The Loose Marble — and the Origins of Operational Art

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Sometimes the simplest and most obvious metaphors give rise to some of the most penetrating insights, and often the most commonplace analogies in our everyday experience drive home to us the depths of our ignorance. A student once remarked that there was a "loose marble" rattling around in the doctrinal box that contains our knowledge of operational art.[1] The sense that student sought to convey was that at the core of our professional knowledge, our doctrine, there was something that no longer fit or belonged. As it turns out, this "loose marble" is the hard residue of the Napoleonic heritage of our classical style of military art. It is a conceptual vestige that in some ways is irrelevant and tends to cloud the true nature of modern operational art.

When we teach and write about operational art, we are essentially providing an interpretation that bears the encrustation of all of our classical military "prejudices and enthusiasms."[2] Particularly, we are attempting to explain modern operational art in terms of its antecedent, classical military strategy. These two styles of military art—operational art and classical strategy—are qualitatively different and distinct in fundamental ways. To try to explain one in terms of the other is like trying to explain the "appleness" of an orange, or the "inchness" of an ounce. Unless we understand as a profession the distinction between classical military strategy—particularly its terminal Napoleonic variety—and operational art, "loose marbles," like the Napoleonic concept of the center of gravity, will continue to rattle down our doctrinal corridors. Failing this, we will lose much of the richness and value that writers like Clausewitz, *properly reinterpreted*, have to offer, as well as obscure the essence of operational art.

The purpose of this paper, then, is to determine those unique and essential characteristics of operational art that distinguish it from classical military strategy and to establish roughly that point in history—the American

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Civil War—when the sum of these operational characteristics coalesced to give rise to this qualitatively distinct style of military art.

The Strategy of a Single Point

Napoleon stands Janus-like on a high summit in military history. Faced to the rear, Napoleon gazes back across 2000 years of warfare to predecessors who had all believed that the crowning achievement of a successful campaign was the decisive battle of annihilation. Faced to the front, Napoleon's vision of the employment of several corps in distributed maneuver anticipates a revolution in warfare that ultimately would lead to operational art. In the final analysis, however, Napoleon must be viewed as the last great practitioner of a style of warfare that would become virtually outmoded within a generation of his death. This style of warfare has been aptly termed the "strategy of a single point."

In 1937 the Soviet military theorist G. S. Isserson revised his historical overview of the evolution of operational art. He characterized the style of warfare practiced throughout history to the middle of the 19th century as the "strategy of a single point."[3] Isserson's insight is still important because it establishes the baseline characteristic of warfare prior to its evolution to the operational form. From this baseline we can better see operational art in its historically evolving and contrasting style.

For over 2000 years armies had maneuvered in single dense masses. These densely packed armies presented very little linear extension or depth.[4] When the opposing forces collided in battle, the area of the battlefield—seldom greater than a few square miles—resembled a mere "point" relative to the size of the theater of operations. It was this characteristic of warfare that led to Isserson's descriptive terminology. This style of warfare varied little throughout its long history. In the first place the art of maneuver was rather prosaic. With only one force to maneuver, it was virtually impossible to develop the complex combinations of maneuver characteristic of modern operational art. In the second place the compression of forces in space and time on a concentrated battlefield meant that the outcome had a more profound and immediate effect. The fate of empires was often decided in an afternoon. The third characteristic of the concentrated style of warfare was that battles

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were incredibly lethal. It was the emphasis upon mass and concentration that particularly characterized the core of this style of warfare.

In particular the singular quality of mass had a special influence on such writers as Carl von Clausewitz when he wrote his interpretation of Napoleon's style of war. Clausewitz observed that there was an inherent tension between distributing forces throughout a theater of operations and concentrating them. He wrote that in war "basically, there are two conflicting interests: one, *possession of the country*, tends to disperse the fighting forces; the other, *a stroke at the center of gravity of the enemy's forces*, tends, in some degree, to keep them concentrated." As we have noted, this latter consideration had predominated in the thinking of most commanders throughout history. If a defender chose to disperse, so much the better for the attacker. The attacker would concentrate since "the larger the force with which the blow is struck, the surer its effect will be." It was this aspect of warfare that led Clausewitz to develop his analogy of the center of gravity: "A center of gravity is always found where the mass is concentrated most densely. It presents the most effective target for a blow; furthermore, the heaviest blow is that struck by the center of gravity."[5] The other great interpreter of Napoleon's style of war, Antoine-Henri Jomini, had championed concentration as the "fundamental principle of war."[6]

By 1815 it was apparent that the Napoleonic method of achieving concentration prior to the decisive battle had become the accepted military standard of conducting a campaign by virtually all major European armies. Eventually the Napoleonic paradigm would dominate much of Western military thinking down to the opening days of World War I. Yet the seed of operational art was already contained within the Napoleonic style of warfare. This seed was the corps system.

The Lateral Distribution of Forces

The hallmark of operational art is the integration of temporally and spatially distributed operations into one coherent whole. Before the evolution of operational art, movement of field forces in single dense masses obviated coordinating the operations of other forces. The undistributed, pre-operational army had only to integrate actions with itself. At the same time the decisive battle of annihilation was the culmination of all activity in the theater of operations. All planning and execution ended with the decisive battle. The idea of simultaneous and successive operations was therefore alien to the Napoleonic style of warfare and to its predecessors. These two particular characteristics—simultaneous and successive operations—are in fact the heart of operational art. The first characteristic was the lateral distribution of forces across a generally continuous front in the theater of operations. This led to the need to *synchronize* the simultaneous but distributed actions of forces across the

breadth of a theater. The second characteristic of operational art, evolving virtually concurrently with the first one, was the deepening of the theater of operations. This led to the conduct of *successive* operations through the depth of the entire theater of operations. Thus, the expansion of the concentrated forces in a theater, in length and in depth, meant that the campaign could no longer be decided by one decisive action. Because of the tremendous burden placed upon staff planning, resources, and logistics, for the first time campaigns had to be conducted in discrete "chunks" of activity called *operations*. It fell to the post-Napoleonic commander to exercise a new style of military art that would enable him to integrate these operations, separated in space and time, into one coherent whole. Thus operational art and the operational campaign were born.

Unfortunately for our discussion, this whole evolutionary process did not proceed according to some form of strict apostolic succession. We can say, however, that the beginning of the end of the classical style of warfare started with the development of the division system. This formation provided the command and control mechanism for the early lateral distribution of forces in the theater of operations.

Although anticipated by Marshal of France Maurice de Saxe, the divisional system was formally established by Marshal Victor-Francois de Broglie in 1760. In that year the Marshal issued his famous campaign "Instruction for the Army of the King." The divisional system was developed to counter the battlefield agility of the Prussian army by speeding up the French army's tactical deployment. Robert Quimby put the point nicely in noting that the divisional "system grew out of the . . . great difficulty in handling unitary [concentrated] armies of the size which was usual by [mid-18th century]."[7] Previous to Broglie's "Instruction," most armies marched in one or two dense columns. Arriving upon the field of battle the armies then had to deploy laterally into line of battle from line of march. Superior Prussian tactical drill gave them the advantage in rate of deployment. The French sought to negate this advantage by establishing their order of march in six pre-deployment packages or *divisions*. Since these divisions marched laterally dispersed from each other, they arrived on the battlefield virtually deployed in line of battle. The division system also ensured that orderly command and control was maintained during the march and during divisional deployment.

Another contributor to the evolution of the divisional system was General Pierre de Bourcet. Bourcet's legacy, dating from the 1780s, was twofold. First, he developed a rigorous doctrine for the employment of divisions. Second, and perhaps most important, he was the first to develop a formal structure to control divisions. This was Bourcet's model of the general staff. Often regarded as the father of the general staff, Bourcet was one of the first to recognize that the lateral distribution of troops in theater would put a great burden on an army's staff.

In 1764, while director of the staff school at Grenoble, Bourcet began writing his *Principles of Mountain Warfare*. Although this work was not formally published until 1788, the document was regarded as a confidential student text and circulated among officers of the French army. The title is misleading since the book dealt with more than merely mountain warfare, but the problem that confronted Bourcet initially concerned the control of an army in mountainous terrain. Clearly an army in such terrain would have to advance in columns laterally distributed across several routes. Where Broglie had used the divisions to solve a tactical problem, Bourcet used that formation to resolve the terrain issue.[8]

Toward the end of the 18th century, an interesting but ultimately abortive glimmering of operational art was seen in an attempt to fashion a permanent system of laterally distributed forces. Known as the cordon system, the early generals of the French Revolution used the divisional unit to distribute forces across the expanse of their frontiers. The system ultimately broke down into a series of uncoordinated division actions because no proper command, control, and communications system existed to support such widely distributed forces. The great demolisher of this abortive foreshadowing of operational art was Napoleon himself. According to Quimby, Napoleon "saw the balance between dispersion and concentration, and understood how to bring all his forces to bear upon the decisive point. When this method was opposed to the cordon system, the results could not fail to be successful." The key to Napoleon's success against the cordon system was the division. Napoleon "took full advantage of the divisional organization to maneuver extensively and prepare a surprise, *but the divisions were not allowed to act independently upon their own initiative and spread out over a wide area*, for although they were given room enough at first to make their evolutions easily, they were directed by a single will which *converged them upon a single point*" (emphasis added).[9] Thus while Napoleon may have indeed created a revolution in warfare by overthrowing the cordon system, it is clear that his achievement was still within the broad context of the classical paradigm of war: the "strategy of a single point."

During his reform of the French army from 1802 to 1804, Napoleon permanently established the corps system. Some theorists, including B. H. Liddell Hart, have misinterpreted the significance of this innovation.[10] The corps system was simply the next logical step in the evolution of the division. The employment of the corps was still subordinated to the aim of achieving convergent concentration at a decisive point more rapidly than the opponent. This is evident from Napoleon's conduct of the battle. Napoleon's watchword always had been: march dispersed, fight united. There was still a major transitional pause once the corps had concentrated for battle. The corps provided the means not only to control the army during the march, but also to array the army immediately before battle. The corps were never intended for use as

independent "chess pieces." Battles like Jena-Auerstadt, where Davout's corps fought an independent action, were rare. Once the battle plan had been determined, the corps were primarily used to control the engagements of the massed infantry, artillery, and cavalry formations.

By 1815 the Napoleonic variant of the classical paradigm of military art was firmly established throughout Europe. Forty-six years later the dead hand of Napoleon would guide the initial clash of Federal and Confederate armies on the other side of the Atlantic Ocean. It was during the American Civil War that the first seeds of operational art were sown and took root.

The American Experiment in Operational Art

The American Civil War marks a great conjunction in time between two fundamental styles of military art, one old and one new. Here we begin to see at least the vaguest glimpse of those characteristics that would eventually define operational art in its uniquely distinct form.

Strictly speaking it would, of course, be anachronistic to apply the term "operational art" to the style of warfare conducted by certain commanders during the Civil War. The evidence strongly suggests, however, that from a functional standpoint, the style of military art practiced was different in both kind and degree from the classical style. This quasi-operational art can be clearly distinguished from the earlier style by several chief discriminating characteristics. These characteristics closely parallel those of modern operational art. Briefly the emergent characteristics are:

- The employment of several independent field armies distributed in the same theater of operations;
- The employment of quasi-army group headquarters to control them;
- A logistical structure to support distributed operations;
- The integrated design of a distributed campaign plan;
- The conduct of distributed operations;
- The strategic employment of cavalry;
- The deep strike;
- The conduct of joint operations;
- The execution of distributed free maneuver;
- The continuous front;
- The distributed battlefield;
- The exercise of field command by officers of "operational" vision.

Let us discuss each in turn.

Field Armies. Today the field army (or the forward-deployed corps) is the primary instrument of operational execution. The first key factor that contributed to the development of an embryonic form of operational art during the American Civil War was the employment of field armies permanently distributed throughout the theater of operations. Although Napoleon had used

field armies during his Russian campaign of 1812, these were temporary formations thrown together to control the great number of troops scattered throughout the vast expanses of Russia. The initial deployment of Confederate and Federal field forces into departments ensured, quite by chance, that armies would be distributed across the theaters. At the beginning of the Civil War there were as many as 53 administrative territorial departments distributed around the country.[11] Many of these departments fielded their own army. Command of the field army devolved upon the department commander, who, under the Federal system, was responsible to Washington. The employment of these forces in a concentrated fashion was thus made difficult by an unwillingness or inability to develop a single unifying campaign plan and by the absence of a single field command headquarters to integrate the separate army operations and link them with the General in Chief in Washington.

Army Groups. The disunity discussed above was overcome in a radical new way by the employment of army groups, a second characteristic of operational art. Today a chief element of campaign design and execution is the army group. This formation has its origins in the American Civil War. The Confederates were the first to recognize that without a superior integrating headquarters to control subordinate army operations, the same defect inherent in the cordon system would wreck any hope of coordinating distributed operations. On 24 November 1862 a territorial division was established under Joseph E. Johnston to coordinate the operations of Braxton Bragg's Army of Tennessee, E. Kirby Smith's Army of Kentucky, and John C. Pemberton's Army of Mississippi.[12] Recognizing the same problem, the Federal army on 16 October 1863 promulgated General Order 337 creating the Military Division of the Mississippi. This quasi-army group was placed under the command of Ulysses S. Grant and embraced the Army of the Tennessee under William T. Sherman, the Army of the Cumberland under George H. Thomas, and, later, the Army of the Ohio under John M. Schofield.

Distributed Logistics. A third factor contributing to an experimental development of operational art during the Civil War was a new style of logistics. During the first year of the war it was evident that the methods of the Napoleonic period could no longer be applied successfully to American conditions.[13] During Napoleon's time scavenging was still extensively supplemented by a system of magazines and depots.[14] The use of the magazine system served Napoleon's army as a logistical "slingshot." During the Civil War there were no neutral or friendly nations accessible in which to prestock military stores before the start of a campaign. Confederate and Federal armies had to carry their stores with them on pack animals and wagons. This of course greatly retarded the mobility of the field army. More significant from an operational standpoint was the fact that logistics could no longer sustain dense concentrations of troops. This reinforced the trend toward the distribution of field armies in a theater. By 1863 the Federal army was earnestly seeking a

solution to this problem. The solution was provided by the French colonial school of warfare.

In 1840 the French, particularly Thomas-Robert Bugeaud, recognized that because the Arab insurgents in North Africa had a tremendous mobility advantage over the French colonial forces, the classic style of warfare would not be effective there. To increase the mobility of his forces, Bugeaud created "flying columns" (highly mobile independent detachments) by greatly lightening the logistical structure of his forces.[15] Around 1860 a study of Bugeaud's logistical methods was written by Alexis Godillot. On 2 January 1862 the Federal army's Quartermaster General, Montgomery Meigs, ordered that a translation of Godillot's pamphlet be distributed throughout the army. By 1864 Bugeaud's method of flying columns formed the core of Federal army logistical planning. In 1864, the success of this new logistical doctrine over the old classical system was demonstrated decisively in Grant's invasions of the South, perhaps the first operational campaign in military history.

The Distributed Campaign. The fourth characteristic of operational art is the design and execution of a distributed campaign. In this regard design and execution of Grant's plan of campaign for 1864 is crucial in demonstrating a brief manifestation of operational art during the Civil War period. If one were to hazard a precise date as to the birth of operational art, it would have to be 4 April 1864. On that date, in a letter to Sherman, Grant set forth a campaign design that was "to work all parts of the [entire Federal] army together, and . . . toward a common center." At a stroke Grant had exposed and rectified the main defect of the cordon system. Grant would unite all military activities east of the Mississippi into an integrated chain of operations. The campaign consisted of two major operations. In the west Sherman's quasi-army group would strike along a main axis with three armies toward the great railroad network at Atlanta. At the same time he was to fix Johnston's army, "break it up, and get into the interior of the enemy's country as far as [possible], inflicting all the damage [Sherman could] against their resources." Sherman's maneuver was ultimately aimed at Lee's rear area. Nathaniel P. Banks was to conduct a supporting operation from Mobile to Atlanta. For his part Grant would assume the role of an ad hoc army group commander in the east. Grant's quasi-army group would operate on a main axis directed toward Richmond, with its object to fix and destroy Lee's army. Because of the greater distribution of Grant's forces, the attack on Richmond and Lee's army would, in its turn, consist of three separate but linked army operations. Franz Sigel's Army of West Virginia was to advance south through the Shenandoah Valley and seize Lynchburg, thus cutting the Petersburg-Lynchburg railroad. George A. Meade's Army of the Potomac would advance south and try to fix Lee's army and bring it to battle. Benjamin F. Butler's Army of the James would advance northwest along the James River and seize Richmond by the back door. On 10 April, Sherman wrote Grant with his own concept of operations for the advance on Atlanta. In

his opening lines Sherman observed: "That we are now all to act on a common plan, converging on a common center, looks like enlightened war."[16]

Distributed Operations. Within this one campaign we see a glimmer of many of the other elements that characterize modern operational art. One of these characteristics concerns a delicate tension between concentration and linear distribution of forces to prevent envelopment. The classical style of warfare was typically characterized by the concentration of forces immediately before battle. With the employment of distributed field armies, premature concentration meant envelopment and annihilation. The elder Moltke demonstrated this in dramatic fashion against the Austrians at the battle of Sadowa in 1866. During the 1864 campaign both Johnston and Lee chose to maintain a lateral deployment rather than concentrate and risk envelopment.

We have already seen how the cordon system, coupled with lateral distribution to prevent envelopment, had foretold of a requirement to integrate a series of simultaneous distributed operations. This characteristic of laterally distributed operations was complemented by the conduct of operations distributed in depth as well. The refusal to concentrate and risk envelopment meant that the defender could always withdraw his forces to a subsequent position. Because his forces were laterally distributed, he could, moreover, withdraw rapidly to the rear along multiple axes, while the attacker had to redeploy his forces and pursue the defender. The problem thus forced upon the attacker was twofold: he had now to plan for operations distributed in length as well as in depth, and he had to achieve "operational" containment. Fundamentally a campaign consisting of a series of distributed operations led to a decline in the strategy of annihilation and a rise in the strategy of exhaustion. The conduct of distributed operations thus comprises the fifth characteristic of operational art.

Strategic Cavalry. A sixth characteristic of modern operational art is the employment of deep pursuit and exploitation forces to pave the way for succeeding operations. Before the Civil War cavalry had been used strictly in tactical formations, often in a pursuit role. In the American experience, cavalry was employed for the first time beyond the battlefield in a quasi-operational role to support the actions of the main army. Perhaps the most successful employment of cavalry in the role of operational containment was the use of Philip Sheridan's cavalry corps to seal Lee's retreat at Appomattox. Cavalry was also used in independent deep-strike operations. The Confederate cavalry under J. E. B. Stuart developed deep-strike techniques that were imitated and later refined by Federal cavalry commanders. Typically these "strategic raids," as the contemporary authors called them, were directed at deep objectives such as lines of communications and bases of operations.[17] The evolution of the deep strike during the Civil War culminated in the famous coup by James H. Wilson. To divert attention from his invasion of South Carolina, Sherman launched a cavalry corps under Wilson against Confederate forces

in Alabama and Georgia. The corps consisted of 13,480 troops organized in three cavalry divisions and a mounted infantry brigade. In less than two months Wilson's troopers had driven 525 miles into the heartland of the enemy. Wilson's strike would stand as the largest single cavalry operation until well into World War I.[18]

The Deep Strike. The deep strike was a technique not necessarily limited to cavalry. Today the deep strike constitutes a seventh characteristic of operational art. Sherman's so-called "march through Georgia" was a deep strike conducted primarily with infantry. In November 1864 after Hood cut Sherman's lines of communications to Chattanooga, Sherman made the bold decision to abandon his lines and drive on to Savannah. Here Sherman established a new base of operations and continued his drive north into South Carolina. Sherman accomplished his deep operation with significant help from the Federal navy.

The Joint Operation. The union of two or more armed services in a joint operation comprises an eighth element of operational art. In this instance the intervention of the Federal navy was unique in that the fleet formed a supporting link between two land operations: Sherman's strike from Georgia and his subsequent operation into South Carolina. Grant's successive operations around Lee's right flank also had the support of the Federal fleet.[19]

Distributed Maneuver. Distributed free maneuver is the ninth characteristic of modern operational art.[20] During the Civil War it was a logical consequence of the great distribution of forces in such a large theater of operations. Distributed maneuver meant that maneuver could be sought as an end in itself. It was no longer necessary to crown maneuver with a battle of annihilation as in the Napoleonic period. Forces could maneuver opponents out of position through the depths of a theater of operations just as Sherman did against Johnston's Army of Tennessee. The danger of distributed maneuver is that freedom of action can be lost if the maneuver is not rapid enough to lead to decisive results. Typically the failure of distributed maneuver leads to battles of attrition. Meade's failed maneuvers against Lee led to the grinding attritional battles in the Wilderness, at Cold Harbor, and at Petersburg. In the summer of 1914 unsuccessful distributed maneuvers to gain the open flank at the English Channel led to a similar tactical clinch.

The Continuous Front. In socioeconomic terms, perhaps the most pronounced dividing line between classical strategy and operational art is the Industrial Revolution. From about 1840 to 1890 the Industrial Revolution spawned innovations in technology that swept away nearly 2500 years of classical military art. At the emergent operational level two technological innovations led to the manifestation of the tenth characteristic of operational art: the continuous front.

The first of these innovations was the development of the railroad. Larry H. Addington called railroads the "bones of strategy."[21] It was the

railroad that ensured that modern warfare would have a uniquely distributed structure. On the eve of the American Civil War, the United States had laid more rail than any other country in the world. The railroad determined the whole manner in which the United States would go to war. Within each of the chief military departments was a primary railroad junction. This became the focal point of departmental mobilization. Staging and concentration of forces occurred at some distance from the junction, but along a major rail line. The forces then deployed from these concentration areas into the theater of operations. The distribution of the departmental railroad junctions throughout the United States in 1861 determined the distributed character of the subsequent operations. The army and quasi-army group headquarters provided the organizational mechanism to conduct these dispersed operations.

The second technological innovation of this period was the telegraph. Following Addington's metaphor, we might term this invention the "nerves of strategy." The great difficulty in integrating distributed operations lies in the fact that communications among higher headquarters and subordinate units must be virtually continuous or, if not continuous, then virtually instantaneous. The telegraph provided the missing element in a workable distributed command and control system. Although Grant's and Sherman's quasi-army groups were, for instance, nearly 600 miles apart, these commanders could communicate at the speed of the telegraph signal.

The distributed nature of rail lines, coupled with a distributed administrative device found in the departmental system, led to the lateral introduction of field armies into theaters of operation. Often these formations became engaged separately before they could achieve tactical concentration on a battlefield. The employment of the telegraph, the use of a quasi-army group control means, and supporting logistics all contributed to support the permanent lateral distribution of forces in a theater of operations. During the American Civil War we begin to see the gradual emergence of a continuous front of operations across the entire theater of war.

The Distributed Battlefield. Technology had a great impact on the conduct of war at the tactical level as well. More important, however, was the manner in which the tactical consequences of technology redounded on the conduct of operations. This came as a result of the expansion of the battlefield, the eleventh characteristic of operational art.[22] This expansion or "emptying" of the battlefield occurred at virtually the same time as the expansion of the theater of operations. At both the tactical and the emergent operational levels of war, therefore, the ratio of troops to space began to decrease dramatically.

The tactical innovation that contributed most profoundly to the distribution of forces on the battlefield was the rifled musket. The ballistic properties of the new musket made it at least ten times more lethal than its Napoleonic counterpart. This was achieved through an increase in range, accuracy, and penetration. On the battlefield this meant that initial engagement

ranges were driven farther apart. In order to advance across this increased beaten zone, armies could no longer advance in dense battalion columns. Smaller and more dispersed formations were required. But even with the employment of less vulnerable formations, the attacker could not cross the beaten zone in one rush. He was forced to dig in and advance in a series of rushes. This brought reliance upon a much older invention—the spade. Because armies in the advance were forced to dig in methodically during an assault, the tempo of the attack was greatly reduced. Thus, as the battle was increasing in space, its duration was increasing in time. In this fashion the deep distributed battle emerged. The defense, the strongest form of war, became even stronger as the defender now had time to develop extensive fortifications. He also found that entrenched troops with the new rifled musket could defend a greater linear frontage than during the Napoleonic period.

At the same time, the great arms of tactical rupture and penetration, the cavalry and artillery, were rendered impotent. The rifled musket outranged the smoothbore cannon and so drove artillery from the battlefield. Only after 1896 when methods of indirect fire were developed would artillery return, and then with a vengeance. The cavalry was hamstrung in a similar manner. The glory of Napoleonic warfare, borne by the thundering charge of massed heavy cavalry, was struck down by the rifled musket. Yet the belief in the massed cavalry charge died hard, languishing until the early stages of World War I. It was a signal professional achievement, however, that on the eve of the American Civil War most officers recognized that battlefield circumstances would

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Confederate defensive fortifications at Spotsylvania.

dictate new methods for the employment of cavalry. This recognition led directly to the use of massed dismountable cavalry in a quasi-operational role.

The chief significance of the distributed battlefield was its creation of an essential tension at the operational level that ensured the continued distribution of forces within a theater of operations. As noted earlier the Clausewitzian dilemma confronting the classical commander was whether to distribute his army and defend the whole country or concentrate it in anticipation of battle and defend only a portion. Historically the dilemma was resolved in favor of concentration because the attacker himself advanced in a unitary mass. In the first great fulmination of operational art, the defender had to weigh the merits of distributing his forces across a linear front, or concentrate them and risk envelopment. In the Civil War the defender began to choose distribution over concentration, thus supplanting the classical solution with the operational.

The distributed solution to the dilemma, however, was by no means optimal nor final. What was to prevent the attacker from stringing out his opponent laterally and then rapidly concentrating his forces to achieve rupture at some decisive point? Grant tried this repeatedly from the Wilderness to Petersburg. But with the development of the rifled musket (and its later improvement by the invention of an effective breech-loading system, a vertical magazine, and a smokeless cartridge) coupled with the strengthening of entrenchment through the use of barbed wire, penetration of the defense became impossible. To maintain a prolonged concentration of force while attempting to effect a penetration simply invited an enveloping attack from the defender. The attacker was thus forced to maintain a general linear distribution of forces to coincide with the defender's deployment. More and more the attacker would hope to achieve multiple local penetrations or rely on the concentration of artillery *fires* to achieve a decisive breakthrough.

The end result of all this was to lock the contending forces in a continuous front and slowly move it to and fro across the theater of operations, thus adding the dimension of depth to the linear chain of simultaneous battles. With the development of armored forces and close air support—in the 20th century, of course—the oscillation of the continuous front occurred at a much more rapid pace.

Operational Vision. The final characteristic of operational art evident in the Civil War was the presence of commanders with operational vision. Surely Grant, the "father of operational art," was foremost among them. Before J. F. C. Fuller began his study of Grant, he accepted the conventional view that Grant was a "butcher and Lee one of the greatest generals this world has ever seen." But after he completed his comparative study of the two he concluded: "Few generals-in-chief have suffered greater injustice than Grant. The reason for this misunderstanding is obvious, . . . the 1864-1865 campaign . . . was the first of the modern campaigns; it initiated a[n] epoch, and did not even resemble the wars ten years before its date." Grant arrived at his operational

vision through the "gift of an historic imagination," enabling him to "take in at a glance the whole field of the war, to form a correct opinion of every suggested and possible . . . campaign, their *logical order and sequence, their relative value, and the interdependence of the one upon the other*" (emphasis added).[23] Ultimately the comparison, like apples and oranges, is perhaps more irrelevant than unfair. Lee, past president of West Point's Napoleon Club and perhaps shackled by the grip of the great French leader, saw the military world through an entirely different lens. Lee fought only as he knew how to fight, and as he had to. Would Napoleon have fared any better, given the North's manpower and materiel superiorities, which facilitated its relentless design of successive offensive operations in depth throughout a gargantuan theater of war? Napoleon's failure in 1812 leads us to consider a negative response.

In any event this earliest manifestation of the practice of operational art was lost in the mists of time. The great operational formations of the Union army were disassembled and strewn as companies and battalions across the Great Plains during the Indian Wars. The United States would never field another corps until 1898; nor another field army until 1917. Not until the great maneuvers of field armies during World War II would the operational art rise again and come to its fullest fruition.

By the end of the 19th century the great concentrated army, a dominating force for over 2000 years of military history, had clearly ceased to exist. With the shattering of the Napoleonic icon, classical military strategy became a historic artifact, to be supplanted over time by operational art.

NOTES

1. The student was Lieutenant Colonel Ed Thurman, USA, while in attendance at the School of Advanced Military Studies, USACGSC.

2. The phrase of Herbert Butterfield, quoted in W. Stark, *The Sociology of Knowledge* (London: Routledge & Kegan Paul, 1958), p. 135.

3. G. S. Isserson, *Evoliutsiia operativnogo iskusstva [The Evolution of Operational Art]*, excerpts reprinted in A. B. Kadishev, *Voprosy strategii i operativnogo iskusstva v sovetskikh voennykh trudakh (1917-1940 gg.) [Questions of Strategy and Operational Art in Soviet Military Writings from 1917 to 1940]* (Moscow: Voenizdat, 1965), p. 418.

4. A possible exception might be the military art practiced by the Mongols c. 1200 A.D.

5. Carl von Clausewitz, *On War*, trans. Michael Howard and Peter Paret (Princeton: Princeton Univ. Press, 1976), pp. 485-86.

6. A. H. Jomini, *The Art of War*, trans. G. H. Mendell and W. P. Craighill (Philadelphia: J. B. Lippincott, 1862), p. 63.

7. Robert S. Quimby, *The Background of Napoleonic Warfare* (New York: Columbia Univ. Press, 1957), pp. 94-96, 175.

8. Ibid., pp. 176-84.

9. Ibid., p. 256.

10. B. H. Liddell Hart, *T. E. Lawrence* (London: Jonathan Cape, 1934), p. 440, and *The Ghost of Napoleon* (New Haven: Yale Univ. Press, 1928), p. 27. For an argument that Napoleon's use of corps anticipated certain features of the operational art, see Robert M. Epstein, "The Three Levels of War in the Napoleonic Period—Austerlitz and Friedland," unpublished manuscript, Combat Studies Institute, USACGSC, Ft. Leavenworth, Kans.

11. Russell F. Weigley, *History of the United States Army* (Bloomington: Indiana Univ. Press, 1984), p. 228.

12. This formation was officially designated a department, but in reality it functioned as a geographic division. Johnston's formation was disbanded after the Confederate defeats at Vicksburg and Chattanooga.

It was resurrected on 17 October 1864 under P. G. T. Beauregard with the formal designation of Military Division of the West.

13. John G. Moore, "Mobility and Strategy in the Civil War," *Military Affairs*, 24 (Summer 1960), 68-77. See also Edward Hagerman, "The Reorganization of Field Transportation and Field Supply in the Army of the Potomac, 1863," *Military Affairs*, 44 (December 1980), 182-86. Hagerman wrote: "In logistics, as in other areas of military theory and doctrine, Civil War experience forced American military culture to *reassess its eighteenth-century world view and acknowledge the realities of modern warfare*. . . . McClellan and, for the most part, Meigs attempted to improvise *within the Napoleonic standard, while Ingalls began to anticipate actual needs*" (emphasis added).

14. Martin van Creveld, *Supplying War* (Cambridge: Cambridge Univ. Press, 1977), pp. 40-74.

15. Douglas Porch, "Bugeaud, Gallieni, Lyautey: the Development of French Colonial Warfare," in *Makers of Modern Strategy*, ed. Peter Paret (Princeton: Princeton Univ. Press, 1986), pp. 376-87.

16. William T. Sherman, *Memoirs, II* (New York: DaCapo Press reprint, 1984), pp. 26-27. For a discussion of the origins of Grant's campaign plan see Bruce Catton, *Grant Takes Command* (Boston: Little, Brown, 1968), pp. 124-78; J. F. C. Fuller, *The Generalship of Ulysses S. Grant* (New York: Dodd, Mead, 1929), pp. 211-26; and James L. McDonough and James P. Lee, *War So Terrible* (New York: Norton, 1987), pp. 3-45.

17. James A. Schaefer, "The Tactical and Strategic Evolution of Cavalry During the American Civil War," unpublished doctoral dissertation, Univ. of Toledo, 1983, pp. 196-259.

18. James P. Jones, *Yankee Blitzkrieg* (Athens: Univ. of Georgia Press, 1987), p. 185.

19. Maritime operations in support of Grant's and Sherman's land forces had a profound impact on the subsequent development of the US Navy. Alfred Thayer Mahan wrote that the founding of the Naval War College by Admiral Stephan B. Luce was a direct result of Luce's experience as a member of the naval forces supporting Sherman's seizure of Savannah in December 1864. Luce related his encounter with Sherman as follows: "On reporting at headquarters, General Sherman indicated in a few, short, pithy sentences, and by the aid of a map, his plan of campaign from Savannah to the north. . . . After hearing General Sherman's clear exposition of the military situation the scales seemed to fall from my eyes. 'Here,' I said to myself, 'is a soldier who knows his business!' It dawned on me that there were certain fundamental principles underlying military operations which it were well to look into; principles of general application, whether the operations were conducted on land or at sea." Cited in A. T. Mahan, *Naval Strategy* (Boston: Little, Brown, 1911), pp. 14-15.

20. Today the concept of "relational maneuver" is frequently claimed to be the defining essence—the sine qua non—of operational art. This is unfortunate for two reasons. In the first place the term is redundant. If we accept the commonly held view that maneuver is movement to achieve positional advantage over an opponent, then all maneuver is necessarily relational. Second, if the nature of operational art is to be reduced to a single characteristic, such a reductionist approach would still yield a different candidate than the commonly proffered one of relational maneuver. Writing in *Tactical Strategic Principles of the Present*, Sigismund von Schlichting recognized that as early as 1870 an "army's [distribution] should be considered its normal state." For a discussion of Schlichting's revolutionary ideas see Lieutenant General von Caemmerer, *The Development of Strategical Science*, trans. Karl von Donat (London: Hugh Rees, 1905; US Army War College rpt., December 1983), pp. 94-105. See also Edward N. Luttwak, "The Operational Level of War," *International Security*, 5 (Winter 1980/81), 61-79. Here Luttwak for the first time connects relational maneuver with operational art. He does so by creating an unfortunate false dichotomy between attrition on the one hand and relational maneuver on the other. To give Luttwak his due, his insistence on the qualifier "relational" in connection with maneuver may reflect nothing more than a pro forma acknowledgment in this age of Einsteinian relativity that no body can be considered to move except in relation to another. But such reasoning is to confuse maneuver with mere movement.

21. Larry H. Addington, *Background to War in the Nineteenth Century* (Bloomington: Indiana Univ. Press, 1984), p. 44.

22. James J. Schneider, "The Theory of the Empty Battlefield," *Journal of the Royal United Service Institute*, 132 (September 1987), 37-44. The reader is invited to read Michael Shaara's *The Killer Angels* (New York: Ballantine Books, 1975) alongside Alexander Solzhenitsyn's *August 1914* (New York: Bantam Books, 1974) to get a graphic appreciation of the effect the expanding battlefield had on the conduct of operations. Solzhenitsyn wrote in his novel: "How disastrously the conditions of warfare had changed, making the commander as impotent as a rag doll! Where now was the battlefield that was no wider than one man's field of vision, across which he could gallop over to a faltering commander and summon him to his side? The extent of the battlefield had started to grow unmanageably . . . and now the situation was far worse. For a distance of forty-five miles, across enemy country, under threat of bullets or capture those trusting Cossacks had ridden for twelve hours carrying . . . this document. . . . And so to cover those forty-five miles—which in Kutuzov's time [c. 1812] had been a mere three miles—the only means remained the same horses' hooves, whose stride had not increased by an inch since Kutuzov's day" (pp. 330-31).

23. J. F. C. Fuller, *Lee and Grant* (Bloomington: Indiana Univ. Press, 1957), pp. 248-49, 245.