

Historian's Corner



- Part 3 -

DOTMLPF ARTILLERY INSIGHTS FROM THE AMERICAN CIVIL WAR: ORGANIZATION

An eight-part series by Dr. John Grenier, the FA Branch Historian

The “O”—of course—is for organization in the DOTMLPF model. The federal and the confederate artillery arms struggled to find the best organizations for their guns, personnel and logistics networks. A wide-spread, pre-war Field Artillery (FA) organization to build upon was almost non-existent. Prior to the American Civil War (ACW), the Army could afford to field only four six-battery regiments of FA. Each battery consisted of six guns divided among three two-gun sections. It parceled out, or dispersed if you will, both batteries and sections to the Infantry companies that garrisoned remote forts and stockades, which made most FA units “self-contained” and unfamiliar with working in coordination with other artillery units.

The pre-war preference and practice of dispersal (versus concentration) of FA remained the norm throughout the first two years of the war. The Army of the Potomac (AoP), for example, dispersed its limited FA assets among Infantry regiments, with one battery per regiment; it sometimes held a battery in reserve at the division level. There was no concept of a divisional artillery (DIVARTY, which did not appear until 1941) to command and control (C2) as well as deconflict the division’s fires from its multiple regiments’ batteries, nor was there anything that resembled a corps artillery, despite the corps proving itself time and time again as the war’s decisive unit of maneuver. Most importantly, and damagingly for FA efficiency and effectiveness, dispersion vested Infantry commanders with the authority and responsibility to C2—and to organize, train and equip (OTE) before they ever went into battle—their attached FA batteries.

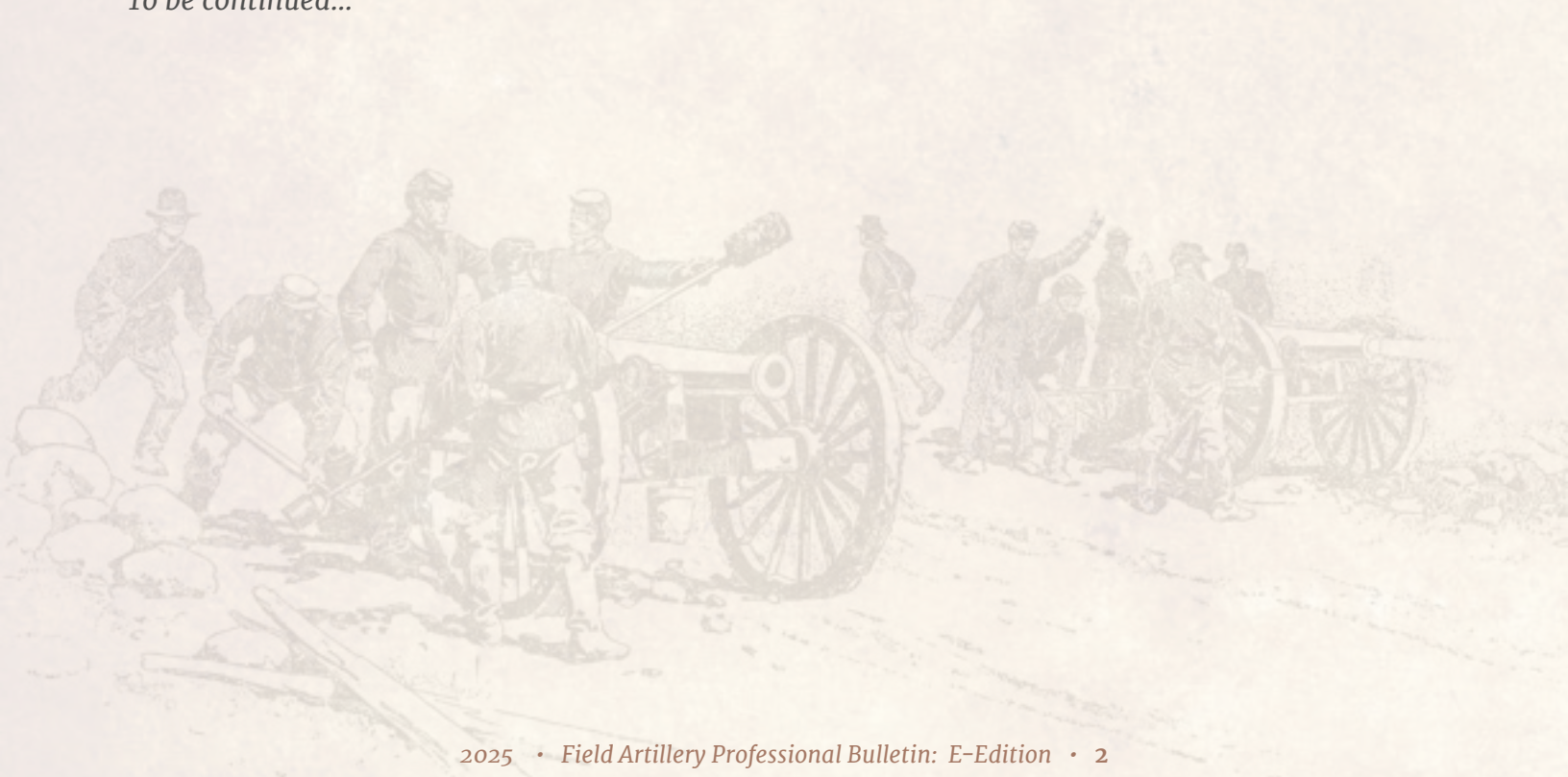
The federals took far too long to recognize the inherent flaws in that system. As late as September 1862—eighteen months into the war—the United States government ordered that states continue to call their artillery into service by batteries and attach them to the states’ Infantry regiments. The mistaken assumption remained that an Infantry regiment’s staff could perform all the functions of an artillery regiment’s staff, and the latter were “essentially of no use in wartime.” So much, then, for the concept that artillerymen are best suited to command and OTE artillerymen. This changed by 1863 with the formation of FA brigades in the federal armies, but those brigades focused solely on what we know as administrative control (ADCON), and Infantry commanders retained operational control (OPCON) and tactical control (TACON) of the batteries. The AoP, at least, recognized that Redlegs knew how best to address the FA’s needs in terms of matériel. Once in service, though, there was no mechanism in place to bring together the less experienced (and in many cases less capable) state FA batteries with the federal batteries. Of the 460 nominally federal batteries (indeed, the war-time growth in the artillery arms was extraordinary) that served during the war, 163 served in federal regiments and 297 served in independent batteries. The two streams did not cross: integration and

interoperability of the different “components” of the FA branch clearly were not concerns of ACW-era fire supporters to the extent that they are today.

Both the federals and confederates experimented with different FA organizational mixes and structures. William Barry, of the Barry Board, recommended to General George B. McClellan, commander of the AoP from July 1862 to November 1862, that he field three guns (vice one) per regiment (as alluded to earlier, there was a massive influx of Redlegs into the Federal Army which gave Barry and McClellan numbers with which to work) until his troops gained seasoning as effective infantrymen. Although McClellan supposedly was the great organizer of the AoP, he manifested little understanding of how best to organize his FA batteries, and he preferred a 1:1,000 gun-to-Soldier ratio. General Braxton Bragg thought Major General Earl Van Dorn’s Confederate Army of the West that fought at Pea Ridge, Arkansas in March 1862 possessed too many FA pieces at 94 guns for 16,000 troops per gun (or approximately a 1:170 ratio). Bragg noted “No treasury could stand such expenditures,” and more significantly, the “excess” of artillery “would effectually destroy the efficiency of any force to be this encumbered by the most unwieldy of arms.” Captains Career Course students at Fort Sill, Oklahoma will soon conduct staff rides at Pea Ridge, so they will be able to make their own assessments of Bragg’s policy as they walk the battlefield and ponder how they might have employed their cannons.

Barry moved to the Western Theater for the 1863 campaign, and he became General William T. Sherman’s Chief of Artillery. He convinced Sherman to field three guns per regiment; for the 1864 Atlanta campaign, Sherman changed the ratio to a bit less than two guns per 1,000 Soldiers, primarily to increase his army’s speed on the march. Even though concentration of FA was becoming the norm by 1863, it still could not produce overwhelming battlefield effects because of technical limitations (see next week’s article). Most of the positive changes in FA organization occurred on ad hoc bases, and they were the results of visionary (we need only compare Sherman’s reputation to McClellan’s or Bragg’s) commanders’ willingness to question their pre-war prejudices (from the Latin, *prae* [before] and *iudicium* [judgement]). In short, leaders’ prejudices—or “mental short cuts”—while thinking through the problems before them set up FA’s ineffectiveness in the war. If we take any lesson from Redlegs’ experiences in the ACW, then let it be that we must fight hide-bound thinking and willful ignorance at every opportunity. We do not all have to be visionaries like Lee or Sherman, but none of us should purposefully position ourselves as blocks in the road to development and innovation.

To be continued...



Historian's Corner



- Part 4 -

DOTMLPF ARTILLERY INSIGHTS FROM THE AMERICAN CIVIL WAR: TRAINING

An eight-part series by Dr. John Grenier, the FA Branch Historian

Training (the “T” in DOTMLPF) of Redlegs in the pre-American Civil War (ACW) Army was atrocious. The Federal Army maintained the Field Artillery (FA) branch in peacetime solely to train recruits, but shortages in ammunition—”practice in gunnery is a heavy expense to the government”—meant that dispersed batteries rarely engaged in live-firing training. Note that there was a significant difference between the FA and the Coast Artillery (CA), which manned the guns at the nation’s small complex of seaport fortifications. The siege of Fort Sumter, South Carolina in April 1861 demonstrated just how feeble stationary harbor defenses based on cannons were against land-based attacks, but that is a different story for a different place. Returning to the pre-war training of FA officers—they devoted some of their time to “book learning” and called it “going to school.” According to a Confederate, “to be an expert artilleryman was much of an education”—an idea reinforced by a Union officer who said, “I tell you Artillery practice is a big thing to learn.” Officers faced only oral, not practical, exams that certified them as an FA professional, and most of their duties centered on administration and working with their non-commissioned officers to ensure good order and discipline within their batteries. There existed no program of continuing education and follow-on training for federal artillery officers, who were responsible for ensuring the combat readiness of their batteries. It’s difficult to see the pre-war training regimen as anything but a case of the blind leading the blind.

Outside of federal service on the frontier, most FA pieces, in both the north and the south, resided in state militias. The standardization of training across them was unheard of. Because few experts from the pre-war Army stood ready to direct the training of the mass influx of recruits in 1861, self-learning and ad hoc training continued as the primary approach to prepare Redlegs for battle after the war started. Artillerymen on both sides knew their abysmal training destined them to relative impotence. Despite recognizing the need for better training and education, the U.S. Army did not create a school specifically for artillery instruction—the School of Fire, the progenitor of today’s Field Artillery School—until 1911. Across the Atlantic Ocean, King Louis XIV of France (r. 1643–1715), who most famously ordered the Latin inscription “ultima ratio regum” (“the last argument of kings”) be engraved on his army’s cannons, formed five artillery academies in the late seventeenth century. The British Army opened its Royal Military Academy at Woolwich “to produce good officers of artillery” in 1741, and the Prussian Army under Frederick the Great saw a massive expansion of artillery regiments in the Seven Years’ War (1754–1763 ... yes, we know that is nine years, but it’s still called the Seven Years’ War) along with exercises and “war games” to integrate them into brigades that could support Infantry and Cavalry corps. The U.S. Army in 1861 was plainly generations behind European armies in its FA training. Once it ramped up a simulacrum of a training program, it found that many of its instructor cadre lacked the expertise and experience to perform their duties. Most Redlegs therefore learned their craft in the “School of Hard Knocks.” Remember that, especially when today’s FA takes “superstar” non-commissioned officers, warrant officers and company grade officers from field units and sends them to the Field Artillery School to serve as instructors. The U.S. Army Training and Doctrine Command’s (TRADOC) motto “Victory Starts Here”—at the FA School—is something we should all pay attention to. *To be continued...*

Historian's Corner



- Part 5 -

DOTMLPF ARTILLERY INSIGHTS FROM THE AMERICAN CIVIL WAR: MATÉRIEL

An eight-part series by Dr. John Grenier, the FA Branch Historian

The plethora of new technologies that sprang from the Industrial Revolution of the nineteenth century has conditioned historians to see the American Civil War (ACW) as the first industrial war and a precursor to World War I (WWI). Matériel (the “M” in DOTMLPF) and technology are inseparable in historical analysis (there is an entire subfield of history known as the History of Technology, for example). Students of the ACW have therefore assumed that “new” (circa 1860) cannon and ammunition technologies produced the same effect on battles and the war’s outcome that they usually attribute to rifled long arms, railroads and telegraphs. The entering argument, Dr. Earl Hess notes, is that rifled cannon “revolutionized combat because of its capability for long-distance firing, about 500 yards compared to the smoothbore’s 100 yards,” and rifled muskets (with volley ranges of 600 yards) rendered shorter-range smoothbore cannons “ineffective while confronting Infantry.”

The evidence, however, suggests otherwise. Long-distance artillery fire tended to be ineffective, as the fuzes that ignited projectiles regularly failed, and neither side possessed the communication technologies necessary to command and control effective indirect fires. In addition to this, long-distance explosive ordnance produced relatively low levels of bursting power and splintering capacity, which made them of little use as anti-personnel rounds. The “fuze problem” in fact led to Field Artillery officers simply not bothering to put them in explosive shells; they regularly used explosive rounds as less effective—at least in terms of anti-personnel rounds—solid shot. In the era before recoilless mechanisms (which did not become common until the late 1890s), “working the guns was a laborious process,” which meant that crews struggled to “stay on target” after pulling the lanyard. Creeping or rolling barrages, which required exquisite timing, coordination and absolute accuracy to prevent fratricide, were not common until WWI. Rifles and the railroads that could quickly move tens of thousands of Soldiers to a battlefield proved the dominant battlefield technology of the war.

Although junior FA officers were eager to use rifled cannons “as the latest improvement,” senior officers remained committed to smoothbore guns because they offered a proven technology. Two weeks ago, we argued that the Army must fight hidebound thinking and prejudices, but we also need to remember that sometimes the “old ways” become the old ways because they work. According to Colonel Frank Huger, one of the most respected confederate artillery officers, rifle projectiles during the ACW generally “either burst...in the gun or else they do not go straight.” Huger was especially disappointed with the Richmond (Virginia) Armory’s 20-pound cast-iron (vice bronze) muzzleloading rifled Parrott guns, which were copies of the cannon that Robert Parrott, a former FA officer who resigned from the Army in the mid-1830s to become the superintendent of the West Point Iron and Cannon Foundry, first developed in 1860. Some artillerists nonetheless continued to debate the proper mix between smoothbore and rifled cannons in a FA regiment, much like how we discuss today the ratio of tube and rocket/missile artillery in our formations. Note that rockets made their appearance in the mid-nineteenth century, but their erratic trajectories made them almost useless. Huger “was out with the rifled guns” by the middle of the war, and he wanted smoothbores to account for four of the six guns in each confederate battery. Henry

Hunt, on the federal side, insisted that rifled cannons comprise, at a maximum, only 50% of the guns in the Union artillery arm. By late 1862, Robert E. Lee wanted only 12-pound Napoleon smoothbores for his artillery. He looked to abandon 4-pound, 6-pound and 24-pound smoothbores and rifled Parrott guns to “simplify our ammunition, [and] give us less metal to transport,” he explained. Lee was particularly concerned with the “larger caliber, longer range and with more effective ammunition” guns, compared to the four and six pounders of the federal artillery arm. He became convinced that sturdy and highly reliable 12-pound Napoleons might offset those advantages. Dr. Hess explains in his book “continued reliance on the Napoleon was thoroughly grounded in pragmatic consideration, rather than symptomatic of widespread resistance to change.”

Still, some artillerists prattled on about rifled cannons’ advantages over smoothbore pieces in counter-battery fights. Infantry commanders—who directed the employment of FA assets on the battlefield—could not have cared less, and they directed artillerists to uniformly focus on supporting the Infantry, which meant Redlegs faced “absorbing” adversary counter-battery fires. General Winfield Scott Hancock, for example, ordered his Redlegs to ignore Lee’s artillery at Gettysburg and to “save artillery rounds for punishing confederate Infantry at close distance [rather] than to waste it in long-distance counter-battery fire.” While, as noted in an earlier entry in this series, rifled musket fire as much as artillery fire savaged George Pickett’s division, Hancock’s orders give us insight into why Redlegs devoted executing most of their fires at ranges within 50 yards. Long-distance firing, or at ranges beyond 100 yards, was comparatively rare because commanders insisted their artillerists hold their fires to punish the enemy’s Infantry at close range after an initial few tries of long range produced little impact. “Evidence is overwhelming that officers and men alike did not use the weapon [cannons] for long-distance firing,” Hess concludes.

Perhaps today’s discussions about Multi-Domain Operations and long-range precision fires—the Army’s number one modernization priority—might benefit from some historical context. The historical profession will caution us to be extremely wary of adopting technology for the sake of adopting technology. To mix metaphors, we should always curb our enthusiasm for the shiniest thing that draws our attention, and we must remain careful not to throw the baby out with the bath water when we assume that the newest technology will enable us to replace proven technology.

To be continued...

