units now become available to extend the defender's line, generally much farther than occurred historically.

On the other side of the die, the attacker has two choices. One is to launch attacks all along the line. Rather than causing casualties, unlikely given the CRT, the attacker can hope only to gradually push back the defender. (Once again, *B&G* suffers more in this regard if the misunderstood and oft-misused Attack Effectiveness -rule is used, as the attacker risks enervating his army through Attacker Retreat results; see the discussion at 11.1 below.) Eventually the defender runs out of room, or must fight for a particular point, and the lines thicken, presenting opportunities for surround-and-destroy combats.

The second, and more usual, attack option is to concentrate as much firepower as possible against a single hex to achieve the high odds necessary to cause unit elimination. This requires concentrations of units (especially artillery) far beyond the coordinating capacity of the command-control of the period. From the point of view of the larger battle, it means most turns will see just a small number of highly

concentrated actions rather than a more general engagement.

The above, combined with locking ZOCs, make it relatively easy to block or slow a direct attack. Where historical commanders always feared a broken line, and thickened their armies to prevent it, players of *NAW* and *B&G* can hold most lines thinly, stretching their armies and concentrating on just one or two points. Few reserves are needed. Unless one player has much stronger individual units, combats will be restricted to mid-range odds. The resulting game looks more like a rugby scrum than a battle, the opponents slowly pushing back and forth, hoping for a lucky roll or trying to get one extra hex for leverage.

Depending on the game, the duration of the scrum will vary. In most, usually by design (see below), one player eventually accumulates a decided advantage in sheer combat power, number of units, position, and/or length of front. At that point, the momentum of the battle will increase rapidly, like a snowball rolling downhill. The player with the advantage will start destroying units, even just one or two per turn, which accelerates the snowball. This mimics history in the sense that armies collapsed quickly when they did collapse, but for entirely different reasons (the weakening of individual units, loss of morale, etc.).

This essential flaw in the system meant a battle could make a good game only within certain parameters. Straight-up contests between evenly matched armies do not work well since neither side ever really is able to achieve the positional or numerical superiority needed to start the snowball rolling; in those, the scrum would go on and on. Small battles generally are more difficult to portray because the paucity of counters exacerbates the impact of even a small numerical advantage (*Quatre Bras* in *Napoleon's Last Battles* is an exception). As a result, the battles portrayed in the series fell into one of three basic categories.

First are set-piece battles. Where the armies are relatively evenly-matched *(Austerlitz, Borodino, Ligny, Wagram),* it was necessary to begin the game at a point where the armies have been deployed in a disequilibrium, even on only part of the map (usually a crucial part). This creates a mismatch that must be fed in by both players. Where the armies were mismatched, it was necessary to impose substantial movement (i.e. command-control) restrictions on one *(Antietam, Chattanooga, Fredericksburg, Hooker vs. Lee, Shiloh, Wilderness).*

Second are meeting engagements, where both armies dribble onto the map *(Cemetery Hill, Chickamauga , Jena, Marengo, Quatre-Bras).* In these, the ebb and flow of battle is caused by succeeding waves of reinforcements, each side gaining the upper hand only to lose it later.

Third are the "rescue" battles, often the most exciting form *(Waterloo).* In these, a mismatch gradually is redressed by reinforcements as long as the disadvantaged side does not suffer too much damage in the early going.

The various forms can be combined in a single game; for example, *Antietam* is a (restricted) set piece battle with a small but critical rescuing force. These combinations can be reinforced by ahistorical set up *(Chickamauga, Shiloh),* manipulated time scale *(Cemetery Hill),* or a special rule (the atrocious Union "panic" rule in *Shiloh*). In all cases, the designer was driven to overcome shortcomings in the hex-by-hex outcomes of combat.

Over the years, many modifications and variants have been proposed to address some of these concerns, but they generally amounted to minor additions that did not address the underlying structural

problems. It is this task that *M&S* attempts to do. This has been done, we hope, without adding much complexity. The key points addressed are the weakening of individual units (through losses, disruption, and army morale), the ability to retreat if properly supported, the possibility of catastrophic combat outcomes, and a touch of chaos (Fortunes of War). The scrum has been altered into a more volatile, less controllable mix: defeat can come swiftly, but recovery can be equally swift.

1.2 Game Scale - Hexes
The hex scale of the original (400 meters, approximately 440 yards or a quarter-mile) was acceptable. However, with rigid ZOCs a single unit could occupy a three-quarter mile frontage, one of the reasons the front lines could spread out as far as they did. Decreasing the scale slightly to 352 yards per hex (1/5 mile, 1/3 kilometer) reduces the potential frontage, and allows the presentation of slightly more terrain detail without unduly crimping the battlefields.

1.2 Game Scale - Time
Time scale in the original folios was wildly inconsistent, running anywhere from 45 minutes to four hours per turn, largely due to the need to either allow the combat "snowball" to go far enough or prevent it from going too far. The turns in *M&S* are fixed at 90-minutes as a reasonable time within which a horse-borne command structure could see enemy activity and issue orders to react to it. The number of turns per day varies slightly with the season. The "extra" turns granted by the Fortunes of War will modify this slightly, but only for a few units.

1.2 Game Scale - Units
The unit scale was one part of the original series to be retained without alteration, the "brigade" being the appropriate unit for a battle game: it was the largest unit that could be seen and controlled by one man on horseback, the essential command & control mechanic of the period, and occupied a frontage equivalent to a single hex.

Using brigades in the Civil War games was easy. As a practical matter, both sides maintained comparable brigade organization and size throughout the war. In general both sides fielded brigades of 3-5 regiments (actually battalions) with a field strength of 1,500-to-2,000 men regardless of army, year, or battle. Early-war brigades generally were a bit larger, late war a bit smaller, but the distinctions are somewhat offset by troop quality. Significant size differentials are handled through the use of the battalion counters, which can represent over- or under-sized units, extra steps, and/or "fresh strength." Overall, with the exception of the largest battles, a standard folio will have one counter (including leaders, markers, etc.) for roughly every thousand men on the battlefield.

The Napoleonic period presented a bit more of a problem as the armies tended to be somewhat larger, so each counter had to represent more men. This issue was solved by taking into account the denser and more rigid Napoleonic formations; more men could be packed into a given space (e.g. a hex). This allows the average men-per-brigade to rise to about 3,000 without altering any other game mechanics. The inclusion of Marengo (one of the smallest of Napoleon's battles) and Leipzig (easily the largest) in the first set of folios stretched the system to its limits. The Marengo units have fewer men on average (barely 1,500 each), handled only in part by making many of them single step. In Leipzig, there was nothing for it but to greatly increase the men-per-counter to about 5,000 (with some going as high as 7,000). This is offset, again only partly, by the increase in map scale.

This is not purely a design trick. Both Civil War and Napoleonic battles rarely covered a front of less than two miles, as a shorter front could be flanked easily even by units moving at marching speed. Smaller armies generally spread out more to cover the necessary frontage, making for a thinner line

with fewer reserves (that is, an overall shrinking of the men per yard deployed). For example, the initial deployment at Waterloo consisted of more than 13 men per yard on each side of the front, while at Marengo the main French line along Fontanone Creek was held by only 3.5 men-per-yard, about the same as the Union first line at Shiloh. Since the fighting formations in both periods could utilize only 3-6 men-per-yard, the difference between individual battles and between periods was the depth of reserves behind the line. As a practical matter, Napoleonic units should deteriorate less after a step loss because they possessed the reserves to fill the places of fallen men (see 2.5 below).

At the other extreme, battles rarely expanded beyond a five-mile front as it severely degraded the ability of a single man on horseback to control the battle. Larger armies just got deeper in terms of units held behind the front line as reserves. For example, on the southern face of the Leipzig line on 16 October, Napoleon deployed more than 90,000 men on a 5,000-yard front (18 per yard), just slightly more than the density of Meade's army at Gettysburg. In both cases, the armies had more units than could be deployed on the fronts, but had great depth and therefore could sustain combat on those fronts for extended periods.

[1.2 Game Scale - Units (cont): Just what is a brigade?]

A more important difference between the eras was the inconsistency in the use of the term "brigade." For example, British brigades were comparable to the American (and thin on the ground by European standards); two-to-five battalions with around 2,000 men. Most continental powers used brigades of four -to-six battalions (commonly composed of two multi-battalion regiments). French brigades could field as many as 9 battalions, while the Prussian brigades of 1813-15 commonly had 9 or more. To avoid the need for special rules and/or divergent counter displays, these essential differences between the eras required a rethinking of how units were to be represented by counters: in other words, just what was a "brigade?"

The decision was made to use the term "brigade" in a generic sense, meaning it refers to a number or battalions operating together rather than as a strict hierarchical organization. (Likewise, "battalion" and "squadron" counters portray companies or individuals operating together, rather than a sub-part of a regiment.) Thus, a single hierarchical brigade might have more than one counter (e.g. the Prussians in *Leipzig*), or several hierarchical brigades might be joined in a single counter (e.g. some of the weakened French and Russian divisions in *Leipzig*). See 2.4 below for a more detailed description of this rationale and process. In combination with multiple steps and the battalion counters, this decision gives the designer tremendous flexibility in presenting units.

2.1 [Components] Inventory

The design intent is to retain the approximate size of the original folios: 4-pages of exclusive rules, one 17"x22" map, and 100 counters. However, the rigidity of the available components was a huge drawback when portraying large battles; *Wagram*, *Leipzig*, and Gettysburg *(Cemetery Hill)* suffered grievously. In this system, large battles will be presented either as double-sized games (like *Leipzig*) or as two separate games that can be linked together. On the other hand, smaller battles (*Marengo* and *Shiloh*) can use fewer counters and/or smaller maps.

2.2 The Map & Terrain

The only drawback of the maps in the original series was the limited number of terrain types. The worst offender was "Rough" terrain in *B&G*, which had to serve double duty as hills and actual rough terrain. Woods hexes likewise covered too many variations, with the result that battlefields either were too woody *(Shiloh)*, not woody enough *(Marengo)*, laced with trails to ease movement *(Chickamauga)*, or

covered by special rules *(Wilderness)* depending on the designer's taste. The addition of just a few new types greatly diversifies the ways in which a designer can mold the map to reflect the actual conditions.

2.3 The Counters

The biggest difference between the old and new counters is backprinting, which more than doubles the potential presentation of units. In lieu of either NATO-style symbols *(B&G)* or silhouettes *(NAW)*,the current unit symbols were adopted to give the games the look of a 19th-century battlefield map. Army colors remain conventional, although standardized to the light-on-dark v. dark-on-light arrangement from *B&G* (much like team uniforms from televised football games in the black-and-white era).

2.4 Combat Units

As a rule, the more factors on a unit, the greater the unit differentiation obtainable. The original series used either a single value (combat factor in *B&G*) or two (combat and movement in *NAW*). In both cases, the combat factor was almost (but not quite) exclusively based on sheer size. The *NAW* series did vary the movement factors to reflect doctrinal differences, through there was much more to doctrine than simple battlefield speed. Occasionally, unit strengths were manipulated to reflect qualitative differences: the Anglo-Allied & Prussian armies in the *Napoleons's Last Battles* Quad fit this description, though that appears to be more happy accident than design function (curiously it was coupled with a homogenization of movement allowances).

M&S Combat Factors are a measurement of both firepower (based on the number of men who could occupy the unit frontage rather than the total number of men in the unit) and motivation; unit size is not a factor in firepower, but is built into the step & replacement rules. In essence, combat power is a function of quality, while size is relegated to a unit's endurance in combat.

The separate Morale Rating enables differentiation of combat results when applied to units of varying quality. While the Combat Factor includes morale in the motivational sense, the Morale Rating is morale as "brittleness," determining not so much how well a unit will fight as how it reacts under pressure.

The Movement Allowance includes not only sheer physical ability to cover ground, but also differences in training and doctrine. A separate skirmish rating originally was included, but they tended to be so similar to movement allowances that the rating was dropped in favor of bracketed or unbracketed movement allowances. The separate March Movement rule was created to allow the presentation of clumsy combat units without unduly penalizing their ability to march, where the real-world differences were small (the *NAW Austerlitz* game had a particular problem in this regard).

[2.4 Combat Units (cont): Army Comparison

Joined with the various unit enhancements and detractions -- leaders, battalions/squadrons, charge factors -- the use of three factors allow a unit's strengths and weaknesses to be manipulated in a variety of ways. This flexibility is enhanced by the ability to use several counters to represent a larger organization, so that doctrinal differences (relatively wide in Napoleonic Europe, as opposed to the virtually identical Civil War opponents) can be built into the counters themselves without having to resort to special rules.

Compare, for example, the Prussian and French armies of the Napoleonic period. In the three examples below, one army is portrayed as a sluggish mass with special units, one as nimble and flexible, and another with disparate units but great staying power. These examples illustrate the ways in which the

counters can be used to portray dissimilar organizations, doctrines, and capabilities.

[2.4 Combat Units (cont): Army Comparison -- Prussia 1806

The Prussian army of 1806 had what might be termed the "conventional" organization (and doctrine) for all European armies in the late 18th century. The standard unit was the regiment of roughly 1,600 men, divided into two battalions. The battalion had nine companies, eight of *Musketeers*, one of *Grenadiers*. The two *Grenadier* companies were detached in time of war and merged with the grenadiers of another regiment to form a grenadier battalion. These elite battalions were used to spearhead assaults and form a last-ditch reserve. There also were 24 battalions of *Fusiliers* providing "light" infantry.

Two regiments generally made up a brigade, occasionally augmented by a fusilier and/or grenadier battalion. More often, the latter units were formed into separate brigades to serve as advance guards or reserves. Two or more brigades formed a division, the largest permanent organization in the field (though not existing as such during peacetime). Tactics were strictly linear, focused on rapid musket fire followed by bayonet and/or cavalry charges.

In game terms, the 1806 Prussian army is best represented by a mass of brigade counters representing the line infantry. These units would be strong (good firepower) but slow (representing the staid drill), with moderate morale and no skirmishing ability. Battalions (occasionally brigades) of grenadiers and fusiliers would be present to act as force enhancers and to provide a skirmishing ability.

[2.4 Combat Units (cont): Army Comparison -- the French under Napoleon

The French system was completely different. A French division consisted of 2 or more regiments; 4 was “standard,” if such a thing could be said to exist, which it didn’t because Napoleon liked to tailor his units to the abilities of his generals. Each regiment, a purely administrative organization, could have from 1 to 6 battalions, usually two or three, officially numbering 900 men, often far fewer. The division also normally had two batteries of artillery, one foot and one horse.

Each division had two or three brigade commanders. Nominally, each controlled one or two regiments, but this seems to be something historians have imposed on the French order of battle rather than actual practice. More likely, each brigadier would form a "column" (a group of battalions, not the dense physical formation) out of whatever battalions were available (though as a practical matter this most likely would be a complete regiment when possible). For example, at Quatre Bras in 1815, there were three French divisions, each composed of two “brigades” of two regiments. One division had 12 battalions, one had 10, and one had 8 or 9 (depending on the source). The first division went forward in 4 columns (probably regimental), the second in 2, and the third in 3. In short, the organization was highly flexible and the commanders capable of utilizing it differently in different circumstances.

In combat, the divisional artillery (reinforced or not by corps and army assets) would form a base of fire for the division, although the horse battery frequently was used to reinforce an assault unit. The individual columns would maneuver rapidly, covered by a cloud of skirmishers, seeking weak points in the enemy line. Aggressiveness was prized, so the first impulse in every case was to attack. A repulse was not considered a defeat, just more data about where the enemy line could be breached.

For game purposes, a French division ideally would be composed of two or three brigade counters -- each fast moving and with full skirmish capability -- and an artillery unit. In the *Marengo* game, the

infantry is properly presented, but the French simply did not have enough artillery to warrant more than a weak counter for each division. In the *Leipzig* game, counter limitations forced the merger of the artillery with one brigade to form the divisional "base," while the other represents the "maneuver" element of the division.

[2.4 Combat Units (cont): Army Comparison -- Prussia 1813

Yet another different organization is displayed by the 1813 version of the Prussian army, recovered and reorganized after the disasters of 1806. A regiment now had three 800-man battalions, two of them designated *Musketeers*, the third *Fusiliers;* in essence, each old regiment had had a battalion of fusiliers added to it to give it an organic skirmishing capability. Musketeers and Fusiliers may be likened to line and light troops respectively, although there was less actual distinction than in other armies. In general, the *Fusiliers* were the better troops of each regiment. As before, on company in each battalion was called grenadiers, who may or may not have been collected into an assault battalion for the brigade; they no longer were detached as a matter of doctrine.

A brigade was to be formed of three regiments of three battalion, though in 1813 many formations were incomplete (these deficiencies would be remedied by 1815). The number of battalions per brigade could vary from 6 to 10 (the latter assuming a separate grenadier battalion was formed). The brigade nominally had a cavalry regiment and artillery battery attached, but both these were subject to the orders of corps chiefs and may be dispensed with for the moment.

The new organization had been designed to implement a new combat doctrine emphasizing a continuous battle at a single point (later to be called the *Schwerpunkt*). Like the French organization, the regiments were purely administrative: for combat, all 9 battalions were subject to a *Kampftruppenkommandeur* who reported to the brigade commander.

The first line of the brigade would be formed by two or all three *Fusilier* battalions. These would send forward skirmishers (possibly joined by all or part of the corps *Jäger* (rifle) battalion) until the battle was joined, when the battalions would reunite to form a firing line. This line gradually would be fed and lengthened by most of the Musketeer battalions, which waited behind the firing line, and by the brigade and/or corps batteries. The idea was to wear down the opponent, gradually gaining *and sustaining* fire superiority over the contested point.

The brigade commander would determine when and where a final assault was to be made to break the opposition. This attack would be made by whatever reserve was at hand. In theory, this would consist of the final *Fusilier* and/or *Musketeer* battalions, plus the *Grenadier* battalion if one had been formed. This reserve also gave the brigade commander a rapid reaction force in case of surprise, or a fall back force in case of disaster at the front. The combat system was quite modern and would last through 1914, though the Prussians of 1813 simply were not good enough (yet) to make it work properly.

In game terms, this Prussian brigade (actually a division in any other army) would be represented by a *Fusilier* counter with strong combat and skirmish strengths and one or more *Musketeer* counters with varying strength (many of the musketeers were inexperienced and/or untrained *Landwehr*, the Prussian militia). These weaker counters could be used as independent units, or stacked with the *Fusiliers* to absorb losses since units of the same formation may do so. Other counters might include artillery and battalions of *Grenadiers*, though more likely these would be assets of a higher organization. (The Prussian counters in *Leipzig* are pale copies of this theoretical structure, both because of counter limitations and because the new organization was incomplete.)

2.5 Steps
One of the biggest design issues was how to utilize the flip side of the counters. The idea of using it for different unit 'modes' (attack vs. defense, standard vs. march movement, line vs. column, mounted vs. dismounted) was discarded quickly as the modes could be handled easily using other rules. The final decision came down to whether the flip side should represent the unit after disruption, or as a second strength step. The advantage of the former was that an even wider qualitative variation could be built into the units: Napoleon's Old Guard might suffer after disruption little while raw recruits would become virtually useless. In the end, it was the *Marengo -- Leipzig* problem that decided the issue in favor of steps. It simply allows a much broader numerical range of men who could be portrayed by a single counter. Leaving artillery and cavalry as single-step units also highlights the greater durability of infantry.

The treatment of units after a step loss deserves dome comment. For many units, there is little or no difference in strength or morale after a step loss. This reflects the fact that the units were formed of a more or less homogeneous mass of men: similar training, experience, morale, ability, etc. Other units do suffer after a step loss. This can represent a number of things. In some units, it may be that a thin crust of quality soldiers are leading a mass of indifferent ones; the good ones die first, leaving the dross whose values are lower. In other units, the reduction in values represents brittle morale, soldiers who are willing to fight but become discouraged quickly after a reverse. In a few cases, I allowed thin units (those just barely strong enough to justify two steps) to drop a bit on the second step, but I prefer no to do this. For most units, the quality of the soldiery is consistent, so losses do not affect combat values.

The number of steps in a unit/formation is the sole effect of unit size; no combat distinction is made on that basis. This is because every unit has enough men to man the entire front of a hex, so as a practical matter will have the same momentary combat impact. Numbers become important over time; larger units can stay in the fight longer.

2.6 Artillery & Cavalry
The alternate use of the flip side for Disruption was retained for these units because they are less able to sustain damage or loss of cohesion and continue to function at full power. Artillery was dependent on carefully choreographed teamwork between the gun crews, ammunition wagons, fire control, and so forth, while cavalry formations were notoriously fragile, a combination of the difficulty of controlling horses and because its sheer speed made reforming lines after combat more problematical.

2.7 Battalions & Squadrons
The addition of these units gives the designer great flexibility in portraying larger formations. Battalions and squadrons can be used to represent elite units -- like grenadiers or light battalions -- that enhance line units; their loss weakens a formation by reducing its ability to concentrate combat power. The counters also can be used as cannon fodder, acting as replacement steps but bringing no real strength to the map.

3.1 The Course of a Game
One early decision in the *M&S* design was to require players to "win," that is, to accomplish what their historical counterparts had set out to do. The primary victory conditions thus reflect the situation on the ground first; losses don't count if you win the battle. Only if the battle is a draw are VP counted, and they amount to little more than bragging rights.

3.2 The Game Turn

Random or alternate activation of units have been used in many newer battle games, but they do have the problem of telescoping and/or contracting time. The rigid move-fight sequence was retained to give the games a stronger structure, though chaos (read 'realism') is included through variable movement, more explosive combat results, and above all by the addition of Fortunes of War.

No consideration was given to using separate fire phases for the simple reason that they are unrealistic. Attackers often fired first, defenders preferring to reserve fire until the action got close. When firing did occur, it never amounted to only a single volley; firing would go on for many minutes, at roughly two rounds per side per minute. In both real and game terms, firing was simultaneous The effects of volley are built into the combat results, with players having the ability to vary the outcomes by choosing different tactics.

4.0 Movement
The movement rules generally use standard wargame mechanics. As noted above, the printed Movement Allowances are governed largely by limitations of doctrine, training, and skill. Units with variable *MA* are those whose performance could not be predicted by the commanders (players). A rule initially was included to require all variable or rolled *MA* units to move last, but while interesting it was an unnecessary complication.

4.5 Terrain Effects on Movement
Other than the increase in terrain types, the only new rule here was the slight variations in terrain effects on the different arms. As with a number of other rules, the idea is to point out the differences between the arms.

4.6 Road & Trail Movement
Road movement was a part of *NAW* but had been left out of *B&G* (most variants put it in). It is a necessary adjunct to the game (along with March Movement) because the printed *MA* represent only tactical movement; units should be able to move much farther when not worried about coming under fire.

Roads of the era were not like their modern equivalents, but were relatively wide, flat stretches free of major obstacles. Trails were the same, just less so. In both cases, they were quite narrow (a dozen yards at most) and so cannot be used for deployment into combat. Infantry and cavalry formed lines before coming into close range to avoid being a big target. This forces them off the road into the brush or whatever on either side (i.e. into the hex). Artillery, on the other hand, moved into position directly from march column and thus could come straight off the road. (Infantry could theoretically do the same by "marching by the flank," but that would be dangerous and unlikely to be done at short range).

4.7 March Movement
As noted above, the inclusion of March Movement was necessary to enable units to move the distances they actually covered (games should not force the re-creation of history, but must allow it). As a rule of thumb, it was assumed units could move roughly 2.5 miles per hour on a road, which amounts to 19 hexes in a 90-minute turn.

5.2 Overstacking & Movement
Experienced players will notice there is relatively little damage done by overstacking. This is because at 352 yards across, a hex represents approximately 22 acres, enough actual room for about 100,000 men. Obviously, units need elbow room, but there is a clear difference between the number of men/units that could fit into a hex versus the number who effectively can move and fight there. The

movement penalty represents the vagaries of traffic control in an overcrowded area. Thought was given to an artillery bonus when firing at a massed hex, but again the hex scale obviates its effectiveness. Otherwise, there is no real damage done by packing men into a hex, other than the opportunity cost of not having them available to fight elsewhere. Certainly there is no reason to eliminate a unit or physically push it into another hex.

5.3 Combat Stacking
The combat stacking restrictions are based on hex and unit frontages. The generally small size of artillery and battalions/squadrons enables them to add their strength to a combat. There was no need for any prohibition on infantry-cavalry cooperation because they could and did fight together at even the lowest level. The only place this could not be done was in a charge, a restriction handled by the charge rules themselves.

6.1 Zones of Control Generally
The treatment of *ZOCs* in wargames generally has been problematical; one might almost say schizophrenic. In some cases, they seem to represent actual physical occupation of an empty hex, in others just the ability to throw combat power of one kind or another into it, in still others doctrinal limitations of various units. The latter two forms are used in *M&S*, so that moving past units without *ZOCs* or through certain terrain types can effectively lead to infiltration of an enemy line. The concept of infiltration is not new by any means; it was understood hundreds of years ago, but armies lacked the weaponry to make "modern" infiltration tactics viable.

6.3 Disengagement
Faster units always should be able to run away from slower ones at the ranges represented in these games; there is no separate cavalry withdrawal from infantry, but it generally will be possible in all but extreme cases. Allowing disengagement of stacked units (effectively a "relief of the line," a complicated process but not an impossible one) takes into account the depth of a hex. Disengagement in combat (choice of tactics) is quite possible if the opposing force acquiesces in the separation (that is, chooses a complementary tactic). For all the freedom offered by this and the combat rules, players generally will find it difficult to pull an entire line out of contact.

6.4 Blocking ZOCs
The blocking effect of friendly units during a retreat is one of the biggest single changes in the game (see 7.6 below). The rule is nothing more than an appreciation of the nature of the *ZOC*; since it represents projection of power, it seems only fair that contesting that projection should neutralize it, at least long enough for another friendly unit to run away.

The blocking effect of certain terrain represents the inability to make a power projection into or across that terrain. For example, Deep Woods are considered to be dense, tangled areas where sight is blocked, sounds muffled, and even large units can hide.

7.1 The Combat Phase
The basic structure of the original series' combat phases has been retained. Adjacent units generally must engage in combat, the attacker selects the composition of forces in each combat, and the attacker selects the order in which combats are carried out. Each combat has a relatively simple, unitary result which must be applied before the next combat begins.

That said, there are several crucial changes in this section (discussed in the following sections) that alter the nature and outcomes of combat. All of these changes were made to focus on the outcome of an

individual combat, on the grounds that if one combat works properly in portraying history, then a multitude (the battle) will do so as well. The size of that battle or of the opposing armies (i.e. the countermix) should have no effect.

The results not only are more accurate, they can be more dramatic; lines actually can be ripped open, an attacker actually can advance deep behind the line. This forces players to take two intuitive and historically accurate steps: keep their armies condensed, with solid lines, and maintain substantial supports and reserves behind those lines.

7.2 Potential Combats

Just as game treatments of ZOC are subjective, so too is the treatment of adjacent. Are adjacent units really locked in combat, or are they just outside one another's range but ready to come to grips? Mandatory combat rules err toward the former; *M&S* uses what might be called a "quasi-mandatory" attack rule. Units need not attack, but this requires a show of passivity that would be obvious to a nearby enemy, who might then take advantage (represented by the FOW). On the other hand, the opposing force might be just as happy to remain passive as well, resulting in no combat at all (the system assumes there is some skirmishing, firing, etc. taking place, but at a scale "invisible" in game terms).

One other mechanic worthy of note here is the "soak-off," a poor-odds attack used to meet the mandatory attack requirement that enables a greater concentration against another defender. In the original games, they amounted to an almost passive-aggressive tactic: using the soak off as a sacrifice to enable another unit to remain adjacent to that defender, hoping to force it to attack in the following combat phase. Such tactics remain possible, and sometimes are necessary. However, the addition of routs and *FOW* at low odds makes them far less attractive. See 8.1 below for a discussion of artillery in soak-offs.

[This is in response to a question from a Stones River player who thought the minimal punishment for not attacking a unit would turn the game into an "Attacker's Paradise."] As for "bypassing" units [not launching an attack against a triggering unit], go ahead. True, all they can do is move or charge, but that's not a bad set of options. It may work when the bypassed unit is poor militia or a disrupted organization (both of which are historically accurate), but just try skating by Sheridan's division. On the whole, I designed the system to reward a player who keeps his army concentrated and well-backed with reserves. If you attempt to attack only portions of that line, the other portions will be well-poised to counterattack.

7.4 The Defenders

Each combat is restricted to only one defending hex on the grounds that at this scale, a unit was capable of attacking in only one direction at a time. A lone attacking unit faced with multiple opponents likely is better off trying to disengage or to sit passively than rushing forward into a hopeless combat.

7.6 Lines of Retreat

The “Safe Line of Retreat” rule is probably the most important distinction between *M&S* and the original series. There are several reasons for its inclusion. First, it always seemed unfair that an advancing unit was allowed to ignore *EZOCs* while a retreating unit could not. At the very least, a retreating unit should have been able to ignore the *ZOCs* of enemy units engaged in other combats (attacking other defending units) as their attention presumably would be focused there.

There also is a question of timing, another of those somewhat vague treatments in wargames. If all

combat takes place simultaneously, then advancing attackers (who then throw their ZOC into a path of retreat) would not be where they are when the defender retreats. If the combats are sequential, then a given defending unit would see the approaching calamity and pull back before it was too late. Finally, as discussed earlier, *ZOCs* should work both ways, and there is no valid reason why the retreating unit and its comrades could not dispute a hex long enough to scuttle out of danger.

It is worth noting that an isolated unit still may be destroyed/routed/captured when surrounded by *EZOCs*., and a previous advance still may force a retreating unit to retreat farther than it otherwise would have to. The intent of the rule was to make a unit in a solid line, backed by reserve, reasonably safe, at least for retreating. It also encourages players to position units behind the line to cover withdrawals (how many Civil War reports mentioned “falling back on our supports?”).

7.7 Calculating the Differential
Like all games with odds-based systems, *NAW* and *B&G* are susceptible to “rifle-counting,” the shuffling of units to maximize odds, and even – about as ahistorical as you can get – not committing units too small to affect the odds. The differential CRT was a simple cure for this: for reference purposes, a "+4" combat was estimated the equivalent of a "2-1," "+8" a "3-1," and so on.

The odds at the extremes of the CRT are less extreme than those in the original games on the grounds that since all combats take place in a single hex, the frontage for each side would be the same and it simply would not be possible to pile five or six times as many men into the same space. Effectively, all combats are "1-1" (the primary unit on each side) with nearby supporting units lending a hand.

7.8 Combat Results [and the CRT]
The most obvious change to the CRT is the presence of more exchanges and of new, morale-based results. The purpose of the former, of course, is to increase losses at all odds. You will note that attacker losses are fairly constant until high odds are reached, while defender losses increase steadily from low to high odds. This reflects the different nature of taking losses: attackers lose men while closing in (at low odds it is presumed they will break off before losses become catastrophic), while defenders tend to lose men only after short range fighting begins, or in the course of a retreat.

For those of you expecting more of a differential between the two eras, the simple answer here is that there just wasn't one. Napoleonic firefights were every bit as bloody as those of the Civil War, and the range differential was less than usually claimed: Napoleonic fights were in the 30-75 yard range, Civil War in the 50-125 yard range. (Keep in mind the Civil War era rifled muskets has lower lethality because of lower muzzle velocity of the bullet -- caused by greater friction from the rifling.) Fights in both periods tended to be short and to resolve into a "charge" or retreat fairly quickly. In future games, those including the British during the Napoleonic period and trenches in the Civil War, there will be greater differentiation through special rules. (As an added point, the introduction of the percussion cap had more to do with increased firepower because of the much lower incidence of misfires than in flintlocks.)

The morale-based results are an essential addition to a game at this scale. While losses could be quite heavy in short periods, the more likely outcome of a battle was one side or the other breaking away when the nerve of its men gave out, which usually occurred before a decisive clash took place. For obvious reasons, more experienced and better soldiers were more likely to hang tough, and therefore were more likely to suffer heavy losses.

The rout result was needed because such events did take place; a routing unit not only gives up its

ground, but flees and becomes ineffective for a time. It also affects nearby units by making them question whether they, too, should seek safer turf. These elements are shown by the lengthier retreat, *Disruption, FOW* award, and a longer advance.

Notwithstanding the additions, the primary effect of combat remains the one-hex retreat with opposing advance. Now, however, each side will dribble casualties, while a poor unit is a liability and potential gap in the line every time it fights, even at mid-range differentials.

7.12 Advance
The new *SLR* rule is a tremendous aid to the defender in that units destroyed in the original games now are able to retreat to fight again. Compensating for this is the multi-unit, multi-hex advance available to the attacker. The rationale for the single-unit advance in *NAW* and *B&G* is that a weak advance would mimic the back-and-forth struggle over a particular piece of ground as each side threw in fresh troops (built in there somewhere is the idea that each combat really represents a series of one-unit attack and counterattack, which by itself might have been an interesting mechanic). Now all participating units can advance, and they may move into any hex adjacent to the defender. This is another manifestation of the *ZOC*; if a defender can defend adjacent hexes with a *ZOC*, then the attacker should be able to attack into, and advance into, those same hexes. (It also precludes the oddity of a defending player keeping the attacker out of a hex by *not* defending it, since no advance then could be made into that hex).

7.13 Choice of Tactics
This rule is completely new, an add-on to the existing structure (there was some toying with the idea of making it optional). Standard combat is presumed to be an advance by the attacker until defending fire grows too heavy. After that, the attacker stops to return fire and a general firefight ensues. It is a flexible form of combat, since if the defender proves weak or shaky, the attacker's advance never stops; in effect, it becomes a charge. Likewise, if the defender proves too strong, the attack halts before serious losses are suffered, and the attacker pulls back. For the defender, the default form of combat is to hold the line; too strong an attack leads to a defender retreat, a hesitant or weak attack might open the possibility for a counterattack.

The various tactical choices available represent what psychologists call prior resolution, a decision to abandon the flexibility and commit wholeheartedly to one course of action. All forms of tactics alter the outcome of the combat; a positive result brings greater success, a negative result brings greater failure.

7.14 Coordination
Another new and initially optional rule, coordination is a simple mechanic rewarding players who keep intact the command structure of their subordinate formations.

8.1 Artillery Units
The presentation of artillery in the original series generally is poor. It does appropriately have a support function in that they can bombard in support of friendly attacks. However, the artillery units themselves can act just like infantry, operating in all terrain, attacking in close combat, advancing after combat, and so on. In addition, most games altered the countermix to include too few artillery units, or to make them too weak relative to the infantry units (the *NAW Austerlitz* game is an exception on both counts, at least for the French). As a practical matter, therefore, artillery usually is relegated to making soak-off attacks that ahistorically freeze enemy infantry units in place at even the lowest odds while their nearby brethren are overwhelmed.

The various rules in this section are intended to highlight the differences between infantry and artillery; it remains a support arm capable of considerable effect, but is both limited and brittle in combat.

8.3 Artillery Combat
Artillery fights best when it fights in conjunction with friendly infantry. Artillery caught alone is, and should be portrayed as being, at a disadvantage, particularly regarding the seizure of terrain (with apologies to Senarmont).

8.4 Bombardment
The pure bombardment process has not changed much except to allow for differentiation of range. The real differences are in the combat results, at once both more and less devastating to the defender. As a rule, artillery does not kill well in bombardment because it is relatively easy to avoid it (by lying down, etc.), though such avoidance methods do weaken a units immediate combat power (i.e. Disruption).

8.8 Supporting Fire
The commanders of infantry and cavalry brigades generally outranked their artillery equivalents by one or two ranks; as a practical matter, any infantry commander could press any nearby artillery unit into supporting an attack. On the other hand, such support was effective only when the supported unit was close enough to allow for quick communication, hence the adjacency requirement.

9.1 Cavalry Units
The presentation of cavalry in the original games is even worse than that of artillery. In *NAW*, cavalry units generally are much weaker because of the purely numerical calculation of combat factors, since as a practical matter cavalry units have fewer men than infantry. The cavalry advantages in morale and shock are absent entirely from the rules. As a result, cavalry is nothing more than fast, weak infantry, good primarily for making sacrificial advances or risky "enveloping" attacks around an enemy flank. In *B&G*, the homogenization of cavalry is complete, there being no difference at all between the arms.

M&S cavalry is an entirely different kind of unit: susceptible to *Ineffectiveness*, hampered by most terrain, vulnerable to artillery, but capable of devastating charges. It is powerful, but must be used carefully, preferably against an enemy weakened (reduced and/or *Disrupted*) by previous combat. On the other hand, a single successful cavalry charge can turn the tide of battle.

In the Napoleonic games, the new cavalry rules return the rock-paper-scissors effect of cavalry to the battlefield. In the Civil War games, the role of dismounted cavalry is addressed by the simple expedient of have different counters for the mounted and dismounted roles (of course, in some battles the cavalry is capable of only one or the other; for example, neither army's cavalry at *Stones River* dismounted to fight at any time).

There are no separate rules for cavalry used for scouting and delay; these are more an issue of application than rulemaking.

9.2 Cavalry Combat
Cavalry operating in standard combat is mounted and does conduct charges, but always at a small scale (one troop or one squadron instead of entire brigades). It may cooperate freely with infantry units and is less hampered by poor terrain (on the assumption that there are always clear patches too small to show up at the game scale).

9.3 Cavalry Charges

The inclusion of cavalry charges was a natural outgrowth of infantry charges, though there are more limitations on cavalry -- a real cavalry charge is difficult to set up and timing is critical. The outcome of a cavalry charge tended to be more black-and-white than an infantry charge; either the defender broke and ran, or stood and suffered hardly at all. The potential to make secondary charges after a defender rout illustrates the ability of a single cavalry unit to rapidly roll up an entire enemy line (e.g. Kellermann's charge at Marengo, or the charge of the Prussian *5th Dragoons* at Hohenfriedburg in 1745).

9.4 Countercharges
Yet another potentially optional rule, this was included so that defending cavalry would not have to sit passively while under attack. Together with the disengagement rules, it subsumes the need for rules to deal with infantry attacking mounted cavalry, a rare occurrence.

9.5 Squares
If there are charges, there must be squares. The effect of squares is to all-but neutralize cavalry, at the potential cost of neutralizing the infantry in square; a threatened cavalry charge was a common tactic when one general needed to slow an enemy force.

10.0 Leaders
From the beginning, leaders were seen as enhancements to units rather than as a necessary substructure for operations. Thus, there are no rules for command hierarchy or radii to enable units to operate at full speed. Most commanders are built in to the game structure (particularly the coordination rule), the presumption being that they are present and more or less doing their jobs. An army without leaders is capable of normal operations.

The leader counters present in the game are men who had a supra-infrastructural effect on the course of operations -- in other words, those who did more (or less) than the normal expected of a commander. Including every leader would only clutter the map, and paradoxically give players too much control; they never would allow the scrambling of formations and commands as happened frequently on the battlefield. The leader effects all allow units to do more than normal, which will tend to speed the pace and increase the effect of battle where a leader is present.

10.4 Leader Casualties
No separate rule was included to determine whether a leader is killed, wounded, or briefly incapacitated (e.g. Hooker's concussion at Chancellorsville). The immediate effect in all cases is the removal of the leader in game terms.

11.1 Disruption & Recovery
The *Disruption* rules are a variation on *B&G's* Attack Effectiveness. In *B&G,* any unit suffering an **Attacker Retreat** result in combat becomes ineffective; it cannot attack or enter *EZOCs,* but is unaffected for defense. The overall effect in the game is that a player's offensive capability dwindles far more rapidly than his defensive capability; the armies are left intact but unable to inflict damage.

This is an historically accurate result, but the effects of AE were both too strict – disallowing all attack – and not strict enough – no effect on defensive strength. The effect lasted too long (all day, regardless of the turn suffered), and made players overly averse to attacking at mid-range odds. Additionally, it applied to only certain games (e.g. *Antietam* yes, *Cemetery Hill* no., though this is unclear in the original rules). It was a good concept, but a machete where a scalpel was needed.

In *M&S, Disruption* is both more and less than *AE*. Becoming disrupted is not automatic, and so does not discourage attacks at even odds. *Disrupted* units are affected not only for attack, but also on defense, for morale purposes, and even for movement. On the other hand, recovery is a fairly simple process, though it (properly) takes units out of the line for two turns.

11.2 Step Recovery
The greatly increased casualties from combat are compensated by multi-step units and by the ability of players to replace those units. A lost step represents the death of sufficient numbers of men that a unit is off the map in game terms (though individual soldiers will survive and keep fighting). Recovery is the reverse process, the coalescing of individuals (probably including strays from other units) into a viable formation.

For design purposes, the loss of a step was taken to represent the killing or wounding of roughly a quarter of the men in the step (375/1,500 in the Napoleonic games, 190/750 in the Civil War). Thus a unit could be eliminated and reformed several times in a game without actually being destroyed.

As a rule, the best soldiers lead by example and so are more likely to be hit, thus the reduction in values for some units after casualties and the likelihood of battalions/squadrons being wiped out first. On the other hand, the core of any unit, the cadre of NCOs and junior officers, is unlikely to be entirely wiped out and will serve as a framework for rebuilding the unit. Allowing poor steps within a single unit (e.g. Prussian *Landwehr*) to absorb losses is indicative of this process.

An attempt to rebuild a unit without a replacement step is equivalent to calling on that cadre for one last effort without fleshing it out with manpower. In that case, the cadre would be at risk of catastrophic losses, a long-term result that deserves calculation (in VP terms).

11.3 Effectiveness Recovery
For all practical purposes, loss of effectiveness is equivalent to Disruption, but without the major morale and movement effects. This is appropriate since it affects artillery and cavalry, generally better trained and motivated arms.

12.0 Army Morale
An army is more than a collection of separate units; it is a single organism with a complex hierarchy, elaborate infrastructure, and fragile *esprit de corps*. It never has been necessary to kill everyone in an army to defeat it because the larger organization will begin to unravel as a battle goes against it. This entire section has been added to the game to make such events possible. The first three rules in the section (Headquarters, Trains, LOC Hexes) describe elements of that infrastructure; their functions are based not just on physical dislocation but on the communication of adverse turn of events throughout the army via the "soldiers' telegraph."

12.4 Fortunes of War
The *FOWs* are a simple mechanic subsuming a lot of other potential rules and their effects. The intent of this mechanic is to allow for both the chaos of battle and the development of a momentum to a battle to reward a successful player, but without the inevitability of the "snowball" described earlier.