LAST FULL MEASURE
Battles of the Civil War

Designer's Notes

…for want of a better term:

In 1980 I started modifying Avalon Hill's 1977 edition of Gettysburg's "intermediate" game to put in what I thought was missing; namely; every brigade occupied one hex, regardless of its size; there was no ranged artillery fire; and THAT map! The first two items weren't too difficult to deal with, but in those days, my attempt at a map was worst than what the game already had. My project was never "finished" and the game, and my notes, eventually faded away to the bottom shelf.

Decades later, a YouTube video about the game piqued my interest in it again. I pulled the game out, looked over my old notes, typed them up, designed new counters, and even scanned and enlarged the map to get larger hexes, all of which was posted publicly as a mod to the game. But that map just had to go, and if I was going so far as making a new map, I may as well quit trying to fix this old wreck and build a wreck of my own. Before going that route, I learned someone else had taken the old intermediate game and released it under a new title. I figured why reinvent the wheel and looked into this to find they hadn't done anything but change the map. Basically, the old game never got a new treatment.

If I was going to make a new game, I had to set some parameters. I wanted an "intermediate" level rule-set; rules an average war-gamer would find fairly intuitive. I wanted regiments represented, but the game still be brigade scale at 250 yards per hex so I wouldn't have to fiddle with ranged infantry fire which I felt would complicate things beyond that "intermediate" level. It had to have ranged artillery fire, functional cavalry, a command system, and be what I thought the Gettysburg 1977 intermediate game could have been.

The Map

The first article of secession from the old game would be the map. The old map bordered on unusable, in fact you spent so much time looking at the reference map in the back of the rule book; a friend commented that we should blow that up and play on it. As I think most Gettysburg game maps do, I went to an 1868 survey headed by General Gouverneur K. Warren as my base map. At 250 yards per ¾" hex, the map came out large, but not unreasonably so. I used the entire Warren map which included the area of the "East Cavalry Field" as far south as the village of Two Taverns, and I added some area south of the Round Tops that the Gettysburg'77 map had, but the Warren map didn't. I simplified the elevations to 40' increments from 20', reducing the map to 6 elevation levels and thus reducing the colors used. Elevation and terrain features were fit to the hex grid to eliminate ambiguity. The map feature got more play than in the old game, using more terrain features like; woods, elevation, creeks, the town, stone walls, different road types, and you didn't need a reference map to determine what was going on in a hex.

Regiments

Back when I started modding the old game, I had simply divided the advanced game brigade strengths by the number of regiments in the brigade. When I got more accurate data on actual regimental strengths, I made new counters with that information where 1 strength point represented 100 men. Nearly 50,000 men could actually fit in the area of a hex, but only about 800 men, elbow-to-elbow in two ranks can fit into a 250 yard span, so the stacking limit was 8 strength points per hex. Now a brigade took up space on the map relative to its size. The stacking limit was later increased to 16 SP per hex because I couldn't place regiments where they belonged in the scenarios with an 8 SP limit.

The old game's advanced rules had brigade strengths printed on the backs of the counters that were color coded as a quality rating. I kept a numeric version of this rating because I originally didn't rely on color for information, in case someone opted to print the counters in black and white on colored paper. That rating is referred to now as *cohesion*, and represents training, experience, elan, morale, or basically, a unit's ability to stick together usually based on the unit's performance in the battle being depicted. In Gettysburg it was taken from the old game's brigade ratings, and the regiment's individual ratings were adjusted from various sources. The cohesion rating affects combat, reorganization, recovery, cavalry charges, and other functions where originally, a units quality had no function in the game at all.

Symbolism

I have an aversion to NATO symbols on counters in period games. I also don't personally care for the cartoons of soldiers which I think started with someone plagiarizing Peter Copeland's artwork from several of his coloring books of historical images. While most games using this approach use one image for infantry, another for cavalry, and so on; some use a different image for nearly every counter, and it gets very difficult to see who is who and what is what. Also, in a game where facing is important, I think that it actually hinders the game's functionality. In LFM it may have worked fine, since facing isn't an issue, but again, I personally didn't care for cartoon characters on my counters because, to me, it makes light of the subject matter.

Another approach was to hide the NATO symbols in art that approximated the soldier's uniforms, as I think originated with Ed Wimble and Clash of Arms Games. I actually experimented with that approach as it's very attractive, but typical Civil War uniforms don't differ enough between the branches of service to be functional for unit ID in a game; basically I couldn't come up with something *I* liked. But I did want to impart a "flavor" of the period in the counter art, and the cleanest, simplest way was using the symbology used then, and worn by the troops themselves. The symbol used as a hat badge for infantry during the war was the hunting horn, cavalry used crossed-sabers, and light-artillery used crossed-guns. There's others, but that's outside the scope of the game. Crossed rifles didn't symbolize infantry as a hat badge till the late 1870's.

I photographed actual hat badges, but instead of the usual ones, I used the earlier false-embroidered types just because they're nicer, and proportioned better. Artillery was represented by the top-view image of the guns because the cross-guns image at such a small size could be difficult to tell from crossed-sabers, and because I was originally going to impose facing rules for artillery. This counter-art is now basically, my trade-mark style not only for LFM, but any Civil War related counter-art I do.

Weapon Types

What weapons a regiment is armed with is usually a big deal in regimental scale games, and it should be, but for the most part it only plays up the myth of the rifled musket. If the rifle is god, I'm an atheist. While the rifle was physically capable of great accuracy at longer ranges, that doesn't mean the average Civil War soldier had the skill to take advantage of it, he did not. Battles were typically fought well within 200 yards, and even then, despite the plethora of rifles compared to prior wars, the ratio of ammunition expended to casualties went UP, that is, MORE ammunition was fired per casualty compared to wars fought mostly with smooth-bore muskets. Why is that? Because the real innovation of Civil War weaponry was the *percussion cap* which made weapons more reliable and increased the rate of fire. Combined with expanding ammunition, or the "Minnie ball" which allowed for easier loading, resulted in a weapon that could fire faster for longer before it fouled. Generally, if a soldier received any "training" in his firearms, it was how to load and fire quickly.

Then there was the breech-loader. The breach-loader increased the ease of loading and the rate of fire even more-so by eliminating the ram-rod and 5 of the loading steps of the muzzle-loader. The breech-loading carbine made the cavalry a powerful arm of the army far beyond their numbers.

So, I didn't differentiate between smooth-bores and rifles because they really weren't different enough in effect to point out at this scale. Breech-loaders did make a difference, and they get a DRM. Early war Union cavalry, for the most part, were only armed with a pistol and saber, which made them less effective as dismounted fighters. On the other hand, many Confederate cavalry units were armed almost only with muskets and shotguns and few if any sabers, so would be at a disadvantage in a mounted fight. To represent this, I gave some cavalry units different cohesion ratings on their mounted and dismounted sides based on how they were armed – where I could ascertain how they were armed.

Artillery

Each artillery strength point represents about 4 guns. Most CS batteries had 4 guns, but most US batteries had 6 guns. There was no common denominator between them and 2 guns per SP, as tempting as that was, felt too over-powered. Artillery takes up a LOT of space. A battery is much more than 6 guns; it's also limbers, caissons and their teams, wagons, more caissons, field forge, and so on. A deployed battery took up a lot of area. To keep it simple, I ruled that up to 6 artillery SPs, or 24 guns, could be in one hex. Yes, some units have more than 6 SPs printed on them, they are the exception.

Addendum: I gave in, each artillery SP now equals 2 guns, so a 4 gun batter is 2 SP and a 6 gun battery is 3 SP. Fractions are rounded up for batteries with odd numbers. This required altering the stacking limits to 10 artillery Sps per hex.

In the original game, artillery was hardly represented at all. I had movement issues, and a wider range of influence, but in combat was just another unit. Initially I simply had artillery fire at range during the regular combat phase using normal combat system, and just ignoring adverse results. I wanted something different, and while compiling my old notes I adopted a separate artillery fire system based on that found in George Schandel's *Never Call Retreat*. With artillery fire in its own phase, whether it had fired or

moved became important, hence the limbered/unlimbered rules. Unlimbered artillery can fire, OR limber in the artillery phase. Limbered artillery can move and unlimber in the movement phase as unlimbering is really a function of movement. This was narrowed a little by only allowing the phasing player's artillery to limber during the artillery phase.

Feedback suggested the artillery system made for too much die rolling, and originally I didn't think so, but when I increased the stacking limit it obviously increased the die rolling and the potential damage to a stack. I changed the rule so artillery fire affects only one unit of the firing player's choice in the target hex directly. Indirectly, a failed cohesion roll for an artillery "hit" immediately causes disorganization and if any unit in a stack is disorganized, the whole stack is disorganized, so, the first failed roll, at least, affects the whole stack even if subsequent rolls only effect the target unit.

Facing

In all, the resulting issue of multiple facings within a stack of units in a game that had the counter volume of Gettysburg just wasn't worth the alleged "realism" it wouldn't really impart. In the case of artillery, all the guns in a stack have to fire on the same target, which basically amounts to a facing limitation without physically tracking the counter's facings.

Line-of-Sight

With ranged artillery you obviously become concerned with the line-of-sight (LOS). Without getting into a history of war-gaming LOS rules and the heart-ache and head-aches they've caused, I went with what I hope are the simplest and easiest LOS rules that get the job done while being playable. Rather than using strings and straight edges, knocking stacks about, and judging LOS by interpretation and committee; I went for the "hex-counting method." The concept of a "partial obstructed LOS" considers that while all those guns in a hex might not see the target, inside a one hour turn they are capable of moving a bit so that at least some of them can.

Cavalry

Since the Napoleonic wars, cavalry had probably evolved the most. Where there had been heavy cavalry, light cavalry, dragoons, and mounted rifles; this was whittled down in the US to light cavalry, dragoons, and mounted rifles. At the start of the war, the dragoons had just been re-designated as cavalry. By the summer of 1863 essentially all of the Union cavalry was armed with carbines, mostly breech-loaders such as Burnsides, Sharps, and Merrills. By now, the Union cavalry especially, was probably more correctly termed dragoons, as they were armed to fight mounted or dismounted.

Mounted they were light cavalry whose primary weapon was the saber, though mounted skirmishing with carbines was a regular occurrence. Dismounted they were infantry, albeit breech-loading rifle armed infantry. While we think of dismounted cavalry as skirmishers fighting in open order, they often fought and marched in ranks and files just like infantry. On foot though, there were fewer of them than when mounted, as a quarter of them were holding the horses.

Dismounted cavalry is basically infantry with breech-loader armed cavalry getting a DRM on defense. Mounted, cavalry gets a detrimental DRM when attacking infantry or dismounted cavalry.

Contrary to popular belief, the cavalry charge was not done away with because of the rifled musket. It was alive and well, and used quite often, especially in small unit actions. What was more dangerous to cavalry was not the rifle, but that increased rate of fire over flint-lock weapons. In the end, a cavalry charge is still mainly a duel of unit cohesion, even against other cavalry.

I disallowed mixed stacks of mounted and dismounted cavalry mainly in keeping the rules and stacks on the map simple. That became more important when the stacking limit was increased. While it can be argued that cavalry skirmishing on foot was normally backed up by a mounted reserve, in game terms mixed stacks only complicated things with no real gain.

Command

Representing command and control in a game can be a tricky business. Devising rules for it can very easily become far more convoluted than you want. I wanted a very basic system, but something more than every commander in range of a superior is in command. I didn't want command rules more complicated than the combat rules or that become almost a sub-game within the game. That scratched off written orders, couriers, and didn't care for "orders chits" on a map with enough chits on it already. I did want the "quality" of the commanders to matter somehow, and I wanted there to be some amount of uncertainty to it all; just because you say jump, doesn't mean everyone jumps the way you intended, if they jumped at all.

I didn't feel unit facing was an issue. An infantry regiment can actually change facing pretty quickly, and go from line to column in almost an instant. Keeping with the premise that this is a brigade-scale game, brigade facing is determined simply by how its regiments are arranged on the map something like the extended line markers in other games. So your regiments are lined up along a hex row, and you move one on the end back a hex – you've just refused a flank. Fidgeting with the facing of individual regiments only adds to the complexity and tedium of play without adding anything to the quality of play. In the time-frame of a one hour turn, it's unlikely a regiment can be enfiladed by another regiment unless it's focused on something else, and the "flanked" rule covers that contingency quite well. I considered facing in the case of artillery units, but again at this area and time scale, it's not necessary. A battery could and did adjust itself quite a bit without having to limber. I envisioned reducing firing effect when the unit had to change face to fire on a target, but what it really did was create more fiddling and undo complexity.

In this system, your wanting a corps to attack is your "order." Will the commander do what you ordered? That's the die roll. The die roll also represents, to some degree, time to get the order, understanding the order, and not getting the order at all. Low rated commanders might not be relied on, while good ones can be, more often than not. Command only decides whether regiments can enter a ZOC or not and doesn't affect movement, combat, organization, etc. Division commanders have the added burden of the condition of their division. They get an adverse DRM against their command rolls for each brigade in the division that is shattered. It's not unreasonable to think that a division commander might balk at attacking with his division if he feels it's in bad shape.

Initially I had a detrimental DRM for commanders rolling while out of command, but in play it didn't feel right, and it seemed to be too big of a hit. If I had gone with using a D10 it may have worked better, but the simpler fix was to make it a straight die roll with a positive DRM when in IN command range. Commanders will now tend to be in command more often than not I think.

The premise of regiments passing command to adjacent regiments in the same brigade is something I house rule into nearly every game I have with command rules; it just makes sense, and lets me keep the brigade commander's command range close and tight while still able to command his brigade on line.

The idea of using a chit-pull system was considered, and while I think it works in some games, I didn't care for it here. On a larger scale, like a whole campaign, I think it would work well, but not down here, an army on the battlefield just doesn't work that way. Still, I almost went for it; though instead of a chit for a specific formation, pulling a chit for your side would allow you to move any *one* of your formations you choose. If you folks at home are madly in love with yanking chits from a cup, I suggest this is the route you take; just make chits in two colors enough for the number of formations on the map; US corps, CS divisions, whatever you like.

What eventually went into the rules was simply rolling to see who gets to go first in a turn because that's what felt best for what I was after. I tied it to the command value of whoever was commanding the army at the moment to determining who had the initiative for that turn.

It wasn't an issue in Gettysburg, but as I developed other battles, more often I had regiments that were detached from their brigades. The Brigade Integrity rules required them to move to join their brigades, but they were historically detached for some reason such as guarding an approach, the trains, etc. This prompted a new marker and rule for Detached Regiments.

Breastworks

I almost left breastworks out of the game, but at Gettysburg some pretty substantial works were thrown up, and thinking of future titles that might involve dealing with field works, I kept them in. Originally, only infantry could throw up works, but I allowed dismounted cavalry to as well, and finally let artillery in on the fun – I mean who has more access to axes and shovels than the artillery?

Walls

I couldn't include breastworks and then ignore stone walls. Figuring out where there were stone walls at a particular battle, was another matter. Where they figured in the fighting was usually easy enough – where they didn't figure in the fighting, or where there was no fighting, that was more difficult. The Warren map shows walls and fences and their types, but most maps don't, unless it was again, a factor in the fight. In trying to find where they were I've seen stone walls attributed where there hadn't been any, and all sorts of fences and walls lumped together generically as "fences."

Combat

The combat system is virtually the same as the old game. Brigades now have more steps, in the form of regiments, to take losses; so they aren't immediately shattered, and there's more DRMs involved. The CRT is also a little less bloody than the old game.

When a combat succeeds in vacating a hex, the units involved in the attack can advance not only into that hex, but into hexes adjacent to that hex, typically putting the attackers next to now disorganized regiments. Combat continues as long as there are units in a ZOC, so an attack can potentially move across the map for quite some distance. There are positive and negative aspects to this, a particularly successful assault can "roll-up" a line, or get itself so far from its own supports that its easy pickings for a counter attack, and the tide reverses – maybe. Players will have to consider whether an advance after combat is the right thing to do or not, or how far to fall back when retreating, since the retreating play has the option to retreat 1 or 2 hexes, but the advancing player may only advance one hex. A 2 hex retreat can stop an assault, or open a flank and make things worse.

Because only 8 SP in a hex can participate in combat, combat tends to be at low odds unless the attacker can get more than one stack into a fight. This gives artillery the job of trying to make a hole in a line that will create a place for the infantry to attack. A one-hex hole likely won't be enough with locking ZOC, so massing artillery against specific points in the enemy line becomes important. Artillery can seem over-powered, but it's a point attack weapon and has to be able to see what it's shooting. There's also a lot less of it compared to infantry, and even cavalry; and it has a difficult time moving off roads. Getting your artillery where it's needed, when it's needed will give you an appreciation of the skills of the Civil War's artillerymen.

Loss and Recovery

This is a brigade-level game. Regiments are basically step-losses for brigades. When a regiment is eliminated it's not "dead" but rendered "combat ineffective" which typically means they ran away or routed. As losses are incurred, brigades will need to be pulled back to recover, especially if they're shattered, or at risk of being destroyed. Any regiments not recovered by the end of the night aren't coming back, and move into the permanently eliminated box. Because recovery is slow and a bit uncertain, there was no need for rules regarding eliminating "surrounded" units, or for units surrendering, which would mean more rules for little gain.

Army Morale

Many games of battles such as Gettysburg have some element of each side's army moral by which the army will nearly cease to function if losses are too high. Here, when a brigade looses half or more of its strength, it's shattered and cannot operate offensively. Enough shattered brigades and divisions won't accept commands. In effect, this performs the same function without the need of separate record keeping of an overall morale.

All My Burning Bridges

There are often several bridges on a map, those that cross rivers especially are usually very important and sometimes during a battle a bridge was burned, or at least an attempt was made. Some maps may have certain bridges that can't be burned, or have already been burned, or otherwise destroyed. This probably won't be an issue in most games, but the option is there.

Pontoon Bridges

I considered the possibility of laying a pontoon bridge in some future title.

In figuring out how to treat it, I found the Army of the Potomac bridged the James River in 1864 with what is still the longest temporary military bridge in history, a 2,200 foot long pontoon, in one day (3 hexes). The best I could determine was that it actually took as much as 16 hours once all the equipment was brought up. That's about 138 feet an hour, or in game terms, between 5 and 6 turns per hex to lay a bridge. On the other hand, another source claimed a bridge was laid at a rate of 2 to 3 yards per minute which, going with the 2 yard rate, meant that 2,200 foot bridge went down in slightly over 6 hours!

In game, it would likely be 1 hex, and sometimes 2 hexes, being bridged. At 2 yards a minute, it would take 2 hours (turns) to bridge one hex. That's pretty much the same as building breastworks. So, there may be pontoon bridges appearing in a future title after all.

Victory Conditions

I didn't care for the terrain specific victory point sites in the old game. They only served to get players to aim for map locations that figured in the historic battle. I feel the goal of both sides was simply the other side's destruction. Circumstances brought your armies here, what you do here will depend on *your* interpretation of the ground and how you might use it, which may not resemble the historic event in any way. In some cases there are, specifically, geological objectives, such as the passes in South Mountain. As such, the victory conditions will take that into account.

Typically the only terrain worth VPs will be the map edge road hex that is one side or the other's historical retreat route. There may be more than one and their value may vary depending on how itchy that side was about protecting their way to skedaddle off the map.

Your battles may not follow quite the course that history took, but history stopped the turn before your game started, where things go next is between you, your opponent, and the map edges.

What to Call It

Finding a name for what at first was just a Gettysburg game, that wasn't already being used, and wasn't cliché is tough. As idea for further battles popped up, and the game became a system, a name that would tie them all together was more important.

I also wanted something that didn't make light of the subject. I wanted something respectful of what those men went through for their causes, because you cannot research these battles without finding anguish, sadness, and great loss right beside the glory and pride. Nothing written or said touches on this better than President Lincoln's address at the dedication of the National Cemetery at Gettysburg. I hope these games will impart some appreciation for those men that gave their Last Full Measure.

But Wait, there's More!

Here we are several years later and there's something to add concerning the first major rules change. Working on what at the moment is the latest installment of Last Full Measure required dealing with elevation and movement differently than the previous titles. *The Maryland Campaign's* elevation increments are at 100 feet per level as opposed to 40 feet, the same as *LFM:South Mountain*, but how movement up and down elevation changes was handled in SM always felt over-simplified and really didn't address the steepness of the terrain. For *The Maryland Campaign* units pay a hex-side MP cost for each level of change between the hex they are leaving to the hex they are entering, up or down-hill. The cost is higher for cavalry and artillery than it is for infantry. So, if a unit is moving into a hex at a different elevation than it's own hex, it has to pay MP for each level of difference between the two, plus the cost of the hex itself. *South Mountain* will use this rule word-for-word. I decided to permanently port a modified version into the general LFM rules. In all other LFM titles (unless stated otherwise), one level of elevation change while moving is free, as it has been, but **each** level of change above one will cost additional MP as explained above. Roads, trails, and the like will negate that cost. This change deals with steep terrain better than it originally did in *South Mountain*.

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