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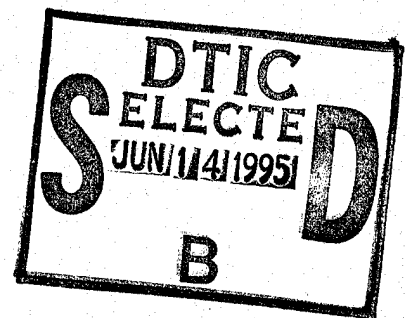
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**LESSONS FROM THE PAST AND  
A VISION OF THE FUTURE:  
TACTICAL HEADQUARTERS REQUIREMENTS  
IN FORCE XXI**

BY

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**LESSONS FROM THE PAST AND A VISION OF THE FUTURE:  
TACTICAL HEADQUARTERS REQUIREMENTS IN FORCE XXI**

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**ABSTRACT**

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With the advent of the full exploitation of Information Age technology in a contemporary battlefield environment, the need for change in the echelons of tactical command can be anticipated. As part of Division XXI, it can envisioned that the current functions of the battalion can be absorbed by a Regimental Headquarters when the battalion as a tactical headquarters becomes redundant. In the Pentomic Infantry Division of the late 1950s, the infantry battalion headquarters were completely eliminated and companies were directly subordinate to the Battle Group. The Pentomic concept did not succeed because of the limited capability of technology at the time, but would succeed in the future with the advanced C<sup>4</sup>I technology. The idea of a Brigade (or Regiment) with direct control of subordinate companies is both viable and practical as an integral part of Force XXI. "Battle Management" of a brigade-sized Area of Operations would be within the capabilities of a single individual whereas a Division Commander would be unable to effectively control his organization without a brigade-level headquarters.

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## I. INTRODUCTION

With the advent of full exploitation of Information Age technology in a contemporary battlefield environment, the need for change in the echelons of tactical command can be anticipated. With highly-sophisticated situational awareness tools available, the traditional "eyes on" and voice communication methods of command and control (C<sup>2</sup>) may become unnecessary. Similarly, one or more echelons of tactical command will become redundant with the ability of the next higher headquarters to effectively monitor and direct the activities of subordinate units. Indeed, as part of Division XXI, it can be envisioned that the current functions of the battalion as a tactical headquarters can be absorbed by the Brigade (or Regimental) Headquarters.

To arrive at any conclusions concerning the ultimate development of Force XXI, the five echelons of tactical command (Company, Battalion, Brigade, Division, and Corps) should be briefly evaluated in terms of their necessity with respect to C<sup>2</sup> of maneuver and fire support elements, their logistical support base, and administrative requirements. Of these, the Company is the basic administrative and tactical unit and will remain in its present form. The Division is significant as a major headquarters in terms of both its assigned combat units and combat support/combat service support base. The wide-ranging responsibilities of the Corps and its link to the operational level of war will be just as valid in Force XXI as it has been since the days of Napoleon. Therefore, the two echelons which

should be evaluated in terms of their future viability are the Brigade and Battalion.

The Brigade or Regiment has existed for centuries as a basic structure of organized arms. The Battalion is a relatively recent invention which evolved to its modern form after combat maneuver finally broke away from Napoleonic tactics. The nature of warfare will change just as dramatically again in the Third Wave. Battle Dynamics will be greatly affected with extensive force structure changes being mandated as a result.

The concept of battlespace expansion will take on greater significance as maneuver and fire support possibilities increase exponentially. As stated in TRADOC Pamphlet 525-5, "Force XXI Operations", battlespace expansion is expected to "reduce friendly force vulnerability by increasing the dispersion and numbers of the friendly force. Physically mass only when absolutely necessary, but be capable of doing so rapidly and in varying combinations of combat, combat support, and combat service support."<sup>1</sup> This statement is especially valid when considering the force protection issues associated with an increased potential for operating in a Weapons of Mass Destruction(WMD) environment.

The Pentomic Division of the 1950s was created to achieve that very same purpose as the U.S. Army grappled with the implications of a tactical nuclear battlefield. While dispersion was the primary goal of the Pentomic Division, the structure was also intended to provide flexibility and mobility. As part of

the associated force structure changes, the Battalion was removed as an echelon as command.

The Pentomic Division proved to be flawed in several areas, but its failure was primarily due to the inability of command and control systems to execute the doctrine of a nuclear battlefield. The elimination of battalions in the Pentomic Division does not necessarily imply that this concept would be invalid as part of a future force structure. Given the vastly improved Command, Control, Communication, Computers, and Intelligence (C<sup>4</sup>I) capabilities inherent in Force XXI, many of the shortcomings of the Pentomic concept would no longer hold true. When postulating the elimination of the Battalion in a future environment without a loss in effectiveness or capability, its evolution should first be analyzed with respect to both its original purpose and its relationship to other command echelons.

## **II. THE BATTALION AND ITS HISTORICAL LINK TO TACTICAL ECHELONS**

As part of Napoleonic tactics, the term "battalion" was used to describe the movement of a drill unit of regimental size.<sup>2</sup> During the American Civil War, volunteer infantry and cavalry regiments generally consisted of ten or twelve companies without a battalion structure. These companies each had a "paper" strength of about 100 soldiers, but usually operated with less than half that many. In a few instances, separate battalions of about five companies were formed as "small regiments," however, this was mostly due to lack of sufficient personnel rather than a

deliberate attempt to create a new structure. Regular Army regiments were nominally formed with two battalions of eight companies each, but fought in the same manner as their volunteer counterparts.<sup>3</sup> The Brigade was the next higher level of command and represented the basic tactical unit of the era; it was composed of a varying number of regiments.<sup>4</sup>

Based on the nature of tactics of the time, it is not hard to envision why battalions, as we would define them today, would be superfluous in such an environment. A regiment would encompass only a 50-100 yard front, a space small enough for the Regimental Commander to be seen by all members of the unit and providing the ability to influence the battle by voice commands and personal leadership.<sup>5</sup> Since a Regimental Commander could effectively issue orders directly to his Company Commanders on this type of battlefield, an intermediary level of command was not necessary.

However, as maneuver tactics gradually changed by the late 1800s, an organized battalion of four companies was gaining dominance as a functional part of the infantry regiment. As described in 1894 by Arthur L. Wagner in his Organization and Tactics, "The tactical unit on which the organization of an army should be based is the largest body of troops that can be directly commanded by a single leader, and, at the same time, be able to appear in close order on the battle-field without risk of quickly incurring ruinous losses from the enemy's fire." The new battalion structure met this criteria.<sup>6</sup>

As the Battalion evolved towards modern form, its external environment, as represented by the Division structure, was itself undergoing significant changes which would, in turn, affect the further development of the Battalion. During World War I, the Infantry Division was composed of two infantry brigades, each with two regiments. Each regiment was further composed of three battalions. It had an authorized personnel strength of 21,598. This "square" division organization remained in effect until just prior to World War II when it was replaced by the "triangular" division with an authorized strength of 14,561. This structure eliminated the Brigade Headquarters and consisted of three infantry regiments instead of the previous four. The elimination of the Brigade headquarters significantly improved command and control in the restructured division. <sup>7</sup>

While the intent had been to streamline the Infantry Division, concerns still existed about the relative robustness of the new structure under combat conditions, especially since the relative size of regiments and battalions remained the same. In a 1939 letter to Brigadier General James L. Collins, General George C. Marshall stated "I am like you, in that the organization does not please me", but added that he thought that "it has the advantage of being a carefully considered product of some of the best minds in the Army."<sup>8</sup> Marshall's concern proved to be justified with the actual World War II experience of significant personnel attrition through combat in many infantry divisions. In May, 1945, Army Ground Forces (AGF) recommended



that a fourth infantry regiment be reinstated to the Infantry Division. This re-squaring never occurred and the Infantry Division entered the 1950s and the Korean War with the same basic configuration and limitations as World War II.<sup>9</sup>

### III. THE PENTOMIC ERA

The battalion structure which had matured through World Wars I and II and the Korean War would disappear in the late-1950s as part of the reorganization of the Infantry Division to the Pentomic concept. Most force structure changes are mandated by tactical considerations such as the technological improvements in weapons systems and the resultant need for new doctrine. In the case of the Pentomic Division, however, its creation was influenced as much by political factors as it was by any true doctrinal necessity.

General Maxwell D. Taylor, Army Chief of Staff from 1955-1959, can rightly be called the father of the Pentomic concept. As part of the "New Look" program which emphasized nuclear forces in the deterrent strategy of Massive Retaliation, funding for conventional forces became the bill payer in an era of dwindling defense budgets. As detailed in his 1959 book, An Uncertain Trumpet, Taylor expressed his view that the Korean War had proven the fallacy of relying on nuclear weapons to prevent anything short of a general war.<sup>10</sup> Nevertheless, he realized that the Army would have to demonstrate an ability to operate in a nuclear environment with its ground units if it were to have any chance

of competing with its sister services in the "New Look" era.

The original concept for the PENTANA Division (PENT - meaning "five" and ANA - standing for "atomic-nonatomic") was introduced in 1954.<sup>11</sup> Designed to operate on both conventional and nuclear battlefields, this divisional concept was intended to emphasize a capability for dispersion, flexibility, and mobility, in roughly that order.<sup>12</sup>

The actual structure for the Pentomic Division or ROCID (Reorganization Of the Current Infantry Division) first made its appearance shortly after the PENTANA Study. The authorized personnel strength of the Pentomic Division was initially 13,748 as compared to 17,459 for the Korean War-era triangular division.<sup>13</sup> A similar reorganization occurred with respect to the Airborne Divisions as part of the ROTAD (Reorganization Of The Airborne Division). The 101st Airborne Division, commanded by Maxwell Taylor during WWII, became the first division to actually convert to the pentomic structure and was soon followed by the 1st Infantry Division.<sup>14</sup> The Armored Divisions were also reorganized but retained their structure of three Combat Command headquarters with four armor and four armored infantry battalions.<sup>15</sup> The Armored Division itself had already been considered to be especially suited for a nuclear battlefield<sup>16</sup> and the required changes were therefore relatively minor. It should be noted that a Mechanized Infantry Division did not exist in the force structure at this time. The infantry divisions were either standard ("straight-leg") or airborne.

In the Pentomic Division, the three Regiments were eliminated and replaced by five Battle Groups. The infantry battalion headquarters were completely eliminated and companies were directly subordinate to the Battle Group. Initially, the Battle Group was comprised of four rifle companies with four rifle platoons each and a mortar company.<sup>17</sup> As part of a later reorganization, the number of rifle companies per Battle Group was increased to five while the number of rifle platoons was decreased from four to the traditional three per company.<sup>18</sup> The Battle Group, commanded by a Colonel, more resembled a reinforced battalion than a small regiment.

The dispersion that would be required on a nuclear battlefield was the rationale for the creation of the five major maneuver elements in the Pentomic Division. In this manner, the Division could lose an entire Battle Group and still remain effective. The flexibility of the Pentomic Division was to be gained by the increased number of subordinate maneuver headquarters. The five Battle Groups theoretically gave the Division Commander "maximum flexibility in tailoring task organizations to meet the requirements of a specific mission."<sup>19</sup> This was considered to be a vast departure from the traditional "Two Up - One Back" approach for both offensive and defensive that had characterized triangular organizations. The Battle Group was expected to hold the same 5,000-yard frontage as the Regiment and could, if required, effectively defend up to 7,200 yards.<sup>20</sup>

The Pentomic Division originally had 80 rifle platoons as compared to 81 in the triangular Infantry Division and was thus considered to compare favorably with its predecessor. Indeed, it would be useful to compare both the relative personnel and equipment strengths of the Regiment and first iteration of the Battle Group:

PRE-PENTOMIC UNITS			PENTOMIC UNITS		
CO	BN	REGT		CO	BG
196 <sup>21</sup>	867 <sup>22</sup>	3520 <sup>23</sup>	<b>Total Authorized Strength</b>	243 <sup>24</sup>	1427 <sup>25</sup>
81	243	729	Assault Strength (Soldiers in rifle squads only)	132	528
			Ground Support Automatic Weapons:		
18	54	162	Automatic Rifles	24	110
6	26	81	Machine Guns	8	45
			Anti-tank Weapons:		
3	9	27	57mm recoilless rifles	0	0
3	19	80	3.5-in rocket launchers	12	64
0	6	18	106mm recoilless rifles	2	8
0	0	0	76mm guns	0	2
0	0	22	90mm guns	0	4
			Indirect-Fire Weapons:		
3	9	27	60mm mortars	0	0
0	6	18	81mm mortars	3	13
0	0	12	4.2-in mortars	0	8

Although the "foxhole strength" of the Battle Group is impressive at first glance, the dramatic drop in the "teeth-to-tail" ratio created serious problems in the overall Combat Service Support organization. The Battle Group had been intended as the rough equivalent of a small regiment,<sup>26</sup> but several key

differences would prevent it from meeting those expectations. In aggregate, there are less medium and heavy anti-tank weapons in the Battle Group although they are more concentrated at the company level. Although the Battle Group lost an organic tank company, it would usually be assigned a tank company from the divisional armor battalion which served as "the principal antitank means available to the division commander."<sup>27</sup> The Battle Group had two light tanks in its recon platoon and four assault guns in an assault weapons platoon. Along with the smaller number of total mortar tubes, the Battle Group was noticeably lacking in firepower compared to the predecessor Regiment. The nuclear capability of the Division Artillery theoretically compensated for this shortfall, but was unable to fully address a conventional situation that would be far more likely.

In terms of overall fire support, the Pentomic Division was designed to be the clear superior of the triangular division with the addition of the nuclear-capable Honest John rocket. However, the original Division Artillery (DIVARTY) consisted of only one 105-mm artillery battalion of five firing batteries and a composite battalion of two 155-mm, one 8" and one Honest John battery.<sup>28</sup> This was later changed to three towed and two self-propelled battalions, each with a 105-mm and a 155-mm battery. A sixth artillery battalion contained the one 8" and one Honest John battery, each with four weapons systems.<sup>29</sup> Thus, in the second iteration, the aggregate number of firing batteries (12)

equaled the DIVARTY of its triangular division predecessor with an upgraded weapons system in four of the Pentomic DIVARTY batteries. In a conventional environment, the fire support available to the Battle Groups would still be largely inadequate.

For a concept as revolutionary as the Pentomic Division, there should be a reasonable expectation of a Combat Service Support (CSS) structure that would complement the desired capabilities of dispersion, flexibility, and mobility. When evaluating the Division Trains of the Pentomic Division, however, an immature logistical organization is found. Primarily composed of an Admin Company, Medical Battalion, Ordnance Battalion, Quartermaster Company, and Transportation Battalion, it is essentially the same as that of the triangular division. Empirically, this logistical organization would appear to be unable to support five major maneuver elements that would be spread over larger distances. The Transportation Battalion consisted of one Truck Company and two Armored Carrier Companies.<sup>30</sup> While the thrust of this structure was to provide a "pool" of armored vehicles to the infantry units for mounted operations, the lift capability for re-supply within the division was severely constrained as a result. Given these circumstances, the Battle Group itself would need to contain the required CSS assets for adequate logistical depth.

The Battle Group inherited the previous administrative and logistical requirements of the Regiment, but did not have a dedicated Service Company for that purpose. The primary

logistical element of the Battle Group was only a Supply & Maintenance Platoon in Headquarters and Headquarters Company. The fact that these two service support functions would both be located within a platoon structure would suggest the nominal ability of the Battle Group to sustain any intense operations. With only one truck squad which included mess support as a responsibility<sup>31</sup>, the Battle Group would be hard-pressed in its efforts to either sustain itself or interact with the stolid Division Trains. The gap formed by the elimination of the Regimental Service Company was never filled and the logistical structure throughout the Pentomic Division proved to be woefully inadequate.

#### IV. THE LESSONS LEARNED OF THE PENTOMIC ERA

The Pentomic Division worked fine in theory and especially when considering the atomic battlefield on which it was designed to fight. Capable of a Mobile Defense frontage of 24 kilometers and an Area Defense frontage of 18 kilometers in addition to its offensive potential, it seemed the perfect weapon to support the prevailing National Military Strategy. However, if the merits or shortcomings of the Pentomic Division are to be objectively evaluated, it should be done in the context of the three original imperatives of dispersion, flexibility, and mobility.

It is fair to say that dispersion was achieved in the Pentomic concept, but it came at the expense of flexibility and mobility. The three imperatives proved to be not at all

complementary nor was a synergistic effect ever produced. Any flexibility advantages of the Pentomic Division were largely nullified by the time-distance factors of the new battlefield. Although attempts were made to streamline various facets of the Pentomic organization (e.g., reverting to three rifle platoons/company), the C<sup>2</sup> problem was exacerbated by the limited abilities of the state-of-the-art combat communications of the era.<sup>32</sup> The basic fact that the Battle Group was weaker in terms of combat-capability than a Regiment became a liability in many situations. The staff and coordination burden at the division level increased with the need to have more units "brought to bear" to achieve the same effect as a larger formation.

A lack of mobility, more than any other factor, impaired the overall viability of the Pentomic Division. The Pentomic Infantry Division was a "straight-leg" unit expected to operate in a fast-paced, tactical nuclear environment. It did not have any permanent armored infantry units although it did have the capability of converting two Battle Groups to that mode if needed. The deficiency of "limited long-range tactical ground mobility" is fully acknowledged in FM 7-100 as well as the fact that the "overall ground mobility of the infantry division is restricted by the limited tactical ground transport organic to the battle groups."<sup>33</sup> While firepower could compensate somewhat for mobility, the lack of conventional firepower in the Pentomic Division served to underscore this fundamental flaw.

In reality, the Pentomic Division proved to be unable to



sustain itself in continuous operations and required the tasking of infantry units to provide personnel to the inundated combat service support elements. Further, it was deemed to be fundamentally incapable of conventional operations. Even so, it can also be argued that it had been intended to be a transitional force structure.<sup>34</sup>

The Pentomic experiment produced the Reorganization Objective Army Division (ROAD) of 1962 - a structure which will have a longevity of at least fifty years. The ROAD Division provided flexibility in the creation of tactical brigade headquarters and increased mobility in the creation of Mechanized Infantry Divisions. The Battalion was re-established and became an integral part of the flexibility of the ROAD Division. The divisional combat service support functions were restructured as part of a highly efficient Division Support Command (DISCOM). Further, the ROAD Division was suited to a new National Military Strategy of Flexible Response as advocated by Maxwell Taylor in The Uncertain Trumpet.<sup>35</sup>

If the Pentomic Division had been fundamentally flawed, it is still possible that it may have been so only in the context of the times in which it existed. Put somewhat differently, is it possible that the Pentomic concept or aspects of its doctrine would have applicability in the force of the future? More importantly, was the elimination of the battalion structure a valid theory that could not be practically applied only because the requisite technology was unavailable in the late 1950s?

## V. FROM PAST TO FUTURE - BATTLE COMMAND IN FORCE XXI

The nature of battle command in the 21st Century will derive from doctrine in the Force XXI era. Although a firm grasp of Information Age doctrine is difficult to obtain at this point, there is a glimpse of future warfighting. As stated in TRADOC Pam 525-5, the pattern of future knowledge-based warfare will be mission analysis and force tailoring, reconnaissance, decisive action, and sustained operations.<sup>36</sup> In Force XXI doctrine, the five tenets of Army operations (Initiative, Agility, Depth, Synchronization, and Versatility<sup>37</sup>) will also remain the intellectual underpinnings of future force design.

The imperative of dispersion as originally espoused during the Pentomic Era will be an important aspect of force protection and can be entirely effective with the projected C<sup>4</sup>I of Force XXI. The advanced technological capabilities of the 21st Century will give commanders the ability to "see" the battlefield in an all-encompassing manner. Battlefield leadership will still remain as the most essential dynamic of combat power.<sup>38</sup>

In 21st Century warfare, the traditional hierarchical command structure will be replaced by an internetted, nonhierarchical structure that capitalizes on information technology. Certain levels of command will become obsolete and distinctions brought about by unit boundaries will become all but meaningless. As outlined in TRADOC Pamphlet 525-5, "Aided by information technology, organizations will tend to grow flatter

and less rigidly hierarchical." <sup>39</sup> Harkening back to the original premise, a determination of the tactical echelon that may eventually disappear, the Brigade or the Battalion, can be surmised with the proper blend of both historical experience and a projection of future capabilities.

As excellent as leaders of the future may be, however, they will suffer from human limitations and will undoubtedly find it difficult to assimilate the vast amount of data available from advanced information technology. Similarly, situational awareness tools cannot substitute for personal battlefield presence. Therefore, in determining the proper command levels, a major consideration would be the relative size of the area in which an individual commander or command echelon would operate.

Arthur L. Wagner stated around the turn of the 20th Century that a "...general can easily command three regiments where he would find the control of nine battalions a matter of much difficulty."<sup>40</sup> Without brigade headquarters, a future Division Commander would be charged with the direction of assigned maneuver battalions, aviation assets, fire support, and, to a limited extent, logistical operations. Further, this span of control would be required over the extended battlespace of an Divisional Area of Operations (AO). While the Division Commander would be oriented toward the main effort and Assistant Division Commanders would control other portions of the AO, the complex nature of the divisional mission will require coordination of simultaneous events over the entire depth of the divisional

battlespace. It is highly improbable that these individuals could sufficiently handle all the critical elements in this future form of warfighting.

A brigade-sized Area of Operations is by definition considerably smaller than that of a Division. Further, a brigade typically conducts fewer missions in combat operations and has most, if not all, of its assigned units dedicated to a primary mission. Because of its smaller geographic boundaries, personal battlefield leadership can be more effectively exerted by one individual in a main effort. Further, the advanced technological capabilities of the 21st Century will give a brigade-level commander the ability to project his presence on the battlefield and direct company-sized units as well as a battalion commander. With the benefit of digitization, efficient battlefield orders could be transmitted directly to the maneuver companies. In such an environment, the battalion as a tactical entity would become redundant. Lastly, as compared to a Division Commander, a brigade-level commander would run much less a risk of being inundated by the total number of assigned units and systems.

When considering the ultimate fate of the battalion structure, it should be remembered that many factors which are reminiscent of the Pentomic Division are no longer applicable today. While Mechanized Infantry Divisions have existed for over thirty years with their inherent mobility, heliborne light infantry forces can be made extremely mobile as well. As battlefield communication has become much more sophisticated and

as it improves exponentially in the near future, any limitations that applied in the late 1950s/early 1960s obviously would no longer elicit such concern.

The Pentomic Division was severely hampered by an inadequate CSS structure and required a more robust logistical organization at the Division and Battle Group level. The "fix" to this dilemma began with the creation of the DISCOM in the ROAD Division. This organization has since undergone continuous improvement through the inception of the Forward Support Battalion (FSB) concept and has proven itself to be both flexible and resilient.

When recognizing the factors that hampered the Pentomic Division, the idea of a Brigade (or Regiment) with direct control of subordinate companies appears to be practical as an integral part of Force XXI. This redefined tactical element must then integrate with a suitable divisional structure.

## **VI. DIVISION XXI**

At the tactical level, the division will be the major formation with the capability of being tailored for specific mission purposes. Force XXI units will be modular in design to meet any potential contingency situations. Refinements in fire support will take advantage of "sensor-to-shooter" links.<sup>41</sup>

## THE DIVISION STRUCTURE

With a future doctrine that will emphasize the flexibility made possible in the Information Age, a rudimentary division structure can be determined. At present, a U.S. "heavy" division has nine maneuver battalions or 36 "line" companies. Assuming that the battalion structure will indeed become obsolete, a decision would have to be made on the realignment of these 36 subordinate companies into brigade-sized structures that can both optimize the advantages of Information Age technology and recognize the human element of battle command.

The next issue to be addressed is the number of ground maneuver brigade-equivalents. Experience has shown us that three major maneuver elements may be too limiting yet five has proven to be too many. Due to the nature of warfare in the 21st Century, three maneuver elements would probably be unduly restrictive, therefore, it appears that four major maneuver elements would be most appropriate. This approximate number would provide for sufficient combat power in a single formation and yet allow for flexibility. It would, ironically, address some of the concerns that had arisen as a result of the WWII experience, but, in a more contemporary sense, it would allow a future Division Commander to simultaneously conduct a Main Attack, Feint or Supporting Attack, and Local Defense while still maintaining an element in reserve.

Assuming that a division would consist of approximately

four major maneuver units, the hypothetical design can be further envisioned. Both Armored and Mechanized Infantry Divisions would consist of two pure Mechanized Infantry Regiments and two pure Armor Regiments. Subordinate companies of each type would be organized into either an Infantry or Armor/Cavalry Regiment with combined arms considerations being addressed by cross-attachment and habitual relationships between major units. Based on the current number of maneuver companies in a division, a Regiment would each contain about eight with the possibility of introducing a new structure to be referred to as a "Scout Company."

#### THE SCOUT COMPANY & THE INTEGRATION OF ADVANCED TECHNOLOGY

The Scout Companies would be equipped with the most technologically-advanced equipment to include the Future Scout Vehicle (FSV). While one of these Scout Companies would replace the recon platoons of the former battalions, an additional company of this type might prove necessary to provide the Regimental Commander with added flexibility. The Scout Company would be designed to fight a major portion of either the offensive or defensive battle by its ability to fully integrate with other weapons systems on the extended battlefield.

The Scout Company would be commanded by a Major with a Captain as Executive Officer and another Captain as a Tactical Intelligence Officer. A Major would not only be more suitable when considering the mission of this unit, but his experience

would also allow for better command and control of attached tank platoons, anti-tank platoons, engineer platoons or possibly a maneuver company of some type.

While the other companies in the Regiment exist to provide mass and depth, the Scout Companies would shape the upcoming fight to a much larger extent than our current notion of a covering or screening force. With their tremendous interface capability, the Scout Companies represent the further evolution of tactical units. Indeed, the conventional maneuver companies would eventually begin to gain the attributes of the Scout Company and disappear completely in a hypothetical post-Force XXI environment. As part of Force XXI, however, these remaining maneuver companies would be of the same type for that Regiment.

#### REGIMENT XXI

The Regiment XXI is the major subordinate combat element of Division XXI and embodies the full integration of the tenets of Army operations with 21st Century capabilities. While battalion headquarters would have been required for command and control, they will eventually become a purely artificial constraint in Force XXI that could eventually hinder a Regimental Commander. Although physically smaller than the present-day Brigade, the Regiment and its new command structure would gain with respect to Agility and Depth. The Regimental Commander would be allowed a far greater number of force combination possibilities in response to varying conditions and missions.



Synchronization in this environment becomes achievable through the greatly advanced Information Age technology that will be available to a battlefield commander. This overall effect achieves greater combat power with a significantly streamlined force.

Despite its smaller size, Regiment XXI would be the full equal of its 20th Century predecessors in terms of relative combat power. With the potential for a complete spectrum of supporting combat elements, Regiment XXI would still possess an enhanced reconnaissance capability, sufficient maneuver forces, adequate organic fire support, an ability to engage enemy armor at varying ranges, and a logistical element to provide sufficient oversight of all aspect of CSS on the future battlefield. Therefore, in addition to its organic maneuver companies, it would contain two anti-tank companies, a mortar company, and a logistical coordination element within the Headquarters and Headquarters Company.

Of the two anti-tank companies, one would resemble the current anti-tank company equipped with either a TOW or Line-of-Sight Anti-Tank (LOSAT) system. Its assets would be task-organized to other units in a traditional manner. The second anti-tank company would be equipped with a more advanced system such as the Non-Line-of-Sight (NLOS) missile. Because of its long-range lethality, it would normally be under the direct control of the Regimental Commander.

The Mortar Company consolidates the former Heavy Mortar

Platoons into a robust fire support organization for the Regiment. It would consist of three platoons of six sections each for a total of 18 120mm Mortars. This would give the Regiment an organic fire support capability equivalent to that of the present Brigade.

The capabilities of the echelons of Combat Service Support will be a critical factor in the Force XXI environment. While personnel requirements may be reduced by increased automation in areas such as rations, fuel and other so-called housekeeping functions,<sup>42</sup> the intense demands of future combat will mandate that "Logistics organizations must be modular, tailorable, and flexible to sustain future Army operations."<sup>43</sup> At the tactical level, this requires some analysis of the logistical functions at current and anticipated echelons.

In the current force, the Battalion has consolidated many of the logistical functions that had been previously performed at the Company level. The Brigade remains primarily a tactical headquarters while the Division contains the Support Command with its FSBs. If the battalion structure is eliminated, its current CSS functions would need to be reconfigured.

In a modularized arrangement, the FSB would assimilate the elements of the former Battalion support platoons, but maintenance and food service functions would revert back to individual companies. The Regimental Headquarters and Headquarters Company would contain a logistical coordination element to direct service support functions. This Logistical

Coordination Center (LCC) would oversee supply operations as part of the Regimental S-4 Section. Without the focus of subordinate battalions, the Regimental Trains, to include medical assets, would instead be oriented on specific areas of the battlefield.

The structure of the Regiment would allow it complete versatility with respect to assigned or attached companies. Despite the homogeneous nature of their assigned units, regiments can easily task-organize based on specific mission requirements. A regiment can be weighted for a Main Attack and reinforced by companies of the other regiments or the provisional battalion. However, as previously mentioned, the Regimental Commander would use his Scout Companies to aggressively determine the enemy's disposition and intent and engage all echelons of the enemy force as far forward as organic weapons and existing technology will allow. These actions, of course, would be well integrated with the fires of other units and the division.

The senior leadership required by the Regiment deserves mention at this point. The Regiment would require a Colonel and four Lieutenant Colonels. The Regimental Commander would be a Colonel and would place himself well forward during combat operations as the fight of the main effort begins to develop. With situational awareness tools constantly at his disposal, he could still largely direct the efforts of the entire regiment. The Deputy Regimental Commander would position himself initially with the bulk of the maneuver forces and would lead this force in response to the developing situation until the hand-off to the

Regimental Commander at the decisive point of the battle. The Executive Officer's primary responsibility would be the combat service support of the Regiment and he would normally be positioned with the Regimental Trains. The fluid and potentially complicated nature of logistics on the future battlefield would require an individual with considerable experience. Lastly, the Regimental Operations Officer would also be a Lieutenant Colonel and would oversee the Regimental Tactical Operations Center (TOC). Although a distinct departure from the current role of a Brigade S-3, the projected C<sup>4</sup>I capabilities will allow the Regimental S-3 to perform his current responsibilities in a TOC environment. He would also be well positioned to plan future operations.

While these Lieutenant Colonel positions can replace the previous Battalion Commanders, career progression concerns need to be fully addressed. As noted by General William E. DePuy in the case of the Pentomic organization, "This flaw turned out to be lethal for purely institutional reasons."<sup>44</sup> In addition to the Scout Companies, consideration should be given to Majors as commanders for all maneuver companies. With the anticipated fast-paced and complex nature of future warfare, unit commanders with greater experience would be a force multiplier as well as create a credible career ladder.

The lineage implications of the Regiment are evident. The regiments would adopt the designation of those historically associated with a particular division. With its eye to the future, Regiment XXI would never forget the past.

## VII. CONCLUSION

While the focus thus far has been on heavy divisions, these same concepts can also apply to an Airborne, Air Assault, or Light Infantry Division when recognizing the inherent differences in their structure and implementation. More so than the heavy division, however, the lessons of the Pentomic Division would have to be particularly addressed. Nevertheless, these structures can also greatly benefit from enhanced Information Age technology and will contain the four major maneuver elements of sufficient staying power.

As the U.S. Army navigates its way through the Information Age, there is a danger that its ability to respond with force structure will not be able to match the accelerated pace of technological breakthroughs. While the results of warfare and doctrine failing to respond to new technology are well-documented in history, force structure changes can remain evolutionary in nature as long as it remains a steady evolution. This proposal for Division XXI and Regiment XXI is based on a careful analysis of these emerging trends. It does not and could not serve as an end state. More correctly, it can hopefully serve as one point in a much larger continuum. The elimination of the Battalion will be a key by-product of this evolutionary process.

In the final analysis, the human element will always be the crucial factor in a futuristic modernization effort. An ability to abandon cherished organizations and methods that no longer are applicable will be the most difficult aspect of the inevitable embrace of Third Wave warfare. As the Pentomic experiment proved, a learning organization such as the U.S. Army does have the intellectual ability to learn from its peacetime failures as much from its successes. That is the true lesson which should never be forgotten.

## ENDNOTES

1. TRADOC, Force XXI Operations: A Concept for the Evolution of Full-Dimensional Operations for the Strategic Army of the Early Twenty-First Century, Pamphlet 525-5 (FT Monroe, VA: U.S. Army Training and Doctrine Command, 1 August 1994), 3-9.

2. Paddy Griffith, Battle Tactics of the Civil War (New Haven, CT: Yale University Press, 1989), 99.

3. Paddy Griffith, Battle In the Civil War: Generalship And Tactics In America, 1861-65 (Camberley, Surrey: Fieldbooks, 1986), 23.

4. Ibid., 22.

5. Idem.

6. Arthur L. Wagner, Organization and Tactics (Kansas City, MO: Hudson-Kimberly Publishing Co., 1901), 4.

7. Virgil Ney, Evolution of the US Army Division 1939-1968 (Combat Operations Research Group, 1969), 106-109.

8. Larry C. Bland and Sharon R. Ritenour, eds., The Papers of George Catlett Marshall (Baltimore: Johns Hopkins University Press, 1981), 71.

9. Dennis J. Vetock, Lessons Learned - A History of US Army Lesson Learning (Carlisle Barracks, PA: US Army Military History Institute, 1988), 66-67.

10. Maxwell D. Taylor, The Uncertain Trumpet (New York: Harper & Brothers, 1959), 6-7.

11. Glen R. Hawkins, United States Army Force Structure and Force Design Initiatives 1939-1989 (United States Army Center of Military History, 1991), 27n.

12. A.J. Bacevich, The Pentomic Era: The U.S. Army Between Korea and Vietnam (Washington, D.C.: National Defense University, 1986), 68-70.

13. Hawkins, 33.

14. Ney, 73.

15. Department of the Army, The Armored Division and Combat Command, Field Manual 17-100 (Washington: U.S. Department of the Army, 12 May 1958), 39.

## ENDNOTES

16. Ibid., 9.
17. Marvin L. Worley, New Developments in Army Weapons, Tactics, Organization, and Equipment (Harrisburg, PA: The Military Service Publishing Company, 1958), 58-59.
18. Department of the Army, Infantry Division, Field Manual 7-100 (Washington: U.S. Department of the Army, 15 November 1960), 279-280.
19. Ibid., 7.
20. James V. Christy, "What's a Battle Group?," Army (October 1958): 59-60.
21. Department of the Army, Infantry Rifle Company, Table of Organization & Equipment Nr. 7-17C (Washington: U.S. Department of the Army, 13 June 1956), 6.
22. Department of the Army, Infantry Regiment, Table of Organization & Equipment Nr. 7-11C (Washington: U.S. Department of the Army, 28 June 1956), 4.
23. Idem.
24. CONARC, Infantry Division Battle Group, Second (Priority) Echelon and Third (Ready) Echelon Units (Appendix IV), Table of Organization & Equipment Nr. 7-11T ROCID (FT Monroe, VA: U.S. Continental Army Command, 1 July 1957), 3.
25. Idem.
26. Christy, 58.
27. Ibid., 28.
28. Worley, 64-65.
29. FM 7-100, 288-294.
30. Ibid., 295-301.
31. Department of the Army, Headquarters and Headquarters Company Infantry Division Battle Group, Field Manual 7-21 (Washington: U.S. Department of the Army, 26 February 1960), 40-49.
32. Hawkins, 37.



## ENDNOTES

33. FM 7-100, 8.
34. Hawkins, 36.
35. Taylor, 139.
36. TRADOC Pam 525-5, 3-18.
37. FM 100-5, 2-6 - 2-9.
38. Department of the Army, Operations, Field Manual 100-5 (Washington: U.S. Department of the Army, 14 June 1993), 2-11.
39. TRADOC Pam 525-5, 2-8, 2-9, 3-2.
40. Wagner, 7.
41. Ibid., 4-5.
42. Ibid., 3-20.
43. Ibid., 4-6.
44. Richard M. Swain, comp., Selected Papers of General William E. DePuy (FT Leavenworth, KS: Combat Studies Institute, 1994), 266.

## BIBLIOGRAPHY

- Bacevich, A. J. The Pentomic Era: The U.S. Army Between Korea and Vietnam. Washington, D.C.: National Defense University, 1986.
- Bland, Larry C. and Ritenour, Sharon R., eds. The Papers of George Catlett Marshall. Baltimore: Johns Hopkins University Press, 1981.
- Christy, James V. "What's a Battle Group?" Army (October 1958): 57-61.
- CONARC. Infantry Division Battle Group, Second (Priority) Echelon and Third (Ready) Echelon Units (Appendix IV), Table of Organization & Equipment Nr. 7-11T ROCID. FT Monroe, VA: U.S. Continental Army Command, 1 July 1957.
- Department of the Army. Infantry Division, Field Manual 7-100. Washington: U.S. Department of the Army, 15 November 1960.
- \_\_\_\_\_. Infantry Regiment, Table of Organization & Equipment Nr. 7-11C. Washington: U.S. Department of the Army, 28 June 1956.
- \_\_\_\_\_. Infantry Rifle Company, Table of Organization & Equipment Nr. 7-17C. Washington: U.S. Department of the Army, 13 June 1956.
- \_\_\_\_\_. Headquarters and Headquarters Company Infantry Division Battle Group, Field Manual 7-21. Washington: U.S. Department of the Army, 26 February 1960.
- \_\_\_\_\_. Operations, Field Manual 100-5. Washington: U.S. Department of the Army, 14 June 1993.
- \_\_\_\_\_. The Armored Division and Combat Command, Field Manual 17-100. Washington: U.S. Department of the Army, 12 May 1958.
- Griffith, Paddy. Battle In The Civil War: Generalship And Tactics In America, 1861-1865. Camberley, Surrey: Fieldbooks, 1986.
- \_\_\_\_\_. Battle Tactics of the Civil War. New Haven, CT: Yale University Press, 1989.
- Hawkins, Glen R. United States Army Force Structure and Force Design Initiatives 1939-1989. United States Army Center of Military History, 1991.

## BIBLIOGRAPHY

- Ney, Virgil. Evolution of the US Army Division 1939-1968. Combat Operations Research Group, 1969.
- Swain, Richard M., comp. Selected Papers of General William E. DePuy. FT Leavenworth, KS: Combat Studies Institute, 1994.
- Taylor, Maxwell D. The Uncertain Trumpet. New York: Harper & Brothers, 1959.
- TRADOC. Force XXI Operations: A Concept for the Evolution of Full-Dimensional Operations for the Strategic Army of the Early Twenty-First Century, Pamphlet 525-5. FT Monroe, VA: U.S. Army Training and Doctrine Command, 1 August 1994.
- Vetock, Dennis J. Lessons Learned - A History of US Army Lesson Learning. Carlisle Barracks, PA: US Army Military History Institute, 1988.
- Wagner, Arthur L. Organization and Tactics. Kansas City, MO: Hudson-Kimberly Publishing, 1901.
- Worley, Marvin L. New Developments in Army Weapons, Tactics, Organization, and Equipment. Harrisburg, PA: The Military Service Publishing Company, 1958.