TRANSFORMING DEFENSE

Edited by
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December 2001

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ISBN 1-58487-079-6

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FOREWORD

Even before the Bush administration in Washington began its defense reviews, the topic of transforming America's armed forces to meet the security demands of the post-Cold War era and beyond was receiving much attention. The sharp debates about the direction and impact of President George W. Bush's and Secretary Donald Rumsfeld's plans for defense reform have magnified that trend. For that reason, the theme of the Twelfth Annual Strategy Conference conducted by the U.S. Army War College in April 2001, "Transforming Defense in an Era of Peace and Prosperity," was especially timely. The ideas and issues presented in this collection of papers from that gathering will educate and inform anyone interested in the past and future course of American defense reform.

Though conference attendees had many differing opinions about the barriers to defense transformation and how to overcome them, a broad consensus formed that some change is essential to meet future security requirements. They observed at the time that it is ironic that the peace which creates the prosperity and wealth to fund transformation and permits a window of time to achieve it, also decreases public interest and urgency to accomplish it. The terrible events of September 11, 2001, appear to have dispelled public disinterest in the nation's military capabilities, and may provide increased impetus for the drive for defense reform. If the opportunity is squandered, or the wrong choices are made, the costs to the nation someday could be catastrophic.

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PREFACE

From April 17-20, 2001, the U.S. Army War College sponsored a major conference to examine the many issues and questions surrounding the transformation of the U.S. Armed Forces from a Cold War paradigm into a defense establishment ready to meet the complex challenges of the future. The conference brought together at Carlisle Barracks over 230 American and foreign academic, business, government, media, and military representatives. A series of enlightening—and sometimes troubling—discussions highlighted the many opportunities and challenges involved in executing long-term and extensive defense reform. The conference focused on five general themes: an historical overview of defense transformation, change and organizational dynamics, global perspectives on American defense reform, financing the process, and service plans to execute it.

This collection regroups papers and presentations from the conference into three categories: Historical Overviews of Transforming Defense, Transformation Plans and Barriers, and External Views of Transformation. Each section contains an introduction describing the essays that follow, as well as summarizing other relevant conference presentations and discussions bearing on the topic. If presenters did not produce a formal article for publication, their key arguments are still described in the introduction.

The conference concluded while the outlines of the Bush administration's national security strategy and defense budget were still very vague. Details that emerged shortly thereafter, including the passage of a large tax cut, highlighted some of the specific directions—and difficulties—near-term defense reform would feature. The terrorist attacks on New York and Washington have altered some of those parameters, but have also highlighted anew the evolving nature of future threats and the need for

expanded military capabilities. The issues and arguments covered in this collection look backward into the past and forward into the future to illuminate views of the process and problems of American defense transformation for affected decisionmakers. The road ahead is still unclear, but it must be traveled if the United States is to retain its dominant military power. This collection will provide some guideposts and warnings that will be useful along the way.

CONRAD C. CRANE
Editor

PART I:

HISTORICAL OVERVIEW OF TRANSFORMING AMERICAN DEFENSE

American history is replete with examples of eras and circumstances requiring military change, and they were often cited by conference panelists and commentators to illustrate points of discussion. The three essays in this section are a product of the first session of the conference, intended to provide some broad perspectives on this historical basis for defense transformation. Dr. Brian Linn from Texas A&M University opens with an analysis of a century of peacetime change for the Army. Focusing on contemporary and modern issues and problems, he concludes that real "peacetime transformation occurs when there is substantial public and political support and a clear and present danger to the continental United States." He also notes that there is danger in imposing military change without thinking through all the consequences. Dr. Frank Schubert, Chief of Joint Operational History in the Joint History Office of the Chairman of the Joint Chiefs of Staff, compares the employment of American military forces since the end of the Cold War with the traditional roles they have served for the nation. He finds that although there are some differences, the Armed Forces' disparate missions in the 1990s fit the historical pattern of the nation's military experience. Dr. David Jablonsky of the Army War College ends this section with a further examination of the 1990s. He explains how the juxtaposition of the so-called "Powell and Clinton Doctrines" have created a demanding list of requirements for the Army that has energized the drive for service transformation, while producing an "essentially conservative approach to a revolutionary process."

As a follow-up to the presentation of these papers, Dr. Richard Betts from Columbia University gave a provocative address entitled "Looking Forward by Looking Backward." He used the period between the World Wars to illustrate the limited utility of historical comparisons, and highlighted the uncertainties that the future holds. Though wary of too much peacekeeping, he predicted that similar missions will predominate. Consequently, the Army as well as the other services will have to simultaneously develop new warfighting technologies while improving their capability to conduct peace operations. If history provides any useful lesson to guide transformation, it is that there is great risk in establishing military forces too specialized for specific contingencies. They must be able to perform a myriad of missions, and will assuredly also eventually have to fight an unexpected major war in an unexpected place.

CHAPTER 1

PEACETIME TRANSFORMATION IN THE U.S. ARMY, 1865-1965

Brian McAllister Linn

Today's officers may not appreciate just how great a transformation the Cold War imposed on the U.S. Army. As they struggle to articulate an Army Vision for the 21st century, they continue to define the Army's "traditional" strategic purposes as support for the nation's allies, land dominance, promoting regional stability, meeting small scale contingencies, deterring aggression, and, if necessary, fighting a major theater war anywhere in the world. Virtually no one can remember that until just 60 years ago, the Army's missions were interpreted far more narrowly as the protection of the continental United States and, secondarily, the enforcement of the Monroe Doctrine and the guarding of overseas interests. Not until the Cold War did the U.S. military adopt a looser construction of its mission, one that incorporated the protection of the "Free World" and the fighting and winning of the nation's wars. Now that the Cold War has ended, the Army's next transformation may be a return to its historic role of homeland defense.

In order to understand the complexity of transforming defense in an era of peace and prosperity in the United States, it is essential to have some context, some understanding of past efforts at military change. Anyone who has sat through briefings in which senior officials dramatically flash PowerPoint slides detailing the lessons of the past, is aware of the shallowness of much of today's

historical analyses. To escape such superficialities, it is necessary to avoid some of the common weaknesses in the current discussion of historical transformation. All too many start at a point from which the "correct solution" has been revealed, and then work backward to determine the precise moment when the institution succeeded or failed. This approach produces studies in which blitzkrieg, or strategic bombing, or Air-Land Battle is portrayed as the unfolding of a divine plan. But the benefits of case-studies which minutely retrace a preordained path are of little use to those grappling with the problems of the present; much less are they suitable guides for the future. A second failing is to study change by focusing on the ideas, institutions, or technologies which proved of most importance in the following war. But to truly explore military transformation it is necessary to examine how the armed forces prepared, or did not prepare, to fulfill their nation's strategy and their service's mission. This, in turn, means that at least as much attention must be paid to contemporary peacetime needs as to anticipated wartime ones. This last point is of particular importance when the nation's armed forces are tasked with executing a strategy of deterrence. A final, and frequent, error is to rely on a few examples, usually taken out of context, which have been repeated so often that their "lessons" are accepted without question. Rarely is there sufficient effort to go beyond the cliché and question—to cite one of the more popular contemporary analogies—whether comparing the blitzkrieg and the Maginot Line is actually relevant to American defense needs in the 21st century.

This chapter takes a linear, chronological approach and focuses specifically on peacetime transformation in the U.S. Army over a relatively long period, the century between 1865 and 1965. It will describe the circumstances encountered by military reformers in four historic periods of peace, and will try to show their perception of the task of defending the nation's interests in successive eras of dramatic change and innovation. It will seek to identify not only the problems that later scholars have noted, but the

problems and issues that the officers at the time saw as crucial. Through this, there may emerge a more balanced appraisal of the U.S. Army's successes and failures in its recurrent attempts to adapt better to the changing needs of the nation's defense. Such an overview may not produce ready references and convenient lessons, but it will provide a far better appreciation of the transformation process itself and the difficulties inherent in radical change.

To some, this period between 1865 and 1965 is a rags-to-riches story in which the Army, through its professionalism and effectiveness, transformed itself from a small frontier constabulary to the military arm of a superpower. But what is less clear is how this process was achieved, and whether it can be replicated so that the Army can now transform itself for the challenges of a new century. For our purposes, it may be useful to divide the century between the end of the Civil War and the commitment of ground forces to Vietnam into four distinct periods of prolonged peace: from 1865 to the Spanish-American War of 1898; the period from 1899 to the American entry in World War I; the 1919-41 interwar era; and the Cold War era of 1953 to 1965, the period between Korea and Vietnam. Each of these was a period of peace, but also of profound changes in the international strategic environment, in the Army's operational capabilities, and in military organization and technology.[1]

The four decades between the end of the Civil War and the outbreak of the Spanish-American War in 1898 have been termed by one military historian "the Army's Dark Ages," and by military analyst Samuel Huntington as the "years of isolation."[2] Even though marked by early fiscal retrenchment, sectional violence, and periodic panics, this was a period of unprecedented peace and prosperity. The Army, however, benefited but little from the nation's good fortune. The Civil War demobilization was rapid and brutal: within 11 years the million-man Union Army had been reduced to some 28,000. The mobile commands—infantry, cavalry, and field artillery—were scattered across the

Western frontier in company posts, engaged in unremitting company drill, fatigue duty, and little more. When these units took to the field, it was on difficult and sensitive operations such as the pacification of Native American tribes or strike breaking. Dominated by Washington bureaucrats and aging Civil War veterans, the Army was badly equipped, poorly paid, demoralized, and held in low public esteem.

Historians have traditionally taken as their starting point the reforming agenda of Emory Upton and his supporters which took form in the late 1870s. Inspired by Prussia's example, Upton advocated the creation of a general staff, lifetime professional education for officers, and the concentration of mobile forces into large tactical units. Most controversial was his proposal to forsake the nation's traditional military organization of the small peacetime Regular Army and a large wartime citizen-soldier volunteer force, and replace it with a cadre-reserve system capable of mobilizing 150,000 soldiers. According to the standard account, public apathy and congressional obstruction eventually drove Upton to suicide, and only the persistence of his admirers kept his ideas alive, to triumph 3 decades later under Secretary of War Elihu Root. And in the meantime, a series of incremental changes—the adaptation of a modern rifle, the closing of redundant and isolated posts, the development of officer education—all helped prepare the ground for later, more substantial, reforms.[3]

This emphasis on Upton and on organizational reform obscures the reality that in the period 1865 to 1898 some of the Army's most effective spokesmen were those who focused on its role in homeland security. These officers were not necessarily opposed to Upton's agenda—some were enthusiastic supporters—but they concentrated on their service's role in the national defense. In a series of articles and reports, they argued that steam transportation, new weapons, and the advent of the mass army had created a new threat to American security. The risk of invasion might

be, in the words of General William T. Sherman, "simply preposterous," but there was an increased danger that a rival Great Power might stage a sudden raid on a port city to extract political or financial concessions.[4] To overcome this peril, these reformers offered a technological solution based on improving both the construction and weaponry of harbor fortifications, and on increasing the technical skills of the coast defense garrisons. They adapted their view of future war to the parameters of the nation's traditional national security policy—envisioning the Army's task primarily in terms of deterrence and repulse, not the destruction of rival military forces or the conquest of territory. Rather than disdaining civilian interference, as Upton did, officers worked closely with Secretary of War William C. Endicott and with Congress on a special Board on Fortifications or Other Defenses, often referred to as the Endicott Board. The Board effectively harmonized three crucial components: new military technology, the Army's primary mission, and the traditional defense policy. It alerted citizens to the change in the strategic environment and the emergence of a new threat to the nation's security, and it outlined a clear solution. Moreover, unlike Upton's, their views were actually accepted: the 1885 *Report of the Board on Fortifications or other Defenses* led to Congressional authorization for the revamping of major coastal fortifications.[5]

The 2 decades following the Spanish-American War are often portrayed as the most successful peacetime change the Army has ever experienced. Aided by progressive Army reformers, between 1899 and 1903 Secretary of War Elihu Root created an Army Chief of Staff and a General Staff, almost tripled manpower, reorganized the military education system, founded the Army War College, began turning the National Guard into the primary federal reserve force, and made many other, if less important, improvements. These "Root Reforms" have been seen by many as signaling an almost revolutionary transformation of the Army from a constabulary to a modern military. Indeed, in a recent address to the Army War College, Army

Chief of Staff Eric Shinseki drew a direct historical parallel between the current situation and that faced by Root and his military advisors a hundred years ago.[6]

The era of the Root reforms may still be a powerful symbol to today's high command as they seek to rally for tomorrow's challenges, but it is important to keep the military reforms of 1899-1903 within their historical context. Root's 1899 declaration that the real object of an army is to prepare for war has been quoted approvingly by generations of military writers, who have then claimed—*post hoc*—that it marked a primary shift in the U.S. Army's mission from constabulary duties to fighting the nation's wars. However great the progress since Root, it is important for the historical record, if not the popular one, to note that this was not a transformation that the Secretary or his military allies intended. A closer reading of Root's 1899 report makes it clear why he thought reform was necessary: to improve the nation's continental defenses and to provide troops for the newly acquired overseas possessions.[7] He had no intention of engaging in Great Power conflicts overseas; rather he wanted a balanced mixture of mobile forces and fortifications that could more effectively protect the homeland and the territories. Root's successor, William H. Taft, showed a clear appreciation of Root's priorities when he secured funding for a new coast defense construction program. In other words, Root's reforms were inherently conservative and proposed no radical alteration of the Army's traditional mission. As in the case of the Endicott Board, successful change was linked with powerful political support, but only for very specific, and limited, objectives. When reformers moved too far away from their service's traditional mission, they were unsuccessful.

A second, and related point, is that the Root era of accelerated reform was of rather short duration—perhaps no more than 4 years. Taft slowed the pace dramatically, in part because he had to clarify much of the confusion created by Root. The rest of the decade witnessed bitter resistance to

change from entrenched interests and a rapid diminution of political support for military reorganization. It was not until 2 decades after Root's first report that the Army was able to implement fully the reformers' program, and then only because of the demands of sending millions of soldiers to fight in Europe—-a scenario neither Root nor his military assistants envisioned in 1899.

Root's legacy was less impressive in other areas. Some of his institutional reforms, most notably joining the coast and field components into the Artillery Corps, created a great deal of organizational and personnel turbulence. He, or his military advisors, failed to appreciate either the impact of new military technology or the need to integrate weapons system and doctrine. The Army did produce excellent small arms and a very good field gun, but, as numerous critics have noted, it remained unaware of the revolutionary implications of such military technologies as the airplane, the internal combustion engine, and the machine gun. Although a great improvement on earlier tactics, the 1905 *Field Service Regulations* and its successors still championed an anachronistic belief in the power of the individual rifleman and the tactical assault.[8] As one analyst recognized in the years prior to World War I, the Regular Army saw its mission as "to fight at the drop of a hat," but only if such fighting was limited to "some minor disturbance" in Canada, Mexico, or the Caribbean.[9] The deadly insularity of this viewpoint became apparent in 1917, when the absence of both a training system and a reserve force led to a chaotic mobilization and a 1-year delay before the American Expeditionary Forces (AEF) could undertake combat operations.

Historians have also failed to appreciate the unforeseen consequences of the Root transformation, particularly in the areas of morale, manpower, and readiness—all issues of vital importance to today's officers. Far from reforming and professionalizing the officer corps, the decade after Root's appointment was characterized by widespread accusations of favoritism and careerism. This was especially true of the

higher command, which was widely criticized for its distance from the needs of the field army. The selection of Leonard Wood, a medical officer with very limited command experience but impressive political connections, to Army Chief of Staff may have marked the nadir of faith in the promotion system and the senior leadership. Root and his successors also failed to solve the Army's persistent manpower problems. The Philippines alone needed a garrison roughly half the size of the pre-1898 Regular Army, and to this was added the requirements for garrisons in China, Panama, and Hawaii, for deployments into Cuba, and, after 1910, for duty on the Mexican border. Indeed, for most of the early 1900s roughly a third of the army was assigned overseas, and in 1 year the figure was closer to half. The demands of overseas service, recruiting, working with the reserves, and education took so many officers from their commands that in 1905 the Secretary of War warned absenteeism was "a menace to the discipline of the Army and its effectiveness as a fighting machine."[10] Coupled to this were the terrible, and often overlooked, effects of prolonged service in unhealthy climates. Not until 1908 did the rates for disability discharges and admission to hospital for sickness return to the levels they were prior to the Spanish-American War. Living conditions were often appalling, as officers and their families were shuttled from one set of dilapidated, vermin-infested quarters to another thousands of miles away. Small wonder that there was a marked increase in resignations, and that in 1907 the Army could fill less than two-thirds of its authorized vacancies for second lieutenant positions.[11]

The turbulence was perhaps even worse in the enlisted ranks—so much so that in 1906 Taft told Congress that "the army we have now is nothing but a skeleton army."[12] The desertion rate rose by 5 percent between 1898 and 1905. Reenlistments plummeted as veteran soldiers and noncomissioned officers (NCOs) left the service—because of disease, disgust, or jobs in the civilian sector that paid ten times as much as their military benefits. Not surprisingly,

the outflow was greatest among the long-service, highly skilled specialists most able to transfer their skills to the market. These experienced personnel were replaced by recruits who often failed to meet the minimum admission standards. For their part, soldiers complained bitterly that instead of training to defend the nation, they served as common laborers, garbage men, farm hands, kitchen help, and domestic servants. A series of investigations into the causes of soldiers leaving the service—legally and illegally—revealed the same complaints: low pay, overwork, limited or nonexistent recreational facilities, confusing or misleading enlistment contracts, frequent changes of officers and stations, inexperienced or incapable NCOs, and recruits of low intelligence and morals.[13]

So what can be learned from the peacetime transformation in the Root era? The first insight is the historical truism that those who seek to learn lessons from history all too often disregard information which contradicts the "lessons" they want to extract. This is especially true of those who hail the Root reforms as a model for change without studying their immediate consequences. Second, it is important to appreciate the Root reforms for what they were—an effort to prepare the army to execute better its traditional mission of continental defense. Third, transformation had many side-effects far beyond the reformers' intent. Although it is unfair to blame Root for Army woes in the 1900s, he shares some responsibility for an overall decline in morale and for increased personnel turbulence. Fourth, transformation needs to be followed through and its effects are gradual, not immediate. Fifth, the benefits of Root's improvements were uneven and were chiefly shared by a very small group: influential reformers, general staff officers, political generals such as Leonard Wood and John J. Pershing, and the students at the Command and General Staff College at Fort Leavenworth and the Army War College who rose to command in World War I. But if you look to the field army—to the thousands exiled overseas in unhealthy and hostile climates, to the

demoralized recruits, to the companies stripped of their officers, to the torrents leaving the service—then transformation assumes an entirely different, and far less positive, meaning.

If the Root era is too often uncritically perceived as one of successful organizational change, the period between World War I and World War II is often derided as the time when the U.S. Army failed to adjust to new developments in land warfare—particularly in mechanized warfare, operational doctrine, communications, and combined arms warfare. The Army's delinquency appears especially egregious when contrasted with such innovations as blitzkrieg, amphibious assault, and strategic bombardment.[14] Because the interwar era has assumed such importance in the current military transformation debate, it is worth exploring the Army's experience at some length. To do so, it is necessary to ask questions which are too often ignored. What were the nation's military needs? What was the Army's mission? In what areas did the Army successfully adapt? What factors inhibited transformation?

In their efforts to expose the failures in preparation for World War II, critics tend to overlook the national strategic context in which the interwar U.S. Army operated. Unlike that of its later adversaries, American policy was not based on disrupting the global balance of power and carving out a new empire. Accordingly, there was no need for military organizations to wage aggressive wars of conquest. Rather, for most of the interwar period the Army's mission was the protection of the homeland and, trailing considerably behind in priorities and allocations, the defense of overseas territories. It is also important to recognize that the "interwar period" actually consists of two distinct eras, divided roughly by decades. In the 1920s the United States was internally prosperous, its government placed much faith in the international security framework established by the Washington Naval Treaties of 1921, and the world was at (relative) peace. In the 1930s the United States was struggling with economic depression, faced an aggressive

Japan and an increasingly hostile Germany, and wars and rumors of wars were common. Not surprisingly, over these 2 decades the Army's prescriptions for reform shifted along with the changing domestic and international situation.

The primary threats to the nation's security in the immediate post-war period were a major war with a British-Japanese coalition and policing the ever-turbulent Mexican border. As is the case today, achieving such widely disparate missions required correspondingly different capabilities, weapons systems, and organizations. To counter the first danger, the Army had to develop a strategy and force structure to defend the Atlantic coast and the Pacific territories. To counter the second, it needed light, mobile combat units capable of operating in the Southwest's rugged terrain. This, in turn, suggested the Army continue to improve the coast defenses, maintain a horse cavalry component on the border, and develop plans to mobilize a large field force in the event of a major conflict. Only by the most fanciful stretch of imagination would the nation or the Army require a combined arms force built around air and armored spearheads.[15]

In the immediate aftermath of the Great War, both the United States and its armed forces had a number of successes in adapting to the changes in the strategic situation. The 1921 Washington Naval Treaties dissolved the Anglo-Japanese alliance, greatly lessening the danger of a two-ocean war and greatly enhancing continental security. The 1920 National Defense Act appeared to demonstrate that both the army and the nation had drawn the correct conclusions from the war. Designed to create a new military organization for the post-war security situation, it abolished previous distinctions—and rivalries—and created a unified "Army of the United States" built around a 298,000-man Regular Army, a 435,000-man National Guard, and a potentially larger federal organized Reserves. Army service journals lauded the Act as the first real declaration of a national security policy in American history.[16]

Within the Army itself, there were many indications of a rapid and successful assimilation of the lessons of the Western Front. The Army's post-war operational doctrine, the 1923 *Field Service Regulations*, embodied an effective combined-arms system. Equally impressive was Brigadier General William G. Haan's "Positive System of Coast Defense." Issued in 1920, it addressed the long-recognized problem of protecting the coastal areas between the fortresses. Haan recognized the similarity between crossing No Man's Land and an amphibious assault, and he created a flexible defense in depth that would have channeled the attackers into killing zones, pinned them on the beaches, and then struck them with overwhelming firepower. It was a doctrine well-suited to the Army's core missions of protecting the continental United States and the Pacific possessions.[17]

These early successes were, unfortunately, not continued for the rest of the interwar era. Under Republican administrations determined to practice fiscal restraint, encourage business, and avoid foreign entanglements—policies enthusiastically accepted by the voting public—the United States put its trust in diplomacy, tariffs, arms treaties, and isolationism. No sooner had the National Defense Act been passed than Congress all but abrogated it. In the years between 1923 and 1936, it was not unusual for the Regular Army and National Guard to be manned at less than half their authorization, and the Reserves remained a hollow force. For most of this period, the Army fielded only one active division—and that was the half-strength force stationed in Hawaii. Successive chiefs of staff and secretaries of war drew both White House and Congressional attention to the rapid decline of the nation's defenses, but to virtually no effect.

Although the major inhibitions on transformation during the interwar period were political and popular indifference and a complete lack of financial, materiel, or manpower resources, the Army bore some responsibility for its problems. The Army leadership failed to recognize that

transformation is a continual process—what was progressive in the early 1920s too often became a major brake on innovation within a decade. This is especially true in the crucial field of developing technology. With some justification, Congressmen such as Ross Collins could complain that the Army's own leadership was its most effective barrier to modernization. Chief of Staff Douglas MacArthur's 1934 report bemoaned the fact that the army could field only a dozen tanks built after World War I, but he himself had dissolved his predecessor's experimental armor force on the parochial, even reactionary, argument that the mechanized force violated the mission boundaries between the combat branches. Army conservatism and lethargy was apparent as well in the long delay to develop and distribute even the most basic of weapons. Despite the widespread belief that mortars and rifles—not tanks—would provide infantry sufficient firepower to fight through enemy defenses, the Army took over 2 decades to issue the semiautomatic M-1 rifle, and soldiers were issued the obsolete Stokes mortar right up to the outbreak of war.[18]

On the face of it, the Army's institutional conservatism and resistance to change is nowhere more apparent than in the interwar Coast Artillery and the Cavalry—two branches poles apart in their traditions and missions. Coast Artillery officers remained fixated on their weapons and technical skills, apparently oblivious to the fact that their marvelous long-range guns were helpless against airplanes.[19] The case of the interwar cavalry is even more revealing. From the *Cavalry Journal* one can cull numerous examples of anachronistic thinking and an almost bizarre resistance to innovation and change. Major George S. Patton, for example, in a 1922 article explaining the cavalry's poor showing in World War I, declared that mechanized warfare and firepower were highly overrated: "The bayonet charge and the saber charge are the highest physical demonstration of moral victory. The fierce frenzy of hate and determination flashing from the bloodshot eyes squinting behind the glittering steel is what wins."[20] It

would be comforting to follow the path of some military commentators and hold up the Cavalry and Coast Artillery as cautionary examples of military institutions that refused to change, and thus doomed themselves to irrelevance and extinction. But this is ultimately unsatisfactory as an explanation of the difficulty of peacetime reform.[21]

Rather than seeking to assign blame, it is better to recognize the historical context in which these two branches operated, and not to allow our knowledge of World War II to obscure the reality these officers faced in the 1920s. Coast Artillery officers such as Johnson Hagood and Stanley Embick were among the interwar army's most original and innovative strategic thinkers. Far more than most, they tried to tie the army's force structure to its assigned mission—that of protecting the continental United States. Veterans of Soissons or the Meuse Argonne might laugh at Patton's romantic call for a return to the saber, but they could find little to refute his assertion that Western Europe was the only region in the world where both resources and transportation networks allowed for the efficient use of tanks. Since neither Patton nor any other officer envisioned another American expeditionary force to Europe, it made far more sense to structure the post-war U.S. Army to fight in the jungles of the Philippines, the deserts of Mexico and Texas, and the mountains and forests of Canada. For such locations there appeared little need for armor but a great need for cavalry.[22] Ultimately the Cavalry and the Coast Artillery were of little importance in World War II, but throughout the 1920s, both branches were fulfilling missions that were an essential part of the nation's defense policy.

In retrospect, it appears that much of the criticism directed against the interwar Army for its conservatism and failure to innovate is not particularly useful as a guide for current issues. At least in the years immediately following World War I, the Army and the nation appeared to have made a successful transformation for the challenges of the post-war world. The heart of the interwar Army's problem

reinforces the lesson of earlier examples: that peacetime transformation is most likely when both public and political opinion supports it. Given that for most of this period the nation was secure from attack, the Army could not argue that it was incapable of fulfilling its primary mission. Equally importantly, throughout the 1930s the nation was in a state of economic depression, isolationism was rampant, and Army needs had a very low priority. In such circumstances, criticizing military leaders for their inability to anticipate future dangers or recognize the significance of specific technological and doctrinal developments is both intellectually unrewarding and mean-spirited. More importantly, it does very little to help today's officers anticipate future dangers.

The peacetime Army that served in the era between the Korean and Vietnam conflicts, roughly from 1953 to 1965, may have faced greater challenges to the nation's security than any of its predecessors. The onset of the Cold War led to the appearance, for the first time, of an opponent with the ability to strike deep into the continental United States. The nation's commitment to foreign governments and NATO insured not only that large military forces would be permanently deployed overseas, but that the United States would now fight as a member of a coalition. The new emphasis on coalition warfare also applied within the U.S. armed forces—for any war would require all the services to work together. Yet at the same time, there were a number of similarities to the U.S. Army's traditional priorities: continental defense was a cornerstone of Dwight D. Eisenhower's New Look, and the inheritors of this mission—the gunners in the HAWK and NIKE batteries—received a disproportionate amount of funding and resources.[23]

As in the immediate aftermath of World War II, the United States moved rapidly to transform its defense establishment towards the challenge of the post-war world. The National Defense Act of 1947 and its 1949 amendments radically restructured the nation's armed forces, creating a

unified National Military Establishment, a Secretary and a Department of Defense, and, to provide the President with the corporate wisdom of the armed forces, a Joint Chiefs of Staff (JCS). The president, in turn, could expect the Chiefs to implement the federal government's policies, ensure a coordinated and rational approach to national defense, and oversee their respective services' adherence to the national security policy. In practice, the results of this transformation were less than impressive. According to his biographer, President Eisenhower "was nearly driven to distraction" by the service chiefs' resistance to his New Look, their constant bickering and in-fighting, their recurrent challenges to his budgets, and their refusal to accept any decision as final.[24] The Army was particularly recalcitrant, as witnessed by the "revolt of the colonels," by the controversy surrounding General James M. Gavin's retirement, and by two books from former Army Chiefs of Staff criticizing Eisenhower's military policies.[25]

Much of the reason for the Army's prominent role in the 1950s interservice battles was that its historic mission, and its entire relevance as a combat service, appeared at stake. The smoke had barely cleared from Hiroshima before aviation enthusiasts were claiming that the U.S. Air Force was the only service capable of winning a war with the Soviet Union. One general informed students of the 1956 class of the Army War College that as long as it had a superiority in air power, the United States required only an army big enough to guard the tomb of the Unknown Soldier.[26] Even more disturbing, both President Eisenhower and Congress appeared to agree. Eisenhower's New Look stressed the primacy of nuclear weapons and air power, and throughout the 1950s the Air Force received almost twice as much money as the Army.

In their efforts to revive their service's place in the national defense, army planners had to adjust to the transformation in warfare wrought by the atomic bomb. Nuclear weapons appeared to negate a major challenge to what had emerged as the U.S. Army's major strength in

World War II—the accumulation, distribution, and coordination of massive amounts of resources and manpower across time and space. Nevertheless, Gavin was not alone in his recognition that a few tactical nuclear weapons would have made the massive concentration of men and resources on the Normandy beachhead a death trap. The Korean War sent an even stronger message that the Army had to change. In the early fighting of 1950 the power of Russian armor and the sophistication of Soviet tactics proved a rude shock. Even more discouraging was the recurrence of complaints similar to those of 1944—that American combat units were fighting with inferior weapons and equipment, and that their combat organizations were inefficient and weak. In response, the army greatly increased the firepower and endurance of its tactical units—but such reforms were achieved at such a cost in mobility that they were of debatable use on any battlefield but Korea.[27]

Thus, by the mid-1950s, the army high command was in a distinct quandary. The rival services were doing so much better in the annual budgets that the Army was threatened with the equivalent of the NCAA "death penalty" for recruiting violations—it would fall so far behind in research, development, training, and transportation that it would never catch up. The atmosphere in Eisenhower's administration was, according to one officer who served there, "brutal. . . it seemed obvious that the Army was going down" and could expect no support for its "traditional" missions.[28] Eisenhower's Secretary of Defense, "Engine Charlie" Wilson, despised Chief of Staff General Matthew B. Ridgway and the Army. The JCS Chairman Admiral Arthur Radford championed "more bang for the buck" nuclear weapons and refused to pass on Army objections to the policy of massive retaliation.

Faced with what many officers interpreted as a threat to the existence of their service, the Army undertook comprehensive, total—and in retrospect often poorly executed—effort to create an atomic-era military force. Both

the need for institutional survival and Eisenhower's New Look policy drove the army towards creating the Atomic Field Army [ATFA] which would allow the army to stake its claim on the nuclear battlefield. Determined to break the Air Force's monopoly and provide its own units with a nuclear capability, the Army rushed into production a massive 280-mm artillery piece. Amid great publicity, on May 25, 1953, "Atomic Annie" fired an 800-pound atomic warhead at a target over six miles away. Unfortunately, this great photo op was about as good as it got: the 280-mm gun soon proved to be all but unusable in any foreseeable combat scenario. Weighing 85 tons, it required two tractors to move it and was so unwieldy that it could take an hour of careful maneuvering to get it under a bridge. Its instability and propensity to slide or tip when maneuvered on anything but firm and level ground earned it the nickname the "Widow Maker." To complicate the Army's problems further, the gun was very unpopular among Europeans. Within 2 years it had been surpassed by other weapons, and was taken out of service within a decade.[29] The Redstone Missile project offered the Army a chance to develop its own long-range tactical and theater-level nuclear threat, but at the cost of a bitter, and ultimately unsuccessful battle with the Air Force which lasted throughout the 1950s. The Army also explored the possibility of short-range tactical missiles which could be used by smaller and smaller units. The logical extreme of this was the infamous Davy Crockett—a light, portable rocket that could lob a tactical nuclear warhead slightly over a mile, vaporizing enemy tanks and its own crew in one mini-mushroom cloud.[30]

Having staked its claim, the Army soon found unforeseen problems in transforming to fight on the nuclear battlefield. At the Infantry School, the Combat Developments Office tried to turn the Army's vision of small, highly mobile, and well-armed forces into a practical plan for a series of combat vehicles immune to nuclear blasts and radiation. Such vehicles needed to be easily transportable by air to rough and primitive airfields, so they

needed to be light and compact. They also had to have great range, because the contaminated area might extend for hundreds of miles and fuel might be unavailable. Finally, these vehicles needed powerful weapons systems to allow them to take on the heavier and more numerous Soviet armor. Unfortunately, a vehicle which combined all these attributes did not exist. Ultimately, the only solution they could come up with was for the Army to build a vehicle of some as yet undiscovered substance, which would use an as yet undiscovered fuel source, and would fire an as yet undiscovered weapon.[31]

An even more famous, or infamous, example of the Army's effort to transform itself was the pentomic experiment of 1956 to 1961. Although much ridiculed, in its original incarnation it was an innovative concept of considerable merit when the specific circumstances for which it was designed are considered. The pentomic organization grew out of the army vision of the atomic battlefield: "battle groups" would be speedily transported to the target from widely separated locations; they would concentrate to seize the objective; then rapidly depart before the enemy could launch a nuclear counterstrike. The pentomic era was inaugurated with much fanfare in 1956, when Chief of Staff Maxwell D. Taylor's World War II unit, the famous 101st Airborne Division, was reactivated. As described by one of the division's first battle group commanders, the 101st was a "light, lean, and mean" force—the forerunner of today's air assault and air mobile divisions—that could also deliver devastating firepower, including its own organic tactical nuclear weapons.[32]

Within 5 years, the Army repudiated the pentomic experiment. There were a variety of problems, some of them more reflective of the Army's convoluted bureaucratic needs than of inherent weakness in the pentomic organization. Officers protested that the battle group structure cut out all combat commands between captain and colonel. The key technologies that would have allowed the divisions to maneuver on the nuclear battlefield—not least the infantry

combat vehicle mentioned above—were never developed. The Air Force dragged its feet in developing the air transportation necessary to deploy the battle groups overseas. Perhaps the most serious problem was that the pentomic organization was unsuited to anything but the nuclear battlefield. In the post mortem, virtually everyone denied responsibility for the experiment. The 101st's commander, then Major General William Westmoreland, although a protégé of the Chief of Staff, placed the blame elsewhere: "I was never enthusiastic about the [pentomic] organization, and General Taylor knew it at the time."[33] For his part, Taylor intimated he was only the executor of policies that his predecessor, Ridgway, had committed to long before. The Army's official history branch in turn blamed Eisenhower's New Look. In its origin, development, brief history, and termination, the pentomic experiment has much to teach today's Army about the dynamics and pitfalls of top-down transformation.

In assessing the Army's effort to transform itself after the atomic revolution, one would have to judge it a failure. There were some successes—particularly in the areas of strengthening the NATO alliance, in logistics and aviation, and in airmobile warfare. Nevertheless, a fair assessment would be that, especially in relation to other services, the period between Korea and Kennedy was not a happy one for the Army. At times it seemed willing to embrace any fad or fancy that would show that it was still useful. In a revealing aside, Chief of Staff Taylor admitted that he chose the term "pentomic" because it had the ring of a Madison Avenue advertising campaign. Similarly, Taylor's Vice Chief of Staff General Clyde D. Eddleman recalled admiringly that among the Chief's accomplishments were that he "dressed the Army up a great deal" with a flag, an official song, and new green uniforms.[34] It was not until the 1960s, with presidential and popular acceptance of "Flexible Response," that the Army once more emerged as an equal partner in the defense establishment.

This overview of a century reveals some general rules which may serve as guides for the current discussion on military change. First of all, the success of a military force's ability to reform itself must be considered within the context of the service's primary purpose. For most of the century covered in this chapter, the U.S. Army's mission was homeland defense, and it is by that criterion that its success or failure should be judged.

A second rule is that for the American Army, radical change occurs only in certain circumstances, most particularly when it is supported by the political establishment and when it is perceived as allowing the Army to execute better a well-recognized and accepted mission. The Endicott Board, the Root reforms, and even the 1920 National Defense Act are all examples of this. When political or popular support is lacking—as in the case of Upton's proposals, the post-World War I era, or the 1950s—then reform is either minimal or stillborn.

A third rule is that successful change often spawns a host of unforeseen problems. The Root era witnessed a decline in Army manpower, readiness, and morale. Although it is fashionable to hail change and damn conservatism, there are great dangers in imposing change without thinking through the consequences.

Fourth, the success of Army transformation must be assessed against the specific challenge soldiers at the time faced. The 1920 Defense Act, for example, in conjunction with the Washington Naval Treaties, appeared to provide Americans with a rational military policy and an Army suitable for all foreseeable contingencies. Only from the perspective of the late 1930s does it appear inadequate.

Finally, the forces which are most necessary to transform in peacetime may not be the ones who bear the burden in war. If history is to be of any use in studying peacetime change, it is necessary to study not only the combat arms that were used in later wars, but the agencies responsible for enforcing strategy in peace. Under this

criterion, for most of the Army's history, the Coast Artillery—a branch that with a few minor exceptions did not fire a shot in anger in 130 years—was one of the most effective agents of the nation's strategic interests.

Thus, to sum it up at its most basic: historically, peacetime transformation occurs when there is substantial public and political support and a clear and present danger to the continental United States. Anything beyond the realization of this objective may generate a great deal of rhetoric, but rarely does it result in long-lasting political or financial investment.

ENDNOTES - CHAPTER 1

1. The first period, the 4 decades after the Civil War, witnessed most Western powers adopt the Prussian general staff model, the mass conscript army, and rapid-fire long-range weapons. The 2 decades preceding World War I also saw a host of developments, including the adaptation of the airplane and the internal combustion engine for military purposes. In the 2 decades after the Armistice, improvements in existing technology allowed for the development of fast, mobile, combined arms warfare on an immense scale. Finally, in the years after World War II and Korea, there were the military challenges of the atomic bomb, the Cold War, and the emergence of militant nationalism in the Third World.

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4. William T. Sherman, *Annual Report of the War Department* (*RWD*), 1880, chap. 1, p. 5. A number of the most influential officers discussed the dangers of a sudden raid: Sheridan in *RWD* 1884, 1:49; John M. Schofield, *Forty-six Years in the Army*, New York: Century Co., 1897, pp. 456-458; Arthur L. Wagner, "The Military Necessities of the United States and the Best Provisions for Meeting Them," *Journal of the Military Service Institute* (*JMSI*), Vol. 5, September 1884, pp. 237-271; John Gibbon, "The Danger to the Country From the Lack of Preparation for War," *JMSI*, Vol. 11, January 1890, pp. 16-18. On the Regular Army's view of its role in the national defense, see the testimony of Winfield Scott Hancock and others in Ambrose B. Burnside, "Report on the Reorganization of the Army," Report 555, 3rd Session, 45th Congress, Washington, DC: U.S. Government Printing Office, 1878.

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6. On the Root era, see James L. Abrahamson, *America Arms for a New Century: The Making of a Great Military Power*, New York: Free Press, 1981; Ganoe, pp. 416-439; Weigley, *History of the U.S. Army*, pp. 313-334; Kenneth R. Hagan and William R. Roberts, eds., *Against All Enemies: Interpretations of American Military History from Colonial Times to the Present*, Westport: Greenwood Press, 1986, pp. 173-234; Huntington, pp. 251-254; Barrie M. Zais, "The Struggle for a Twentieth Century Army: Investigation and Reform of the United States Army After the Spanish-American War, 1898-1903," Ph.D. dissertation, Duke University, 1981, pp. 15-24.

7. *RWD*, 1899, chap. 1, p. 45; William H. Carter, "Elihu Root—His Services as Secretary of War," *North American Review*, Vol. 178, January 1904, pp. 110-121.

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31. Combat Developments Office, U.S. Army Infantry School, "Infantry Fighting Vehicle for the PENTANA Combat Group, U," May 29, 1958, MHI. PENTANA was an acronym for Pentagonal Atomic-Nonatomic Army.

32. Forsythe Oral History, p. 333. The history of the pentomic experiment is badly in need of scholarly treatment. For good overviews, see Bacevich, *Pentomic Era*; Kalev I. Sepp, "The Pentomic Puzzle: The Influence of Personality and Nuclear Weapons on U.S. Army Organization, 1952-1958," *Army History*, Winter 2001, pp. 1-13.

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CHAPTER 2

THE AMERICAN MILITARY TRADITION AND POST-COLD WAR OPERATIONS[1]

Frank N. Schubert

Since the collapse of the Soviet Union and the end of the Cold War, the United States has been the world's preeminent military power. Despite the lack of a substantial conventional threat to this status and no major war to fight, U.S. armed forces were extremely busy in the 1990s, with diverse missions that frequently sent American military personnel far from their homes and families. The assignments included stability operations,[2] humanitarian missions, responses to disasters and political crises, and enforcement of American law and policy concerning illegal drugs and immigration. Some duties, such as operations focused on the Saddam Hussein regime in Iraq and missions in the Balkans, have been long and costly. Others, such as the evacuation of Americans from troubled capitals of sub-Saharan Africa, were quick and relatively cheap. Overall, literally hundreds of operational names were applied to a bewildering array of deployments.[3]

There have been other similar periods. In the 1920s and 1930s, U.S. armed forces also lacked a big war to fight. Still, the period was very busy for the services, with a wide range of operations in and increasingly outside of the country, in the western hemisphere and in coastal zones of east Asia. These ranged from long-term stability operations in the Caribbean to managing water resource programs that provided work for thousands during the Depression.

Earlier still, between the Civil War and the war with Spain in 1898, the United States also faced no major external threat. Despite the absence of a big war to fight, U.S. armed forces were very busy, especially the Army in the transMississippi West. Numerous campaigns against Indians—small, grueling conflicts that punctuated long periods of what might be called "interpositional peacekeeping"—put the Army between growing numbers of civilian settlements and the outraged natives whose lives were being disrupted and irrevocably changed.

As these summaries suggest, in 2 centuries the United States has experienced long periods with no major threat to its security, periods in which the armed forces conducted large numbers of small, diverse operations. Overall the American military tradition has evolved as a duality that reflected this experience. On one side has been defense against foreign enemies and preparation for such employment. This mission is widely considered to be the *raison d'etre* of our armed forces. Procurement programs, training, doctrine, and organization focus on this mission, and in the year 2000, this view extended beyond the military to senior officials of both major political parties.[4] The other side has involved law enforcement, disaster relief, and nation-building. This category, sometimes called *gendarmerie* or constabulary work, also includes what were once called pacification and "small wars," and later became known as counterinsurgency or contingency operations.[5]

The U.S. Army, "the child of the frontier," as historian Robert M. Utley put it, had two parents. One was the operational requirement that emerged from conflict between westering settlers and the native peoples who resisted their encroachment.[6] The other was the inability of short-term local volunteer organizations to cope with the problem, shown in expeditions in Ohio during 1790 and 1791.[7] The Army's major pre-Civil War operations against Indians extended from Florida to the Great Lakes.[8] There were conventional wars against Britain in 1812-15 and Mexico in 1846-48, but the army—"overworked, under-

funded, and dispersed among many small posts"—"spent the bulk of its time policing the nation's ever-changing western boundary." Soldiers enforced laws and treaties, explored and policed new territories, punished hostile aggression, and regulated contact between settlers and Indians.[9]

Meanwhile, the Navy protected Americans and their commerce, with landings in Latin America and in the Pacific.[10] At least 24 times between the War of 1812 and the Civil War, sailors and Marines landed to protect Americans and their property far from American shores or to punish those who had abused American citizens. Sometimes, they also shielded third-country nationals and their property.[11]

Other Naval operations of this period enforced American law as well as asserted the freedom of navigation. Between the U.S. ban on the slave trade in 1808 and the 1861 onset of the Civil War, American vessels operated against slavers along West African coasts. As the secession crisis approached, operational tempo increased. In 1859, the Navy captured five carriers of human cargo, including one at the mouth of the Congo River. In 1860, the last full year of peace at home, 13 slave ships were seized. Meanwhile, operations against pirates also included landings on Greek islands in 1827 and actions near Hong Kong in the 1850s.[12]

Maritime and land operations shared certain traits. The opposition usually amounted to irregular or semi-irregular forces. Also, these operations tended to be diverse, diffuse, and complex, and to lack decisive results. They came in times of no apparent foreign threat and occurred in places many Americans might have considered to be on the margins, in Indian country, in the Caribbean, and along Asian coasts across the Pacific: Siberia, China, Korea, the Philippines, and islands in the south Pacific.[13] The statement of General Henry H. Shelton, the Chairman of the Joint Chiefs of Staff, in the summer of 2000, that "Today the United States strives to keep its military forces combat-ready while, at the same time, engaging in missions

that do not routinely involve combat,"[14] could just as well have applied to the 19th century as to the onset of the 21st.

As historian John M. Gates noted, "Much of the Army's work on the frontier was that of a frontier constabulary." The Army "served eviction notices on Indians and then forcibly removed them when required." If tribes left their reservations, the Army "found them and coerced them back," or fought them until they again surrendered. There were seldom large battles that looked like war. "Most of the time," according to Gates, "it was routine though difficult police work."[15]

Soldiers then, like soldiers now, disliked such work and thought it kept them from their proper business, preparing for and fighting real wars against foreign enemies.[16] Brigadier General John Pope, who commanded the Department of the Missouri, complained in 1881 that fighting Indians was not "conducive to the proper discharge of military duty or the acquirement, either in theory or practice, by officers or soldiers, of professional knowledge or even of the ordinary tactics of a battalion."[17] Talking about the 1990s, Richard Shultz noted the persistence of such views: "The military defines itself, almost exclusively, as either deterring wars or fighting and winning them. Civil-military operations and those elements of the force structure that engage in them are not judged as being very important—and this has been an enduring aspect of U.S. military culture."[18]

John Pope's generation found ample ground for complaint. New operational requirements that resembled gendarme work surfaced as the federal role in society expanded. There were major responsibilities to be fulfilled for millions of Civil War veterans. The Freedmen's Bureau, designed to ease the transition to freedom for ex-slaves, moved into relief work in a big way, and military units garrisoned southern communities during Reconstruction.[19] All the while, Indian wars represented the main form of combat, and humanitarian operations that rarely required

a shot to be fired in anger became more prevalent. The frontier Army responded to calls for relief from communities beset by floods, blizzards, drought, and even grasshoppers, and quelled the labor disputes that grew in number, size, and scope as industrialization progressed.

Soldiers hated strikebreaking. Accustomed to seeing themselves as spearheads of a civilization sweeping across North America, they found it hard to confront working-class Americans striving for better wages and working conditions. Such duty also tarnished popular respect for the Army. Nevertheless, the job got done. As Michael Tate wrote, the "century ended not with images of universally respected cavalrymen dashing across the West in search of renegade Indians and outlaws, but with a growing public dissatisfaction with the Army's continued service as a domestic constabulary."[20]

When not responding to calls for help, the Army surveyed and built roads, protected telegraph lines, laid out river crossings, and protected commerce—essential nation-building activities. Meanwhile, military leaders tried to look past Indian conflicts, plan for conventional warfare, and create an Army "designed for the next conventional war rather than the present unconventional war."[21]

The operational pendulum swung between gendarme assignments and an occasional foreign war. Big conventional conflicts were rare. After the war against Spain in 1898, which saw American forces in action in the Caribbean and the Pacific, the United States entered another period with no apparent conventional threat but with ample points of instability and conflict on the margins of American interests. In the first half of the 20th century, these edges again tended to be in the Caribbean, along the Mexican border, and along Asian coasts, with China increasingly the focus of maritime operations. Compared to the years between the Civil War and 1898, naval operations

in Latin America almost tripled to 37 between 1899 and 1933.

Naval operations of this period, especially in the Caribbean, tended to be much longer in duration than previously. Marines occupied Haiti from 1915 to 1934. They also were in the Dominican Republic from 1916 to 1924. And for 5 years, 1926-30, Marines actively supported the government of Nicaragua against the Sandinista revolution. General Smedley Butler, a double Medal of Honor recipient, served in China, Honduras, Panama, Nicaragua, Mexico, and Haiti. Brigadier General Lewis "Chesty" Puller was in Haiti from 1919 to 1924 and twice in Nicaragua.[22]

Like the Army, the Navy moved into humanitarian and rescue work. In 1904 the Navy evacuated Americans endangered by the Russo-Japanese War from Korea, a very early noncombatant evacuation. Sailors rescued a kidnapped American from Morocco in 1904, fought fires and helped victims of the San Francisco earthquake of 1906, and assisted Greek nationals forced out of Asia Minor by Turkey in 1921-1922. The aircraft carrier USS *Lexington* even generated almost 4.3 million kilowatt-hours of electricity for Tacoma, Washington, during a month-long emergency in 1930.[23]

Also like the Army, the Navy and the Marines moved into nation-building. Going beyond building infrastructure, such as the Army did in the West,[24] this involved creation and nurture of sound public institutions, which became important during the occupations of Haiti and the Dominican Republic. There the Navy and the Marines managed government offices and sought to create police forces that were free of corruption. Involvement in this type of nation-building peaked in post-World War II Japan and Germany, where efforts aimed at reform of entire governing structures and underlying attitudes. They constituted state-building in the fullest sense—concerted externally-led efforts to build stable democratic governments. This side

of gendarme operations did not involve deployment for combat, even against irregular opponents. Instead, this use took advantage of other key military attributes—logistical sophistication, responsiveness to direction, and a commitment to serving the nation.

As the Cold War came to dominate international relations, the armed forces entered a 50-year period in which a large, heavily armed force became a fixture of American foreign and defense policy. The Cold War, with its singleness of purpose, provided a prism through which all operations were viewed and dominated the experiences and perceptions of two generations of professional officers. Although the U.S. military traditionally had carried out all of the kinds of operations discussed here, including preparing for and fighting major wars, World War II and the Cold War brought this latter responsibility to extraordinary prominence and emphasized it over all others. The military came to define itself, "almost exclusively, as either deterring wars or fighting and winning them." Civil-military operations and the elements of our forces that engaged in them came to be seen as less important than combat elements, and this two-tiered view hardened into what Richard Shultz called "an enduring aspect of U.S. military culture."[25] As a result, the classic gendarme functions—stability operations, law enforcement, disaster relief, and infrastructure development, for which the Army was initially established and in which the Navy and Marines often played major parts—all were ignored or relegated to secondary status.

In carrying out their historically wide array of missions, U.S. forces operated in the tradition established nearly 2,000 years earlier by the Army of imperial Rome. On the frontiers of the empire, in Britain, along the Rhine and the Danube, then through the Levant and across North Africa, the Roman army conducted gendarme missions—keeping barbarians out; battling outlaws within; mapping; building forts, roads, bridges, and aqueducts; supervising laborers in mines and quarries; and digging canals and dams. Like

soldiers everywhere and always, the legionnaires hated such work.[26] Nevertheless, they carried out their orders, and in times of peak construction, thousands became masons, brickmakers, and the like, while hundreds of sailors poled barges and steered lighters. Overall, they became "the *gendarmerie* of the empire's edges and keepers of its gates," policing the frontier, managing checkpoints and crossings, and responding to trouble."[27] Like our Army on the frontier, which Michael Tate characterized as "the 'right arm' of the federal government in its 19th-century expansionist policies," the Roman army was "the dominant institutional factor in the development of the frontier."[28] In either case, an army devoted only to fighting foreign wars could never have had such a dramatic impact on overall development.

In Europe, the tradition of armed forces carrying out multiple gendarme functions changed at the beginning of the 19th century. During the Napoleonic era, the national police or *gendarmerie* was created to carry out functions other than waging war against foreign enemies.[29] Most European nations followed the French model, and the new organizations sometimes actually contained more professional military forces than the regular armies they supplemented. As Clive Emsley wrote, "the gendarmes were professional soldiers/policemen at a time when the armies of continental Europe were increasingly shifting from a professional mercenary to a conscript base."[30]

In some ways the gendarme forces that emerged from the Napoleonic period conducted the same kinds of operations carried out by American regulars. They patrolled remote areas, chased bandits, and responded to floods, earthquakes, and train wrecks. They also spied on political radicals, collected taxes, and enforced conscription. In Europe they helped consolidate central state power, while in the United States, soldiers enforcing the law were transitional figures until territories became states with their own legal systems. As if to illustrate the intimate connection with the regular armed forces, in France and

Bavaria individual officers and noncommissioned officers frequently moved from one organization to the other.[31]

Overall, gendarme functions tended to be various and complicated and to lack clear, immediate results. Campaigns against bandits or Indians could seem endless and sometimes very nearly were. They lacked the focus of a big conflict against a single enemy with a clear desired result. Natural disasters and other catastrophes were unpredictable and disrupted routines. Operations tended to alternate between wars and gendarme tasks, but inevitably what we now call "operations other than war" occupied the armed forces for longer periods of time.[32]

Plainly there is a gap between the reality of who American soldiers have been, on one hand, and who they think they are and what they think they should legitimately do, on the other.[33] Perhaps this is due to poor performance in unconventional situations, notably Vietnam and Somalia. On the other hand, it may be because the Army did so well in the central conventional arena, the face-off against the Union of Soviet Socialist Republics. Maybe the massive financial stake in procurement programs that support preparation for major conventional warfare accounts for the focus on such a mission. Intellectual investments in doctrine that concentrates on large conventional conflict and justifies large conventional forces may also turn attention in that direction. Or maybe soldiers are ignorant of their operational past, particularly the 150 years before World War II and the Cold War. Whatever the reasons, the result is a failure to appreciate the long-standing legitimacy of gendarme or constabulary operations, to understand their importance and their demands on resources, and to devote enough thought to their proper execution. As Eliot Cohen observed,

> International police work is the wayward child that the Pentagon cannot decide whether to embrace (because it is the only job immediately available and because it justifies the current force structure) or reject (because it conflicts with Cold

> War concepts of what the military exists to do). Posturing by both parties has made the problem worse, as Republicans insist that they would walk away from all peacekeeping or peace-enforcement missions, whereas Democrats are too eager to accept such involvements without conceding the long-term problems they pose for the defense establishment.[34]

If operations in the 1990s share so many attributes with earlier operations, what sets recent work apart? I would suggest three major differences. One is the complexity of modern operations short of war, which tend to involve other nations' forces as well as international organizations, many U.S. government agencies, contractors, and private charities. Second, they are more immediately visible because of the electronic media. Finally, there are all those names. Their large number—at least 375 from the end of 1989 to the beginning of 2001—obscures continuities and creates an impression of a diffuse, even hyperactive condition. Forty or so names have been applied to one decade-long effort to bring peace and order to the Balkans and another 40 or so to the 10-year effort to influence the behavior of the Iraqi government. Clarity would surely be served by going beyond the many names of phases and aspects and adjuncts and calling these operations what they are.[35] The war in Vietnam annually spawned about 20 English-language names for operations, but the overall awareness of the existence of a single conflict was never lost in the sea of names. It was always the Vietnam War. The point has still not been reached where we view the decade-long conflicts in Southwest Asia and the Balkans as single long-term campaigns or view clearly the other operational clusters of the 1990s.

The bottom line is two-fold. Were the 1990s different from the Cold War and other earlier periods? You bet. Were the 1990s outside the framework of the nation's military experience and tradition? Not at all.

CHAPTER 2 - ENDNOTES

1. David A. Armstrong, John M. Gates, Perry D. Jamieson, Hans S. Pawlisch, Stephen L. Rearden, Irene L. Schubert, Michael L. Tate, and Gregory G. Wilmoth, all read and criticized various versions of this paper and offered helpful suggestions. They should be held blameless for the contents and interpretations herein.

2. "Stability operations are typically characterized by intra state conflict between two or more factions divided over issues such as ethnicity, nationality, and religion. A stability operation is an umbrella term encompassing peace building, peacekeeping, peace making, and peace enforcement." Catherine Abbott, "Utilization of New Zealand Defence Force Capabilities on International Stability and Military Operations 1946-1998," Unpublished manuscript, p. 4.

3. At the end of January 2001, the "Military Operations Database," designed by this historian to track operations since December 1989, listed 375 operational names. Some were used only for planning purposes and others were cross-references to other names. Nevertheless, the number of names is staggeringly large.

4. Remarks of George W. Bush, transcript of presidential debate of October 11, 2000, *New York Times,* October 12, 2000, pp. A20-21; Dr. James A. Schear, "The Interagency Planning Process," Interagency Coordination and Planning Seminar, National Foreign Affairs Training Center, October 11, 2000.

5. Andrew J. Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine, 1860-1941*, Washington, DC: U.S. Army Center of Military History, 1998, p. 4.

6. Edward M. Coffman, "The Duality of the American Military Tradition," *Journal of Military History*, Vol. 64, No. 4, October 2000, pp. 971-972.

7. Robert M. Utley, "The Contribution of the Frontier to the American Military Tradition," in *The Harmon Memorial Lectures in Military History, 1959-1987*, Harry R. Borowski, ed., Washington, DC: Office of Air Force History, 1988, p. 533.

8. John B. Wilson, *Campaign Streamers of the United States Army*, Washington, DC: The Institute of Land Warfare, 1995, p. 16.

9. Birtle, p. 7; Utley, p. 527. For a detailed discussion of the missions summarized by Utley, see Michael L. Tate, *The Frontier Army and the*

Settlement of the West, Norman, OK: University of Oklahoma Press, 1999.

10. Jack Sweetman, *American Naval History: An Illustrated Chronology of the U.S. Navy and Marine Corps, 1775-Present*, Annapolis: Naval Institute Press, 1989, pp. 91-102; Ellen C. Collier, *Instances of Use of United States Armed Forces Abroad, 1798-1989*, Washington, DC: Congressional Research Service report No. 89-651 F, 1989, pp. 6-8.

11. See Sweetman for the Navy's operational history in this period.

12. Sweetman, pp. 39-49, 61; Collier, p. 4. An 1820 American law defined the slave trade as piracy.

13. Birtle, p. 4.

14. Henry H. Shelton, "Peace Operations: The Forces Required," *National Security Studies Quarterly*, Vol. 6, Summer 2000, p. 105.

15. John M. Gates, "Indians and Insurrectos," p. 4, in Gates, *The U.S. Army in Irregular Warfare*, *http://www.wooster.edu/history/jgates/book-ch2.html*, January 2001.

16. Utley, p. 530.

17. Quoted in Perry D. Jamieson, *Crossing the Deadly Ground: United States Army Tactics, 1865-1899*, Tuscaloosa: University of Alabama Press, 1994, pp. 120-121.

18. Richard H. Shultz, Jr., *In the Aftermath of War: US Support for Reconstruction and Nation-Building in Panama Following Just Cause*, Maxwell Air Force Base, AL: Air University Press, 1993, p. 19.

19. Michael L. Tate, *The Frontier Army and the Settlement of the West*, Norman, OK: University of Oklahoma Press, 1999. p. 215.

20. *Ibid*., pp. 108-110.

21. Utley, p. 530.

22. Sweetman, pp. 116-154; Collier, pp. 9-14; John Whiteclay Clay Chamber II, ed., *The Oxford Companion to American Military History*, New York: Oxford University Press, 1999, pp. 98, 580.

23. Sweetman, pp. 119, 120, 127, 146, 147, 156; Norman Polmar, *Aircraft Carriers: A History of Carrier Aviation and Its Influence on World Events*, Garden City, NY: Doubleday, 1969, p. 52.

24. For an overview of early projects of this type, see Frank N. Schubert, ed., *The Nation Builders: A Sesquicentennial History of the Corps of Topographical Engineers, 1838-1863*, Fort Belvoir, Virginia: Office of History, U.S. Army Corps of Engineers, 1988.

25. Shultz, p. 19.

26. Roy W. Davies, *Service in the Roman Army*, David Breeze and Valerie A. Maxfield, eds., New York: Columbia University Press, 1989, p. 34. On the Roman army's role in protecting and nurturing society on various frontiers, also see the following: Stephen K. Drummond, "The Roman Army as a Frontier Institution in the First and Second Centuries A.D.," unpublished doctoral dissertation, University of Kansas, 1981; Yann Le Bohec, *The Imperial Roman Army*, Raphael Bate, trans., London: Routledge, 1994; Derek Williams, *Romans and Barbarians: Four Views from the Empire's Edge, 1st Century AD*, New York: St. Martin's Press, 1998; Derek Williams, *The Reach of Rome: A History of the Roman Imperial Frontier 1st-5th Centuries AD*, New York: St. Martin's Press, 1996.

27. Williams, p. 38.

28. Tate, p. x; Stephen K. Drummond, "The Roman Army as a Frontier Institution in the First and Second Centuries A.D.," unpublished doctoral dissertation, University of Kansas, 1981, p. 157.

29. Outside of metropolitan France, even the French recombined these functions in one portion of their armed force, the French Foreign Legion, though with a wary sensitivity to "the outlaw image of the Legion, its racism, anti-Semitism and anti-intellectualism, its aggressive, hard-drinking and brothel-crawling culture," so that even when they were following their civilizing mission of building roads and other structures in some colonial outback, their masters knew that "any contact between the Legion and the local population was liable to result in a public relations disaster." Douglas Porch, *The French Foreign Legion: A Complete History of the Legendary Fighting Force*, New York: Harper Collins Publishers 1991, pp. 621, 624.

30. Clive Emsley, *Gendarmes and the State in Nineteenth Century Europe*, New York: Oxford University Press, 1999, pp. 7-8.

31. *Ibid*., pp. 154-155, 172, 204-205.

32. The names of two of the chapters in Birtle reflect the importance of this type of operation. Chapter 3, "The Constabulary Years, 1865-1898," covered operations during Reconstruction in the South and against Indians in the West. Chapter 5, "The Imperial Constabulary Years, 1900-1913," covered missions in China, Cuba, and the Philippines.

33. Utley, p. 528.

34. Eliot A. Cohen, "Defending America in the Twenty-first Century," *Foreign Affairs*, Vol. 79, November-December 2000, p. 46.

35. For an example of an official document that does not depict the way in which operations of the 1990s cluster into campaigns, see Office of the Secretary of Defense, *Report to Congress on U.S. Military Involvement in Major Smaller-Scale Contingencies Since the Persian Gulf War*, March 1999. Operations focused on Iraq are listed under "Crisis Response," "Limited Strike," "No-Fly Zone Enforcement," and "Humanitarian Operations," but never together as parts of a single campaign. Similarly, operations in the Balkans appear under "Limited Strike," "No-Fly Zone Enforcement," "Peace Operations," and "Humanitarian Assistance Operations." There is never an indication of an awareness that these operations fit together somehow.

CHAPTER 3

ARMY TRANSFORMATION: A TALE OF TWO DOCTRINES

David Jablonsky

> And it ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.
>
> Niccolo Machiavelli[1]

Not since General Hans von Seeckt's efforts with the German Reichswehr in the early 1920s, has a military organization so self-consciously set about transforming itself as the U.S. Army today. It is part of an overall process that has been met with enthusiastic endorsements ranging from the Secretary of Defense and the Chairman of the Joint Chiefs of Staff to congressionally-mandated blue ribbon panels. Still, specifics concerning the process have been hard to come by with one defense analyst noting the similarity of "transformation" as a military concept to the Christian idea of transubstantiation: "no one is exactly sure what it means, but most believers have an opinion about it."[2] Generally, however, the concept is linked with the idea of a revolution in military affairs (RMA). The interest in this revolution in the early 1990s led by the end of the decade to a growing acceptance of the need for military transformation if the RMA were to be achieved. Thus, the Quadrennial Defense Review (QDR) 2001 Working Group defined military transformation as "the set of activities by which DoD [Department of Defense] attempts to harness the revolution in military affairs to make fundamental changes

in technology, operational concepts and doctrine, and organizational structure."[3] The process, then, combines the acquisition of new military systems with appropriate divestiture and modifications dealing with doctrine and organization—all focused on maximizing the capabilities of future armed forces.

To "jump start" this process, Chief of Staff of the Army General Eric K. Shinseki began in the fall of 1999 to invest in current "off-the-shelf" equipment to stimulate the development of doctrine and organizational design even as the Army began a search for the new technologies that would deliver the material for a future force. That force would be strategically responsive and dominant across a full spectrum of operations ranging from peacetime military engagement to smaller-scale contingencies to major theater war. The swiftness of the process, General Shinseki acknowledged, would be "unnerving to some."[4] Nevertheless, there was an urgency to the process for the Army, concerned with becoming more relevant in a rapidly changing geostrategic environment in which strategic speed and lethality could no longer successfully exist as separate variables. "All our combat power is useless if we cannot get it to the theater in time or maneuver it tactically," Major General James Dubik, the head of the experimental force at Fort Lewis, pointed out. "Right now our heavy forces have limited strategic deployability and our light forces have limited tactical utility. Transformation will take care of that disconnect."[5]

How well Army transformation is able to deal with that disconnect, however, will depend a great deal on future U.S. policy concerning the use of military force. At one extreme is the so-called Powell Doctrine, a relatively restrictive approach to the subject. At the other extreme is what has popularly come to be called the Clinton Doctrine, a more liberal prescription for the use of force. The purpose of this chapter is to demonstrate how those two doctrines will influence the transformation of the U.S. Army as it struggles to move forward toward a genuine revolution in

military affairs, and how that transformation process can, in turn, mitigate the worst excesses of both doctrines. In the end, it is the ability of the U.S. Army to use the new technology for the use of military force that will determine the success of the RMA. In this regard, it is well to remember why Thomas Huxley remained unimpressed at the end of the 19th century by all the knowledge, machinery, and power that had extended human competence over the physical environment. "The great issue," he pointed out, "about which hangs a true sublimity and the terror of overhanging fate is, what are you going to do with all these things?"[6]

Army Transformation.

> Military organizations are societies built around and upon the prevailing weapons systems. Intuitively and quite correctly the military man feels that a change in weapon portends a change in the arrangements of his society.
>
> Elting Morison[7]

To assert that the seeds of Army transformation were planted in the unused AH-64 Apache helicopters on the Albanian-Kosovo border in 1999 is to do a disservice to the decades-long efforts by the U.S. Army to solve the problem of how to field a force light enough to be projected quickly on a global basis and lethal enough to dominate upon arrival. In the 1980s, the Army attempted to deal with this problem by transforming itself with the concept of the High-Technology Light Division (HTLD). That effort succumbed to bureaucratic infighting by 1988, leaving a window of vulnerability clearly demonstrated two years later when the U.S. line in the Saudi Arabian sand was held for several weeks only by the lightly armed and relatively immobile forces of the 82nd Airborne Division and a Marine Expeditionary Force.[8] From the Gulf War to 1997, the pace of U.S. military operations increased by at least 300 percent, even as the armed forces were buffeted by cuts in structure, weapons programs and personnel strength.

During that period, the Army conducted a series of futures efforts beginning with the 1992 series of simulations and exercises known as the Louisiana Maneuvers. That program gave way to the Force XXI process, a series of experiments in war fighting designed to generate and test new ideas. Next came the Army After Next project, the use of studies, conferences, and war games to postulate those elements of the RMA on which the Army should focus in future geostrategic environments. These programs involved separate but complementary processes coordinated through distinct light and heavy modernization plans along similar, not common, system and organizational designs. The result was a continued bifurcation of the force between heavy and light units.[9]

From this extended perspective, the Army's problems with Task Force Hawk simply highlighted the need to accelerate experimental efforts to solve a long-simmering problem. Landpower enthusiasts might point out that much analysis of the Serbian campaign failed to take into account the actions of the Kosovo Liberation Army that complemented the NATO attack.[10] But there was no disguising the fact that the 11-week campaign had been decided by the 730 Air Force, Navy, and Marine aircraft that had flown more than 36,000 sorties in aircraft that ranged from Cold War F-16s to the newest B-2s. In the wake of that campaign, there was considerable conjecture about the Army's strategic relevancy in newspaper and magazine articles.[11] The Deputy Secretary of Defense was even more direct. "If the Army holds onto nostalgic versions of its grand past," he warned in August 1999, "it is going to atrophy and die."[12] It was a message concerning deployability, lethality, and sustainability that was well understood in the Army. "We are committed to remain relevant," General Dubik pointed out, "able to respond quickly, and provide the appropriate forces for . . . contingencies."[13]

The key to Army relevancy is an Army transformation process that rests on four foundations: the conduct of future war, the future operating environment, the increasing

significance of full spectrum operations, and the diminished utility of the current force. Together, these elements compel the current Army process toward a combination of evolutionary and revolutionary change. It is, in short, a self-stylized "balanced" approach designed to fully capitalize on leap-ahead technology while retaining current warfighting capabilities.[14] But the Army process also recognizes that emerging technologies cannot alone produce an RMA—that they serve as enablers for much more far-reaching changes in doctrine, concepts, and organization, which together cause fundamentally new ways of conducting military operations. At some critical point, the cumulative effects of technical advances and military innovation in all these areas invalidate former conceptual structures and cause a basic alteration in accepted definitions and measurements of military effectiveness. Such experimentation, however, is not easy; and in fact the Defense Science Board Task Force has called it "an unnatural act" for any large established organization.[15] Moreover, as General Dubik has cautioned,

> There is no guarantee to any of this. There is no playbook. There is no answer book. . . .
>
> We must . . . make sure we get it close to right. We know we will not get it precisely right. But our job is not to get it so wrong that we hamstring the next generation of leaders. We have to get it right enough, so that in 2015, when the nation asks the Army to do something, it is flexible enough to accomplish any potential mission.[16]

The Interim Force is the centerpiece in the balanced process of "getting it right." The force consists of medium weight Interim Brigade Combat Teams (IBCTs) designed "to meet a near-term strategic requirement that now is absent, as well as to prepare the Army for the long-term. . ."[17] To achieve these goals, the IBCTs will operate within the current division structures and provide a complementary capability to the current light and heavy units that comprise the Legacy Force. At the same time, the IBCTs will act as a

bridging force until science and technology allow the realization of the Objective Force, the ultimate Army product of the RMA. The key to the bridging process is the development of the Future Combat System (FCS), which is to combine the capabilities of the current howitzers, main battle tanks and infantry fighting vehicles while weighing in at a weight not to exceed 20 tons—a figure in dramatic contrast, for example, to the 70 tons of the M1A1 Abrams Tank. Once the FCS emerges, it will be adopted by the Legacy and Interim Forces which will then merge into the Objective Force.[18]

The Interim Force concept is a revolutionary bridge to the future Objective Force. To begin with, the IBCT is not a theoretical construct, but a test-bed force with goals of deploying a brigade to a forward base within 4 days, a division within 5 days, and five divisions within 30 days. And yet the units are being created without waiting for the development of new technology. Instead, the Army is focused on evaluating and refining the operations and organizational concept for these forces derived from the future environment envisaged as the type in which the units would operate, from the kind of characteristics desired in the force, and from the capabilities that would then be required. This type of parallel effort is designed to produce a complete RMA when the emerging technology comes on line, unlike those incomplete revolutions in the past when doctrine and organization lagged the new technology as they did with the so-called "dead hand" of Napoleon in the American Civil War and with the French pursuit of *offensive a outrance* at the beginning of World War I. "As we develop the IBCTs at Fort Lewis, train them and get the doctrine right," General Dubik notes in this regard, "we will be producing the doctrine and training that we need for the objective force."[19] As technology produces the revolutionary breakthroughs necessary to complement this doctrine, distinctions between the bifurcated force will blur, with the Objective Force taking on the lethality associated with heavy units and the agility that is the mark of light units.

At the other end of the Army's balanced linkage, the relationship of the Interim and Legacy forces is more conservative—founded on a determination by the Army "not to permit" transformation to compromise near-term warfighting capabilities.[20] From this perspective, the IBCT is designed to bolster the current Legacy Force by enhancing the ability of the regional CINCs and Joint Task Force commanders to respond. For the legacy light division, the interim unit will become the most mobile, lethal and survivable element, extending the division's tactical mobility while increasing the organic firepower in support of dismounted operations, and thus is likely to be employed in the main divisional effort. On the other hand, the IBCT will probably be the first brigade to deploy as part of a heavy division in order to consolidate and extend the security of air and sea ports of debarkation, thus facilitating the reception, staging and onward integration of the remainder of the division. The new formations will also provide a dramatic improvement in national and theater conventional deterrence by presenting the National Command Authorities (NCA) with the capability to position a credible and flexible combat force on the ground anywhere in the world within 96 hours. At the same time, the accelerated development of the initial interim brigades will provide impetus to the transformation process by allowing the training and development of soldiers and leaders in the doctrine and organization of these new formations without compromising the Army's basic *raison d' etre* of winning wars.[21]

In all this, a major issue for the Legacy Force is divestiture of old technology, organization and doctrine—a key element if the Army's revolution in military affairs is ultimately to be complete. The Army has already restructured five major programs and cancelled seven others in order to free $16 billion for the transformation effort. How well the right systems and doctrine are available for that process depends on the Army's ability to maintain a viable Legacy Force. But 75 percent of that force

already exceeds its service half-life. Moreover, as the Legacy Force comes to the end of that cycle, there will be increasing costs for operation and maintenance—producing further pressure for recapitalization, the replacement, as opposed to modernization, of aging systems.[22] One solution is to identify and prioritize modernization and/or recapitalization for those legacy systems that have applicability for the Objective Force. Some systems, however, need to be continued even if they don't fall in this category since their elimination would pose too great a risk to the legacy guarantee of near-term warfighting capabilities. The Heavy Equipment Transporter System (HET), for example, is required to replace an aging fleet of trucks that will carry the tanks, Bradleys, and howitzers until transformation is effected.

Ultimately, there is no pat solution to the tension between divestiture concerned with a Legacy Force and the need to hedge against an uncertain future. It is a tension that is particularly sharp for the military profession, which has little room for any illusions about the stakes in national security affairs. "If you have lost a battle," G. K. Chesterton once noted, "you cannot believe that you have won it."[23] There is no guarantee, for example, that the technology for the Objective Force will materialize, potentially leaving a "Worst-of-Both-Worlds" force that could still consume substantial amounts of strategic lift, while lacking combat punch and sustainability. Nor is it ever a certainty that some new technological variant will be correctly understood. Thus, Field Marshal Sir Douglas Haig—a year into World War I—could inform the War Office that "the machine-gun is a much overrated weapon, two per battalion is more than sufficient."[24] There is also no assurance that emerging doctrine and concepts will survive a future test as was demonstrated by the Maginot Line, an efficient and effective use of military resources in terms of the static trench warfare of World War I, but useless against the mobile German Army doctrine of 1940. Most importantly, there is the overriding need to retain a near-term strategic

hedge of readiness for major theater war. Thus, it is not surprising that the Army has adopted a conservative resourcing strategy during transformation designed to keep:

> a balance of old and new systems to maintain readiness for today while preparing for the future. This strategy will selectively retain or extend the life of legacy systems, synchronize divestiture with acquisition, and bring new systems as rapidly as possible in accordance with new operational concepts.[25]

The tension between the legacy and objective forces was reflected in a draft U.S. Government Accounting Office (USGAO) Report provided to the Army in January 2001 that identified risk in the transformation efforts. The development of the Objective Force, the report asserted, represented the Army's "foremost challenge" because of uncertainty as to whether the required technology would mature enough to enable the development of the Future Combat Systems as envisioned or in time to meet the transformation schedule. The Army, the report added, should consider achieving Objective Force capabilities in stages—a strategy that could provide worthwhile increases in capability but might also require a continuation of legacy and interim forces "longer than anticipated." The Army response was that the report overly focused on equipment, ignoring the Army's "holistic" approach which also involved the considerable progress being made in organizational, doctrinal and institutional change. Focusing on acquisition alone, one source concluded, was like "looking through a coke bottle . . . at the stars."[26]

In any event, the Army leadership was bent on further expediting the transformation effort. On March 1, 2001, the Chief of Staff announced that the Army would lose relevancy if an Objective Force capability was not fielded by 2010. There would be no waiting for the development of better systems if it meant slowing down the transformation process. "This is about speed," General Shinseki added.[27] As

a consequence, the Army would increase funding of the integrated Future Combat System for FYs 03-08. In April 2003, there would be a readiness review of the FCS in order to select the best technologies and concepts for the next phase of the process. "We will make the tough calls, we will shift resources to the most promising technical solutions."[28] The second milestone would be the development and demonstration of a prototype FCS model beginning in FY 06. "Our intent," the Chief concluded, "is to accelerate the transition to research and development by collapsing traditional lines."[29]

This was hardly good news for those within the Army who already perceived transformation as challenging the most cherished service assumptions. Not surprisingly, some heavy armor and artillery advocates had indicated resistance as had some in the aviation community concerned about the lack of reference to Army aviation attack units.[30] And the fact that the Interim Force would rely on fire support from Air Force, Navy and coalition assets was perceived by some as abandonment of the Army's organic role in deep attack.[31] Outside the Army, one official of the Air Force Association summarized that service's position in the post-Kosovo conflict era by asserting that "transformation cannot take place without a shift in service roles from the current emphasis on surface warfare to aero-space warfare."[32] And the Commandant of the Marine Corps warned against attempts by each service to claim that it was the "expeditionary force" of choice for the nation. "There is no way," he pointed out, "that the entire armed forces of the United States can fit into the tip of the spear."[33]

The Powell and Clinton Doctrines.

> What's the point of having this superb military that you're always talking about if we can't use it?
>
> Madeleine Albright to Colin Powell[34]

Ambassador Madeleine Albright's exasperated question to General Colin Powell reflected a difference in outlook that was set in train in October 1984 when Secretary of State George Shultz delivered a speech warning against "self-doubt" and "paralysis" in the conduct of foreign policy. There must be more flexibility in the use of American military power, Shultz concluded a year after 241 American deaths in the bombing of the Marine barracks in Beirut, emphasizing that the United States should not become "the Hamlet of nations, worrying endlessly over whether and how to respond. . . ."[35] The next month, Secretary of Defense Caspar Weinberger replied with six criteria to determine the conditions under which the use of military force overseas was warranted: Involvement of vital national interests; clear intention of winning; clearly defined political and military objectives; a constant reassessment of objectives and forces; a reasonable assurance of public and congressional support prior to commitment; and the use of U.S. forces as a last resort.[36] For Shultz, these criteria set such high hurdles for the use of force that they served as a "counsel of inaction bordering on paralysis," "the Vietnam syndrome in spades carried to an absurd level and a complete abdication of the duties of [world] leadership."[37] Nevertheless, the Weinberger Doctrine was applied in the Gulf War, with vital interests at stake, overwhelming force applied quickly, and all other options such as economic sanctions tried first. The final proof that the war affirmed the Vietnam syndrome rather than "kicking" it occurred when Powell pressed for formal Congressional authorization to use force in order not to leave U.S. troops "dangling out there" without domestic support.[38]

By the time of the Gulf War, however, there had already begun to emerge a more complicated geostrategic landscape of failed states, civil wars and ethnic conflicts. Difficult decisions for the use of military force in this more complex environment seemed increasingly further removed from a doctrine that was virtually immune to ambiguity. As a consequence, as he neared the end of his term in office in 1992, President George Bush discounted the need for "rigid criteria" concerning the use of military force that "would give would-be troublemakers a blueprint for determining their own actions." In this new context, the relative intensity of an interest would not be a guide, and force, the President concluded, could be "a useful backdrop to diplomacy, a complement to it, or, if need be, a temporary alternative."[39] This move away from "last resort" answered an important criticism of the Weinberger Doctrine, since threatened or actual use of force had always been a basic ingredient of deterrence and coercive diplomacy. Moreover, as the rise of Nazi Germany repeatedly demonstrated, there could also be a need for early and politically decisive use of force against an aggressor. "[T]he capability and will to use force as a first resort," Richard Nixon noted a year after the appearance of the Weinberger Doctrine, ". . . reduces the possibility of having to use force as a last resort when the risk of casualties would be far greater."[40]

In a similar manner, President Bush's rejection of the vital interest criterion reflected a growing lack of consensus on what constituted such a degree of intensity. To begin with, many of Bush's predecessors shared the penchant of indiscriminately declaring interests to be vital, whether it was Dwight Eisenhower over Quemoy and Matsu, Lyndon Johnson over Vietnam, or Ronald Reagan over Lebanon. Moreover, it was argued, even when it was impossible to distinguish between intensities of interests, great powers might still use military force on behalf of nonvital interests ranging from credibility to maintaining order. Most importantly, some critics also pointed to a false dichotomy between interest-based and value-based military

intervention given America's long history of combining these variables. President Woodrow Wilson intervened in 1917, for example, with the geopolitical goal of restoring the European balance of power couched as a strategic crusade for democracy. And Harry Truman's Cold War doctrine of 1947 was a geopolitical call to contain Communism in a world, he pointed out, half-slave, half-free. In all this, there is a tendency, as Senator John McCain has noted, "to underestimate the importance of American values . . . for orienting our relations with the rest of the world."[41] And even Henry Kissinger, the ultimate modern proponent of *Realpolitik*, has conceded that the

> alleged dichotomy of pragmatism and morality seems to me a misleading choice. Pragmatism without a moral element leads to random activism, brutality, or stagnation. We must always be pragmatic about our national security. We cannot abandon national security in pursuit of virtue. But beyond this bedrock of all policy, our challenge is to advance our principles in a way that does not isolate us in the long run.[42]

Many of these considerations were reflected in General Powell's evolving thoughts on the military use of force during his tenure as Chairman of the Joint Chiefs of Staff. Instead of "last resort," there was the limited use of the military for political reasons: "When force is used deftly—in smooth coordination with diplomatic and economic policy—bullets may never have to fly." This, in turn, meant a wider range of military missions across a spectrum of operations that could be far removed from a rigid focus on vital interests: "I believe peacekeeping and humanitarian operations are a given."[43] And in his final public address before retiring as Chairman, Powell acknowledged that clear objectives were not always possible in the use of military force, that situations often were ambiguous and "murky."[44] By that time Powell could warn that there was "no fixed set of rules for the use of military force" and that to establish such criteria was dangerous, first because it destroyed the ambiguity of U.S. intentions.

> Second, having a fixed set of rules for how you will go to war is like saying you are always going to use the elevator in the event of fire in your apartment building. Surely enough, when the fire comes the elevator will be engulfed in flames or, worse, it will look good when you get in it only to fill with smoke and flames and crash a few minutes later. But do you stay in your apartment and burn to death because your plan calls for using the elevator to escape and the elevator is untenable? No, you run to the stairs, an outside fire escape or a window. In short, your plans to escape should be governed by the circumstances of the fire when it starts.[45]

All this notwithstanding, Powell still found that Weinberger's criteria were a "practical guide" when it came to the relevant questions concerned with matching force and objectives. Most importantly, the guideline of national interest intensity was still critical for him in terms of prioritization and sustainment in the use of any military force—a Clausewitzian linkage that he always appreciated. "Since war is not an act of senseless passion but is controlled by its political object," the Prussian philosopher had long ago warned, "the value of this object must determine the sacrifices to be made for it in *magnitude* and also in *duration*."[46] Thus, as the former Yugoslavia began to come apart in 1991, Powell urged a caution based on a variant of the Weinberger Doctrine that, while adjusting the last resort criterion and acknowledging the role of early force intervention, still called for a policy of selective global engagement primarily based on U.S. national interests. The Chairman's rationale also included such Weinberger derivatives as the use of overwhelming force for clear political and military objectives and a need for constant reassessment of the relationship of force utilization to these objectives as well as to the American people and their representatives. To this was added a clear distrust of technology as a panacea for the military in the use of force and, despite a nod to the utility of pre-conflict force utilization, of the use of the military for the purpose of signaling. Soon, what quickly came to be known as the Powell Doctrine was being interpreted by its critics as a

reluctance to intervene anywhere with military force, unless the intervention was so massively disproportionate as to become virtually free of risk. But Powell was having none of it. "Decisive means and results are always to be preferred," he wrote at the time, "even if they are not always possible."

> We should always be skeptical when so-called experts suggest that all a particular crisis calls for is a little surgical bombing or a limited attack. When the "surgery" is over and the desired result is not obtained, a new set of experts then comes forward with talk of just a little escalation. . . . History has not been kind to this approach. . . .[47]

At the beginning of the William Clinton Administration, Powell had considerable influence on the President with this type of thinking concerning the use of force. All this was reflected in a new National Security Strategy in 1995, which in a section entitled "Deciding When and How to Employ U.S. Forces," almost outdid The Weinberger cum Powell Doctrine.[48] But by that time, appearances were deceiving. In the last 2 years of the first Clinton administration, with General Powell out of office, the President increasingly resorted to the use of military force across a full spectrum of operations—to the extent that in the 1996 Presidential campaign, Senator Robert Dole noted that the administration had initiated more military deployments than any of its predecessors. Nevertheless, there was little protest from the Pentagon or the public since operations such as those in Haiti and Bosnia were virtually free of casualties. Moreover, many military leaders realized that executing such operations could contribute to force relevancy and help justify a sizeable budget and force structure. And in fact the President added $100 billion to his own defense program between 1994 and early 1996. Finally, despite its Powell-like rhetoric, the administration simply substituted exit dates for clear goals or real strategy.[49]

The new doctrine emerged more clearly in the second Clinton administration. To begin with, the President

continued a low-risk, high-tech approach to the use of force across a full spectrum of operations, begun after the 1993 Somalia debacle, in order to avoid American casualties and keep collateral damage to an absolute minimum. By 1999, this was almost a doctrinal shibboleth. The "paramount lesson learned from Operation ALLIED FORCE," the Secretary of Defense and Chairman of the Joint Chiefs declared after the Serbian campaign, "is that the well-being of our people must remain our first priority."[50] Added to this approach was the use of military force to signal disapproval and dictate behavior. Operation DESERT FOX against Iraq in 1998, for example, was less a tribute to Erwin Rommel than Robert McNamara as the Clinton administration employed strictly controlled force to deliver precision-guided messages. "We are talking about using military force," Secretary of State Albright pointed out at the time, "but we are not talking about war."[51] That same year, the United States fired 79 sea-launched cruise missiles at suspected terrorist sources in Afghanistan and the Sudan. "Let our actions today send this message loud and clear," the President declared, "there will be no sanctuary for terrorists."[52] Finally, there was Operation ALLIED FORCE, a finely-calibrated "air only" war of incrementalism and gradualism, studded with pauses for negotiation and strategy—all reminiscent of the Vietnam conflict.[53]

Kosovo resulted in further *fin de siecle* twists to the emerging Clinton Doctrine. For the President, morals and values as much as geopolitics played a key role, with every cruise missile and bomb in that conflict aimed not only at destroying the Serbian national will, but also at demolishing the idea that leaders could commit criminal acts so long as they acted within their own country. For the first time, one administration official explained, Clinton was stating that "genocide is in and of itself a national interest where we should attack."[54] The President elaborated on this theme in an exuberant speech to NATO troops in Macedonia following the successful conclusion of the Kosovo campaign. In this brave new world, he

emphasized, national sovereignty would be subordinated to human rights. In terms of "ethnic or religious conflict" in the world, universality would be "an important principle" that he hoped would be applied in the future "whether within or beyond" the borders of a country. "Whether you live in Africa or Central Europe or any other place," Clinton concluded, "if somebody comes after civilians and tries to kill them en masse because of their race, their ethnic background, or their religion, and it is within our power to stop it, we will stop it."[55] Administration officials were quick to back away from the soaring, apparently open-ended rhetoric. "I don't think anybody ever articulated a doctrine which said that we ought to intervene whenever there's a humanitarian problem," the National Security Advisor pointed out. "That's not a doctrine, that's just a kind of prescription for America to be all over the world and ineffective."[56] And the Chairman of the Joint Chiefs cautioned that "the military makes a great hammer in America's foreign policy tool box, but not every problem we face is a nail."[57]

Nevertheless, in the wake of Kosovo, the President continued to give pride of place to values in the basic components of his emerging doctrine for the use of force. First, there was the increasingly pessimistic appraisal of the international security environment—"a viper's nest of perils," in Secretary Albright's description, ranging from terrorism and international crime to computer hackers and genocidal violence.[58] The second ingredient of the Clinton Doctrine was the assumption that, as the dominant world power with global economic interests in an increasingly interdependent environment, the United States had a vested interest in the maintenance of international stability, of world order.[59] The third component was the conviction that in order to achieve international stability, the United States must maintain sufficient forces to conduct simultaneous military action against multiple adversaries—a primary constabulary mission for American military power to ensure the system didn't break down, causing globalization to fail. Implicit in this linkage to world

order was the idea that the best way to maintain stability in areas that truly mattered to the United States was to diminish instability in other areas, however unimportant that instability might appear, before it could build in intensity and spread to areas of significant interest. It was, as Secretary Albright demonstrated, the harnessing of the "domino theory" to the concept of shaping. "Common sense tells us," she commented, "that it is sometimes better to deal with instability when it is still at arm's length than to wait until it is at our doorstep."[60] President Clinton was even more explicit in terms of the shaping function in a February 1999 speech that foreshadowed the bombing decision in Serbia.

> It's easy . . . to say that we really have no interests in who lives in this or that valley in Bosnia, or who owns a strip of brush land in the Horn of Africa, or some piece of parched earth by the Jordan River. But the time measure of our interests lies in not how small or distant these places are, or in whether we have trouble pronouncing their names. The question we must ask is, what are the consequences to our security of letting conflicts fester and spread.[61]

In the end, the criteria that are popularly ascribed to both doctrines are only factors to be considered, not absolute requirements like those of Just War doctrine. Moreover, because the Powell Doctrine has moved somewhat from the strict constructionist Weinberger position, and because the Clinton Doctrine began its early evolution when Powell was Chairman of the JCS, there are many similarities. Both believe in using force in conjunction with the other elements of national power; both recognize that force may be used in a wide spectrum of situations to include those involving peace and humanitarian operations; and both believe in the use of quick, overwhelming and decisive force for clear military and political objectives. In terms of applying that decisive force, the Clinton approach is generally to rely on standoff high-tech weapons, while the Powell Doctrine includes a basic distrust of technology as a panacea in the use of force combined with a recognition that conflict resolution always

and conflict termination nearly always require the use of landpower.

The Powell Doctrine is often described as a strategy of reluctance focused on a narrowly defined concept of national security which, if taken too literally, can amount "to virtual isolationism again, via the great circle route."[62] But with its emphasis on national interests and a finite amount of resources, the Powell Doctrine ensures a selectivity in near- and mid-term shaping and responding activities in order to prepare for future regional and near peer threats. On the other hand, the Clinton Doctrine has been accused of a willingness to use military force only when the political cost of standing aloof exceeded the cost of a carefully staged and limited intervention. Moreover, there is the general charge of doctrinal inconsistency in an administration that never made clear why the United States pulled out of Somalia, why it elected to stay out of Rwanda, or why it stayed out of Bosnia, Kosovo, and East Timor for as long as it did and then elected to intervene in the way that it did.[63] But by emphasizing shaping and responding activities across a full spectrum of operations in the near- and mid-term, the Clinton Doctrine offers the potential of preparing for the future by using military force to resolve crises, prevent conflicts and instability, and deter aggression—all of which could lead to the outbreak of major wars. Ultimately, there will be some mix of the two doctrines in the new Bush administration, which will, in turn, determine the mix of the Shape-Respond-Prepare strategic variables. That combination will directly affect the Army transformation process and determine if the United States in the future can avoid both Munich-like appeasements and Vietnam-like quagmires.

Revolution or Evolution.

> Unlike other organizations, military forces in peacetime must innovate and prepare for a war 1) that will occur at some indeterminate point in the future, 2) against an opponent who may not yet be identified, 3) in political conditions which one

> cannot accurately predict, and 4) in an arena of brutality and violence which one cannot replicate.
>
> Williamson Murray[64]

At first blush, the Clinton Doctrine appears made to order for Army transformation. To begin with, there is the balanced Shape-Respond-Prepare approach to the full spectrum of operations, a rich source of experimentation for the Interim Force as it moves toward the versatile Objective Force. That very versatility can ensure that the Army remains the most relevant and effective force for shaping the international environment. Added to this are the transformation products of increased deployability, lethality, and sustainability which can provide the Army a rapid response capability across the full spectrum of operations as a warfighting force and a strategic deterrent. Prior to conflict, this force capability can also buy U.S. authorities critical time for analysis and assessment as well as impart a synergism to other diplomatic, economic, and political crisis resolution tools. The problem is that this balanced Shape-Respond-Prepare approach is a good defense strategy only if it is adequately resourced. If not, it can be disastrous, particularly in the absence of clearly articulated priorities on where to place emphasis and where to accept or manage risk. In that kind of environment, trying to square the means-end circle of full spectrum dominance has left the services in a position in their transformation efforts, as Andrew Krepenivich has described it, "of trying to create bricks without straw."[65] This has been particularly hard on the Army which, in its pursuit of post-Cold War relevancy, has been hoisted with its own petard of accepting the concept of full spectrum dominance—a dilemma nicely summarized by General Dubik:

> Crises arise and we cannot say "no" to the National Command Authority. If the President says, "Go to Kosovo," we do not say, "Gee, we are kind of busy." And when he says, "Remember, besides Bosnia you have to train for major theater war," we do

> not say "Hey, we could sure use a break." If things heat up in East or Southwest Asia, the call is not, "Are you ready?" It is simply "Go."[66]

The result of all this is an environment in which it is difficult to effect fundamental transformation. Certainly the current operational tempo (OPTEMPO) of the force is a far cry from the 1920s—a period often cited as a model for military innovation. "It is not about money," one DoD official commented in this regard. "They were as poor as church mice, but their best minds had time on their hands, figuring out where to go. A lot of talent was geared toward developing new doctrine. Today our personnel don't think about these kinds of issues."[67] For the Army, this lack of organizational slack is particularly significant. In a recent war game played in preparation for QDR 2001, for example, an interim division was used in the later years of the game period. The conclusion was that the Army is and will be the most highly used of the services across the entire spectrum of operations.[68]

A key ingredient of the Army's problem is the emphasis in the Clinton Doctrine on maintaining world order and stability—"policing democracy's empire" in a chaotic post-Cold War world while preparing for the larger and longer term regional and near-peer threats.[69] By doing both, as Harold Winton has illustrated with the interwar British experience, it makes it extremely difficult at the political and military leadership levels to transform an army.[70]

Although the British had established the Royal Tank Corps as early as 1923, the continuing demands on the Army as a constabulary force to maintain the empire slowly drained funds from new equipment and training, thus diminishing incentives for new doctrinal thinking. Added to this was a regimental system that further inhibited innovation with a requirement for a 1-to-1 ratio of home units to those policing the imperial domains. The result was the uninterrupted decline of the British armored forces until the beginning of World War II.[71]

At the political level, the resultant diminution of the army's capability to conduct high-tech major theater war on the continent led to the so-called Ten Year Rule, which assumed "that the British Empire will not be engaged in any war during the next 10 years, and that no Expeditionary Force is required to this purpose. . . ."[72] The automatic annual renewal through 1932 of this assumption left the British ripe for appeasement of the emerging peer threat in Nazi Germany and set the stage for the strategy of limited liability on the continent.[73] Under that strategy, the government's priorities for an army viewed primarily as a colonial police force were protection of the British Isles and the trade routes, garrisoning the empire, and, finally, cooperating to defend Britain's allies—but only after meeting the other commitments. "Our contributions by land," Neville Chamberlain announced to his colleagues upon assuming office in spring 1937, "should be on a limited scale."[74]

Not surprisingly, the Powell Doctrine pervades the philosophy for the use of force in the new administration. For the new National Security Adviser, U.S. national interests must be the primary basis for such use. "It takes courage to set priorities." As for the Clinton Doctrine: "If priorities and intent are not clear, they cannot be criticized."[75] President Bush was equally adamant, pointing out that he would avoid "missions without end" and not send troops "to stop ethnic cleansing and genocide" outside U.S. national interests. "Nor do I think we ought to try to be the peacekeepers all around the world," he concluded. "When America uses force in the world, the cause must be just, the goal must be clear, and the victory must be overwhelming."[76]

The adoption of this more selective global engagement was accompanied by a well-publicized campaign for DoD transformation with the goal of obtaining dramatic improvements of military effectiveness at reduced cost. To this end, the President announced that he had given Secretary of Defense Rumsfeld "a broad mandate to

challenge the status quo as we design a new architecture for the defense of America. . . . Our goal is to move beyond marginal improvements to harness new technologies that will support a new strategy."[77] Implicit in this type of accelerated approach to transformation is the existence of greater short-term risk for a long-term payoff which only intensifies the paradox of the investment-divestment tensions between the Legacy Force and Objective Force. On the one hand, there is the question of whether the new technology will mature quickly enough to meet the Army's ambitious transformation schedule. On the other, there is the approaching obsolescence of many of the Army's systems—one of the reasons for the acceleration to 2010 of the Federal Communication Service (FCS) fielding objective, which in turn brings the question full circle back to the speed of technology maturation.[78]

In all this, the Army's position remains that there is a need to maintain a substantive Legacy Force in order to hedge against such uncertainties. It is a position that is not helped by the well-publicized recapitalization effort for that force with the 155 mm Crusader howitzer, a weapons system so heavy, in a time of increased deployability emphasis, that an Air Force C-5 will not be able to carry both the gun and its supply vehicle. For some, this smacks of a "Colonel Blimp"-like reaction to change, typical of military inertia and epitomized by the British officer in the interwar years who insisted on maintaining the horse in the artillery and cavalry "because thereby you will keep up the high standard of intelligence in the man from his association with the horse."[79] From this perspective, as Eliot Cohen points out, only a "ruthless retirement" of obsolete hardware will demonstrate "that Washington is finally serious about the 'Revolution in Military Affairs.'"[80] But the services are also aware of the dangers in switching modernization funds. In 1994, for example, the Navy offered to drop below the authorized size of the fleet to free funds for developing future capabilities. Instead, the projected savings were used to reduce budget shortfalls—a lesson

that was not lost on service chiefs when QDR discussions began.[81]

Such pressures are to be expected in the absence of major threats, after years of deferred modernization and readiness problems, and given such administration priorities as national missile defense. In that environment, there is a natural temptation to focus on "revolutionary" concepts and technology at the expense of the Legacy Force. Certainly, there is always the danger that a legacy force can mitigate the transforming potential of new technology. The French cavalry in the interwar years, for instance, simply absorbed the new machines of war into the old doctrine. Rather than allowing the characteristics of the new technology to serve as a basis for creating new doctrine and organizations, the French leaders created missions that remained within the old framework. As a consequence, tanks became subordinate and supporting weapons to the infantry and the cavalry—"a strange hodgepodge of oats, history and oil. . . ."[82]

The Interim Force can do much to mitigate such developments by demonstrating that RMAs can come about not just by transforming all elements of the force, but by identifying and exploiting synergies between the old and the new. The German Army between the World Wars offers a striking example of this—using experimentation to determine what new systems and capabilities would be needed, what legacy systems and capabilities should be sustained, and what kind of mix of the two should be created. For example, legacy systems such as artillery were motorized to support the tanks. And great care was taken to include the right mix of new capabilities such as airborne, close air support and radio communication with such legacy capabilities as engineer and logistics in order to produce optimum capabilities for mechanized air-land operations. In this regard, even the considerable resistance by the German Army leaders to the Armor idea proved fortuitous. "All nonsense, my dear Guderian, all nonsense," von Rundstedt commented to the father of German armor at the

end of a tank field exercise in the late 1930s.[83] As a result, the German Army followed a conservative program that focused on traditional formations and the placement of armored force development within the structure of regular army doctrine and conventional military forces. By staying within this combined arms structure, traditional German doctrine provided the broad framework for the development of panzer divisions and for the infantry and artillery to extend the tank's potential.

The Doctrinal Combination.

> Using the American armed forces as the world's "911" will degrade capabilities, bog soldiers down in peacekeeping roles, and fuel concern among the great powers that the United States has decided to enforce notions of "limited sovereignty" worldwide in the name of humanitarianism.
>
> Condoleezza Rice[84]

The ascendancy of the more selective engagement of the Powell Doctrine in the new administration should not be overemphasized in terms of Army transformation. Americans associate themselves with Thomas Jefferson and Woodrow Wilson, not Niccolo Machiavelli and Klemens von Metternich. In the click of a TV switch or a "mouse," the American public can be face-to-face with the realities of the post-Cold War world. The new President may choose his use of force at the lower end of the operations spectrum more consistently and effectively than his predecessor. What he cannot do is choose not to choose. The new environment is much more than just a balance of power world. In one way or another, as General Powell acknowledges, the United States cannot avoid the full spectrum of the Clinton Doctrine.

For the Army, the most critical area on that spectrum that is not addressed by transformation is peace operations. As the recent experiences in both Bosnia and Kosovo demonstrate, conflict termination in smaller-scale

contingencies in the new environment normally requires long-term peace enforcement, usually provided by ground troops, for conflict resolution. Given the charter of Army transformation, there is little to be gained in terms of technology, doctrine and organization experimentation by using the Interim Force in peace operations. Army transformation documents make much of physical and mental agility and versatility that support "seamless transitions between benign and hostile environments," but admit that how that is to be accomplished "is not self-evident."[85] The fact remains that the transformed Army as currently envisioned will not solve the dichotomy between peace operations and warfighting in terms of readiness and training; nor will it ease the problem of OPTEMPO even under the most selective implementation of the Powell doctrine. Only by expanding the transformation effort to consider such experimental concepts as a two-force army will the process face the full force implications of the crossover between the Powell and Clinton Doctrines.[86]

Peace operations are symptomatic of the problems of trying to incorporate the two use of force doctrines into a coherent strategy. There is general agreement that some form of transformation must occur if the United States is to maintain its military superiority into the future. *Joint Vision 2020* provides a broad picture of that future, but little guidance concerning the objectives, pace and requirements. In particular, the new administration will have to address the specific objectives that should guide transformation and the degree of urgency for pursuing the process in order to articulate a defense strategy. Decisions on what will be required in terms of investment and divestiture will be required for programming guidance. Finally, there must be risk accountability associated with the objectives, pace and requirements established in pursuit of transformation. A policy of accelerated transformation will have to account for any additional risks concerning the ability of the U.S. military to meet near- and mid-term requirements such as

warfighting. On the other hand, in the event of a more modest transformation effort, there will be a need to account for any risks in the ability of the U.S. armed forces to deal with future challenges. In any event, "ad hocism" will not do; there must be an overarching framework to reconcile the two doctrines. "Case-by-caseism, even if done competently, is simply inadequate," Richard Haass points out in this regard. " . . . . You pay a real price for not having a grand strategy."[87]

Another aspect of *Joint Vision 2020* that has an impact on Army transformation is that the document discourages jointness by preserving each service's distinct interests with its discrete separations of the concepts of Dominant Maneuver and Precision Engagement. The result is a bifurcated intellectual revolution with competitive, not complementary, traditions in the form of maneuver theory developed from Blitzkrieg doctrine and precision strike theory derived from interwar strategic bombing theory. All this only encourages each service to pursue its separate path across the spectrum of operations, even to the point of perfecting concepts beyond the point of meaningful joint contribution and at the expense of other services. In the end, there is a critical requirement to bring together the separate paths of the intellectual revolution. Joint experimentation needs to go beyond interoperability and the current service "seams" to exploit integration, synergies, and interdependence in order to create and explore joint capabilities that do not currently exist. In a time of limited resources, without new joint operational concepts and architecture, the way the United States fights will not be fully transformed.[88]

For the Army, a Defense-wide approach to transformation is axiomatic. More than any other member of the armed forces, the Army is dependent in fundamental ways on change within the other services. A transformed Army, for example, will have far greater reliance in the future on remote forces and strategic mobility provided outside its organization. As a result, the Army continues to emphasize that in the transformation process, "the Services must

become more *interdependent"* and that this interdependence "is achieved through the deliberate, mutual reliance on the capabilities of other Services to maximize the synergy of the joint force while minimizing its vulnerabilities. . . ."[89] At the same time, there is a recognition that Joint Forces Command has not yet become the authoritative voice on transformation in the context of both force development and joint experimentation. Moreover, the commanders in chief of the unified commands deal primarily with current threats and thus have a relatively short-term focus compared to the services, which have the responsibility for the long-term equipping and training of the force. In this context, continued Army experimentation can provide key input to what will have to become a joint venture in order, as the Army recognizes, for a complete transformation process to occur.[90]

There has been a sense of urgency to that experimentation since the outset of the Army transformation effort—the idea, in General Shinseki's words, that there is only "a narrow window," that "these conditions will not last for very long."[91] Part of that urgency, of course, has to do with the growing obsolescence of the Legacy Force. But much of it also has to do with the sense of ubiquitous and rapid technological change leavened by the understanding that technology can only provide the promise of innovation, that it does not determine the process of change. That can only come from the top—a process hindered by the maximum 4-year tenure of an Army Chief of Staff.[92] In those circumstances, it is difficult to find time to create a transformation vision and attract a hard core of innovators in the spirit of General Sir John Burnett-Stuart, who wrote to the British War Office in the 1920s that his experimental armored forces should be connected with "many enthusiastic experts and visionaries . . . ; it doesn't matter how wild their views are if only they have a touch of divine fire. I will supply the common sense of advanced middle age."[93] All this the Chief of Staff has set in train. The more difficult task is to institutionalize a process that can achieve

his vision. "Much of what we are up against," General Dubik points out, "is not technology but mindsets, institutional obstacles. . . . Part of what we are doing involves breaking the bureaucracy and rebuilding it for the new force."[94]

Conclusion.

> "Continuity" must reign over those principles, practices and organizations that remain useful; "change" over those variables that have lost their utility.
>
> James M. Dubik[95]

The combination of the Powell and Clinton Doctrines will facilitate the interaction referred to by General Dubik as the Army moves forward in the transformation process. Taken singly, each doctrine could have adverse effects on that process. With just the Clinton approach, there would be little chance for the Interim Force to influence the Objective Force, because it would be consumed in helping a legacy constabulary force to spread indiscriminately across the operations spectrum in the endless service of world order. Under these circumstances, it would be difficult to make any substantial divestiture or to find time or incentive to change organization, concepts and doctrine. On the other hand, the Powell Doctrine when taken alone could cause the RMA to become too narrowly focused on the Holy Grail of future peer threats, ignoring more immediate asymmetrical challenges throughout the entire spectrum of operations. In that type of situation, there would be fewer opportunities to try out full Interim Force improvements in organization and doctrine and more chance for premature divestiture of the Legacy Force.

In combination, the two doctrines have had a positive effect on Army transformation. There is the reminder from the Clinton Doctrine of the worth of shaping and responding in terms of deterrence and compellance, all of which can be achieved in a safer and more capable manner with the initial combination of Interim and Legacy forces and,

eventually, with the Objective Force. Added to this is the fact that the full operational spectrum is a permanent fixture of the new environment, and that by orienting against threats across this spectrum, the Army will develop a more versatile and agile Objective Force that can provide the NCA more options and will thereby improve the chances of "getting it right" in the transformation process. From the Powell Doctrine, there is the reminder that absent prioritization, the characteristics of the Objective Force may only ensure the equivalent of a more speedy dispatch of Custer and his troops to Little Big Horn. Moreover, there is also the emphasis on restraint with the fascination concerning the technological revolution—that, in fact, technology is not a panacea for the use of military force and needs to be disciplined by the concomitant development of doctrine and organization and the realities of committing landpower in force intervention. In the end, the net result has been to reinforce the three-force Army initiative for achieving acceptable transformation risk in the near-, mid-, and long-term.

This is an essentially conservative approach to a revolutionary process. But it has the merit of using the synergism of change and continuity to maximum effect.[96] Moreover, in a time of resource constraints, by initially transforming a small part of the force and linking it to the past and present, the process has avoided creating two armies, an important aspect of congressional relations as transformation proceeds. Most importantly, Army transformation has stirred important debates—in sharp contrast to the French experience in the interwar years when the High Command would not allow dissenting opinion on doctrine. "Everybody got the message," André Beaufre noted in his memoirs, "and a profound silence reigned until the awakening of 1940."[97] Equally important, there has been little of the strident advocacy in either camp like that of J. F. C. Fuller and Basil Liddell Hart in interwar Britain, which exacerbated the split between the innovators and the large mass of professional soldiers, thus assuring

that the ideas of the innovators played a decreasing role in the preparation of British ground forces for the next conflict.[98] In any event, the current debates on Army transformation reflect a positive interest in the process of change which is always a good thing. In the interwar United States, where there was no interest for the most part in the military, there was no pressure to change. In the case of the American horse cavalry, this resulted in tacit permission for the cavalry professional to romanticize an increasingly untenable situation in the most mechanized nation in the world.

ENDNOTES - CHAPTER 3

1. Niccolo Machiavelli, *The Prince*, W. K. Marriott, trans., Vol. 23, *The Great Books of the Western World*, Chicago: Encyclopedia Britannica, Inc., 1952, p. 9.

2. Douglas A. Macgregor, "Transformation and the Illusion of Change, " *National Security Studies Quarterly*, Vol. VI, No. 4, Autumn 2000, p. 111. See also Steven Kosiak, Andrew Krepinevich, and Michael Vickers, *A Strategy for a Long Peace,* Washington, DC: Center for Strategic and Budgetary Assessments, January 2001, p. 9; and James S. Corum, *The Roots of Blitzkrieg. Hans von Seeckt and German Military Reform*, Lawrence, KS: University of Kansas Press, 1992.

3. Michele Flournoy, Project Director, *Report of the National Defense University Quadrennial Defense Review 2001 Working Group*, Washington, DC: National Defense University Institute for National Strategic Studies, November 2000, p. 14. "Like the idea that a revolution in military affairs is taking place," Steve Metz has pointed out, "the contention that the U.S. military must undertake transformation sped from introduction to canon with little debate." Steven Metz, *American Strategy: Issues and Alternatives for the Quadrennial Defense Review*, Carlisle Barracks, PA: Strategic Studies Institute, U.S. Army War College, September 2000, p. 32. The Defense Science Board defines transformation as a change that is focused on military operations, managed by the organization itself and aimed toward the "very big change" implicit in an RMA, the pursuit of which involves "fundamental changes in military capabilities including new doctrines, operational concepts and organizational structure." *Report of the Defense Science Board Task Force on DoD Warfighting Transformation,* Washington, DC: Office of the Under Secretary of Defense for Acquisition and Technology, August 1999, pp. 5-6. On the

characteristics of RMAs, see Andrew F. Krepinevich, "Cavalry to Computer. The Pattern of Military Revolutions," *The National Interest*, Fall 1994, p. 30. On skepticism concerning the RMA hypothesis, see Michael O'Hanlon, *Technological Change and the Future of Warfare*, Washington, DC: Brookings Institution Press, 2000, Chapter 2.

4. Nevertheless, the CSA urged, it was necessary for everyone to get on board the transformation project: "You can't wring your hands and roll your sleeves up at the same time." General Eric K. Shinseki, address to the Eisenhower Luncheon, 45th Annual Meeting of the Association of the U.S. Army, October 12, 1999. See also Final Draft, January 17, 2001, unclassified TRADOC study, *The Foundation of Army Transformation and the Objective Force Concept*, p. 1.

5. James Dubik, "IBCT at Fort Lewis," *Military Review*, Vol. LXXX, No. 5, September-October 2000, p. 18.

6. Elting Morison, *Men, Machines, and Modern Times*, Cambridge, MA: The MIT Press, 1966, p. 208.

7. *Ibid*., p. 36.

8. Richard J. Dunn, III, "Transformation: Let's Get it Right This Time, " *Parameters*, Vol. XXXI, No. 1, Spring 2001, pp. 22-23.

9. *Report of the Defense Science Board Task Force*, p. 13. See also *Foundation of Army Transformation*, p. 12. For other Service transformation activities, see *Ibid*., pp. 14-16. See also Metz, pp. 19-20; and Stephen P. Aubin, "Stumbling Toward Transformation: How the Services Stack Up," *Strategic Review*, Vol. 28, No. 2, Spring 2000, p. 39.

10. "People who control the purse strings might get a misperception of the Army's contribution to this effort," one Army official commented. "We were ready to go on the ground. That option was taken off the table for political reasons. It had nothing to do with readiness." James N. Thurman, "After Kosovo, U.S. Air Force and Army in a Tug of War," *The Christian Science Monitor*, p. 2.

11. See, for example, Daniel Verton, "Army Battles Irrelevancy," *Federal Computer Week*, November 15, 1999; and John Barry and Evan Thomas, "Not Your Father's Army," *Newsweek*, November 22, 1999, pp. 49-52. For more recent linkage of Kosovo to the Army's strategic relevancy, see *A Strategy for a Long Peace*, p. 29. On the probable impetus of Kosovo to transformation efforts by General Shinseki, the former top Army leader in Europe and commander of NATO forces in Bosnia, see Frederick Barnes, "Washington Looks at Kosovo's Lessons,"

Defense and Foreign Affairs Strategic Policy, Vol. 27, No. 7, July 1999, pp. 13-14.

12. Deputy Secretary of Defense John Hamre's August 4, 1999, speech to the University of Chicago Law School's symposium on "The Future of the U.S. Military Presence in Europe." Colin Clark and George Seffers, "Hamre to U.S. Army: Rethink Future War Strategy," *Defense News*, Vol. 14, No. 35, September 6, 1999, p. 6. Retired Lieutenant General Thomas Rhame, the commander of the 1st Infantry Division in Operation DESERT STORM, was not receptive to the message: "The current trend seems to be to say the Army is not relevant, but I'm not willing to respond too warmly to all this relevancy crap until someone is prepared to guarantee me what the threat will be in the future." *Ibid*.

13. Dubik, p. 23.

14. *Foundation of Army Transformation*, pp. 15, 45.

15. *Defense Science Board Task Force*, p. 27. See also *Ibid*., p. 20; and Krepinevich, p. 31.

16. Dubik, p. 18. All those involved in the Army transformation process are, as Michael Howard long ago pointed out in words similar to Dubik's,

> like a sailor navigating by dead reckoning. . . . Occasionally there is a break in the clouds: a small-scale conflict occurs somewhere and gives you a "fix" by showing whether certain weapons and techniques are effective or not: but it is always a doubtful mix. . . . For the most part you have to sail on in a fog of peace until at the last moment. Then, probably when it is too late, the clouds lift and there is land immediately ahead; breakers, probably, and rocks. Then you find out rather late in the day whether your calculations have been right or not.

Michael Howard, "Military Science in An Age of Peace," *Journal of the Royal United Services Institute for Defence Studies (RUSI)*, No. 119, March 1974, p. 4.

17. Dubik, p. 17.

18. Michael Mehaffey, "Vanguard of the Objective Force," *Military Review*, Vol. 80, No. 5, September/October 2000, pp. 6-7; *Strategy for a Long Peace*, p. 30; and Sean D. Naylor, "Stealthy, Fast, Lethal. Objective Force Will Require Changes in Training and Doctrine," *Army Times*, March 19, 2001, p. 10.

19. Dubik, p. 19.

20. *Foundation of Army Transformation*, p. 43. Even the often critical *A Strategy for a Long Peace*, p. 9, acknowledges that "any strategy must also preserve the U.S. military's ability to defend America's global interests throughout the entire transformation period, which could run a decade or longer."

21. Mehaffey, pp. 7-8, 16.

22. Flournoy, p. 14; and Louis Caldera and Antulio J. Echevarria, "The Strategy—Resource Mismatch," *Armed Forces International*, March 2001, p. 32. The nonpartisan Congressional Budget Office estimates that just to keep the armed services at their current status will require a $51 billion annual increase in DoD funding—a figure that did not include an estimate of approximately $60 to 100 billion for National Missile Defense. Gordon R. Sullivan, "No Easy Fixes," *Ibid*., p. 36.

23. Richard Neustadt and Ernest May, *Thinking in Time: The Uses of History for Decision-Makers*, New York: The Free Press, 1986, pp. 255-256. But see Edward L. Katzenbach, Jr., "The Horse Cavalry in the Twentieth Century," Robert J. Art and Kenneth N. Waltz, eds., *The Use of Force, Military Power and International Politics*, 4th ed., Lanham, MD: University Press of America, 1993, p. 180, who believes that it is precisely because the military profession deals with life and death matters that it should be utterly ruthless in discarding the old for the new.

24. A. J. Bacevich, "Preserving the Well-Bred Horse," *The National Interest*, Fall 1994, p. 44. See also *A Strategy for a Long Peace*, p. 30.

25. *Foundation of Army Transformation*, p. 14. See also Andrew F. Krepinevich, "Why No Transformation?" *Joint Force Quarterly*, No. 23, Autumn/Winter 1999-2000, p. 100; and Dubik, p. 18, who also notes the need to retain some of the current Legacy Force as a "hedge against potential trouble" even as the Army transforms:

> North Korea has not gone away; Southwest Asia has not gone away; the requirements for those forces around the world have not gone away. And so we cannot erode this capability; we need to keep that warfighting capability, the forced entry capability. We have to keep upgrading, recapitalizing, investing in these forces to maintain our superiority over any potential enemy while we are

developing the organizations, doctrine and equipment that will replace them.

26. The Army asked that the report be put on hold until there could be discussions with the USGAO. Kim Burger, "Army Officials Object to Aspect of GAO's Transformation Report," *Inside the Army*, March 5, 2001, p. 1.

27. Robert Nolin, "New Army To Be Faster, More Mobile Chief of Staff Tells Broward Convention," *Fort Lauderdale Sun-Sentinel*, March 2, 2001, p. 1.

28. Chris Strohm, "Shinseki Says More Money Will Be Added For Transformation," *Inside the Army*, March 5, 2001, p. 13.

29. *Ibid*.

30. Matthew Cox, "Off Track? Plan for Medium-Weight Force Has Skeptics Among Tankers," *Army Times*, November 8, 1999; "Helo Supporters Concerned About Aviation's Role in the 'New Army,'" *Inside the Army*, October 25, 1999; and Barry and Thomas, p. 52.

31. One retired general, referring to the traditional Army belief in the need for organic deep strike capabilities, termed the on-going evolution of the interim and objective forces as "violating the paradigm." Daniel Dupont, "Observers Surprised by Army's Decision to Kill ATACMS Block IIA," *Inside the Army*, January 6, 2000, p. 7.

32. Aubin, p. 47. Aubin, the Director of Policy and Communications for the Air Force Association, goes on to accuse the Army of being intellectually mired in the past, "focused on the idea of closing with the enemy—be it with heavy or lighter forces—even if the enemy might be destroyed from the air or sea before the Army arrives." *Ibid*., p. 40.

33. Hunter Keeter, "Commandant Seeks Inter-Service Discussion Over Expeditionary Roles, Missions," *Defense Daily*, October 31, 2000, Vol. 208, Issue 21, p. 1.

34. Colin Powell with Joseph E. Persico, *My American Journey*, New York: Ballantine Books, 1996, p. 561.

35. George Shultz, "Terrorism and the Modern World," October 25, 1984, Speech, *Department of State Bulletin*, No. 84, 2093, December 1984, pp. 14-17; and *Turmoil and Triumph. My Years as Secretary of State*, New York: Charles Scribner's Sons, 1993, p. 649. Powell, from his "perch in the Pentagon," believed that with the Marine deployment to Beirut, the United States was "sticking its hand into a

thousand-year-old hornet's nest with the expectations that our mere presence might pacify the hornets." Powell, p. 281. Shultz, in Powell's estimate, was "often ready to commit America's military might even in a no-man's land like Lebanon." With Shultz, it was always the same question: "What was the point of maintaining a military force if you did not whack somebody occasionally to demonstrate your power?" *Ibid*., p. 92.

36. Caspar W. Weinberger, "The Uses of Military Power," *Defense '85*, January 1985, p. 10. For Powell's involvement as Weinberger's Military Assistant in the draft doctrine, see Powell, p. 92.

37. Shultz, *Turmoil and Triumph*, pp. 650, 646.

38. Bob Woodward, *The Commanders*, New York: Simon and Schuster, 1991, p. 356. "The military is finished in this society," Secretary of Defense Dick Cheney warned, "if we screw this up." *Ibid*., p. 324.

39. George Bush, "The Use of Military Force: The President's Difficult Choice," *Defense Issues*, Vol. 8, No. 1, 1993, pp. 2-3. See also Kenneth J. Campbell, "Once Burned, Twice Cautious: Explaining the Weinberger—Powell Doctrine," *Armed Forces and Society*, Vol. 24, No. 3, Spring 1998, pp. 366-367; Richard N. Haass, *Intervention: The Use of American Military Force in the Post-Cold War World*, Washington, DC: Carnegie Endowment for International Peace, 1994, pp. 69, 76; and Charles A. Stevenson, "The Evolving Clinton Doctrine on the Use of Force," *Armed Forces and Society*, Vol. 22, No. 4, Summer 1996, p. 516.

40. Richard Nixon, *No More Vietnams*, New York: Avon Books, 1985, p. 224. But see Caspar Weinberger, *Fighting for Peace: Seven Critical Years in the Pentagon*, New York: Warner Books, 1990, p. 159, who still believed 16 years later that the combination of diplomacy and the military was dangerous because it implied that "we should not hesitate to put a battalion or so of American forces in various places in the world where we desired . . . stability, or changes in government or support of governments or whatever else." See also Jeffrey Record, "Weinberger-Powell Doctrine Doesn't Cut It," *The U.S. Naval Institute Proceedings*, Vol. 126, No. 172, October 2000, p. 36.

41. John McCain, "Renewing American Foreign Policy: Values and Strategy," *Brown Journal of World Affairs*, Summer/Fall 1998, p. 54. See also Jeffrey Record, "A Note on Interests, Values, and the Use of Force," *Parameters*, Vol. XXXI, No. 1, Spring 2001, pp. 17, 20.

42. Henry Kissinger, *Years of Renewal*, New York: Simon and Schuster, 1999, p. 1072. See also Record, "Weinberger-Powell Doctrine Doesn't Cut It," p. 36.

43. All quotes from Colin Powell, "U.S. Forces: Challenges Ahead," *Foreign Affairs*, Winter 1992/93, pp. 36, 39. For more on this evolving aspect of Powell's thoughts, see DoD, *Joint Pub. 3-0: Doctrine for Joint Operations*, Washington, DC: JCS, 1993, pp. I-3, I-4, published 3 weeks before his retirement as Chairman.

44. Powell's remarks at the National Press Club, September 28, 1993, Stevenson, p. 513.

45. Powell, "U.S. Forces," pp. 37-38.

46. Original emphasis. Carl von Clausewitz, *On War,* Michael Howard and Peter Paret, eds., Princeton: Princeton University Press, 1976, p. 92. For Powell's admiration of Clausewitz based on studies at the National War College, see Powell, *My American Journey*, p. 200.

47. Powell, "U.S. Forces," p. 40. In 1992, General Barry McCaffrey, then working for the JCS, testified before Congress that the Joint Chiefs chaired by Powell had concluded that a military intervention in Bosnia would be more difficult than the Vietnam conflict, and that 400,000 ground troops, coupled with a year-long bombing campaign, would be required to defeat the Bosnian Serbs. Lawrence J. Korb, "The Use of Force," *The Brookings Review*, Spring 1997, Vol. 15, No. 2, p. 24. One Admiral labeled the Powell Doctrine as "the Never-Again Club," referring to the Army's fear of repeating the Vietnam experience. Thomas E. Ricks, "Colin Powell's Doctrine on Use of Military Force is Now Being Questioned by Senior U.S. Officers," *Wall Street Journal*, August 30, 1998, p. A12. In early 1994, former President Bush stated that when he was in office, Cheney and Powell had both warned that an intervention in Bosnia might require 250,000 U.S. troops and still not succeed in its mission. Stevenson, p. 516.

48. William J. Clinton, *A National Security Strategy of Engagement and Enlargement*, Washington, DC: The White House, February 1995, p. 13:

> Have we considered nonmilitary means that offer a reasonable chance of success? Is there a clearly defined, achievable mission? What is the environment of risk we are entering? What is needed to achieve our goals? What are the potential costs—both human and financial—of the engagement? Do we have reasonable assurance of

support from the American people and their elected representatives? Do we have timelines and milestones that will reveal the extent of success or failure, and, in either case, do we have an exit strategy?

49. Korb, p. 24. See, for example, the President's November 27, 1995, address after the Dayton Accords, in which he stated that the mission would be "precisely defined, with clear realistic goals that can be achieved in a definite period of time." "Presidential Address to the Nation," *The Washington Post*, November 28, 1995, p. A8.

50. Secretary of Defense William S. Cohen and General Henry Shelton, Chairman of the Joint Chiefs of Staff, "Joint Statement on Kosovo After-Action Review," Senate Armed Services Committee, October 14, 1999, p. 27. The SACEUR later commented on the pressure not to lose aircraft over Serbia: "The headlines began to shout, 'NATO loses a second aircraft,' and the people ask, 'How long can this go on?'" Wesley K. Clark, "The United States and NATO: The Way Ahead," *Parameters*, Vol. XXIX, No. 4, Winter 1999-2000, pp. 8-9. See also Jeffrey Record, "Force-Protection Fetishism. Sources, Consequences, and (?) Solutions," *Aerospace Power Journal*, Vol. XIV, No. 2, Summer 2000, p. 5; Andrew J. Bacevich, "Policing Utopia," *The National Interest*, No. 56, Summer 1999, p. 6; and Andrew P. N. Erdmann, "The U.S. Presumption of Quick, Costless Wars," *Orbis*, Summer 1999, p. 380.

51. John Correll, "The Threshold of War," *Air Force Magazine*, February 2001, p. 2; and Bacevich, "Policing Utopia," p. 7.

52. Lawrence F. Kaplan, "How to Send a 'Message': Use AT&T, Not USAF," *Wall Street Journal*, December 23, 1998, p. A14.

53. Blaine Harden and John M. Broder, "Clinton's Aims: Win the War, Keep the U.S. Voters Content," *New York Times*, May 22, 1999, p. A1; and John T. Correll, "About the Powell Doctrine . . .," *Air Force Magazine*, August 1999, p. 10.

54. Hunter Kiefer, "Hans Mark: Complementary Technologies Critical to Military Transformation," *Defense Daily*, Vol. 207, Issue 2, July 5, 2000, p. 2. It was a conflict as Senator Joseph Biden pointed out, designed to demonstrate that dictators "cannot hide behind a border." Douglas Waller, "The Three Ifs of a Clinton Doctrine," *Time*, Vol. 153, No. 25, June 28, 1999, p. 35.

55. Bob Davis, "Pledging a 'Clinton Doctrine' for Foreign Policy Creates Consensus for Adversaries and Allies Alike," *Wall Street Journal*, August 6, 1999, p. A12; Doyle McManus, "U.S. Casts About for

Anchor in Waters of Post-Cold War World," *The Los Angeles Times*, March 27, 2000, p. A6; and Robert Manning, "The Clinton Doctrine: More Spin Than Reality," *The Los Angeles Times*, September 5, 1999, p. 2.

56. Jonathan Rauch, "Two Cheers for the Clinton Doctrine," *National Journal*, Vol. 32, Issue 22, May 27, 2000, p. 1665.

57. Barnes, pp. 13-14.

58. Bacevich, "Policing Utopia," p. 10. "In this last annual threat assessment of the twentieth century," the Director of Central Intelligence testified on February 2, 1999, "I must tell you that U.S. citizens and interests are threatened in many arenas and across a wide spectrum of issues." Michael T. Klare, "The Clinton Doctrine," *The Nation*, Vol. 268, No. 14, April 19, 1999, p. 5.

59. "Prosperity is a parent to peace," Secretary Albright announced at her confirmation on January 8, 1997. Moreover, she added, "we know that democracy is a parent to peace." Bacevich, "Policing Utopia," p. 11.

60. Klare, p. 5.

61. *Ibid*.

62. Michael Kinsley, "Is There a Doctrine in the House?" *The Washington Post*, August 9, 2000, p. A25.

63. Richard N. Haass, "The Squandered Presidency. Demanding More from the Commander-in-Chief," *Foreign Affairs*, Vol. 79, No. 3, May/June 2000, p. 139; and Charles Krauthammer, "The Clinton Doctrine," *Time*, Vol. 153, No. 13, April 5, 1999, p. 88.

64. Williamson Murray, "Innovation Past and Future," Williamson Murray and Allan R. Millett, eds., *Military Innovation in the Interwar Period*, Cambridge: Cambridge University Press 1966, p. 301.

65. Andrew Krepenivich, Address to the U.S. Army War College, January 31, 2001. See also Flournoy, p. 19; Caldera and Echevarria, p. 32; and Donald Latham, "Defense Science Board Views on Army Transformation for 21st Century Warfare," *Army AL&T*, pp. 8-9.

66. Dubik, p. 23.

67. Gail Kaufman, "Futurists Say Pentagon Still Lagging On Its Future Weapons Development," *Stars and Stripes Omnimedia*, January 22, 2001, p. 2. See also *Defense Science Board Task Force*, p. 17.

68. "Dynamic Commitment III" was the third in a series of four games designed to help craft the QDR. "War Games Show Army Used Extensively in Meeting Security Strategy," *Inside the Army*, February 5, 2001, p. 1. See also *A Strategy for a Long Peace*, p. 21.

69. A *Strategy for a Long Peace*, p. 10.

70. Harold Winton, *To Change an Army. General Sir John Burnett-Stuart and British Armored Doctrine*, Lawrence, KS: University of Kansas Press, 1988.

71. The Cardwell regimental system had been introduced in 1868 specifically to balance imperial policy demands with those of the continental commitment. *Ibid.*, pp. 174, 189-190, 228-231; and Thomas Donnelly, "No End of a Lesson," *The National Interest*, Fall 1994, p. 111.

72. Brian Bond, *British Military Policy Between the Two World Wars*, Oxford: Clarendon Press, 1980, p. 24.

73. In their annual review for 1926 and repeated in 1927, the British Chiefs of Staff reported: "We wish to place on record our view that forces available for Imperial Defense are now reduced to a minimum and are hardly capable of dealing with the problems that are liable to arise either singly or simultaneously." Correlli Barnett, *The Collapse of British Power*, New York: William Morrow & Company, Inc., 1972, p. 277. In their annual review for 1932, which caused the government to end the Ten Year Rule, the Chiefs stated that the Rule had caused a "terrible deficiency in essential requirements for all three Defense Services and a consequential inability to fulfill our major commitments." *Ibid.*, p. 343. The Ten Year Rule and the recommendations of the Geddes Report, or Geddes Axe as it was known, were entirely in keeping with the strong public faith in the League Covenant's substitution of collective security for national "swords." Bond, p. 27.

74. Williamson Murray, "Armored Warfare: The British, French, and German Experiences," *Military Innovation in the Interwar Years*, p. 10.

75. Condoleezza Rice, "Promoting the National Interest," *Foreign Affairs*, Vol. 79, No. 1, January/February 2000, p. 46.

76. McManus, p. A6; Rauch, p. 1666; and William Safire, "Exegesis of Acceptance," *New York Times*, August 7, 2000, p. A19.

77. David Bond, "Bush Team Rethinking Military Strategy," *Aviation Week and Space Technology*, March 12, 2001. "Well, the word

'transformation' is one we hear a lot about," Secretary Rumsfeld commented. ". . . . and it is important." "Interview on U.S. Defense Policies," Fox TV, February 11, 2001. The new Secretary of Defense has a transformation study underway and is also awaiting a study on the subject from Andrew Marshall, the perennial head of Defense Net Assessment. One aerospace industry representative only half-jokingly speculated that the 79-year old Marshall "has had his report written for 10 years. . . ." David Bond,"Change is a Hard Sell to General, Admirals," *Aviation Week and Space Technology*, March 12, 2001, p. 66.

78. Neil Baumgardner, "Army Official Warns of Approaching Block Obsolescence," *Defense Daily*, March 7, 2001, p. 4; and Richard Hart Sinnreich, "Hedging Army Transformation Need Not Impede It," *The Lawton Constitution*, March 11, 2001, p. 4.

79. Donnelly, p. 110. See also Barry and Thomas, p. 49; Katzenbach, p. 173; and Bacevich, "Preserving the Well-Bred Horse," p. 43, who asserts that if the RMA is left in the hands of the military, "the chief product of this revolution will be to perpetuate elements of the status quo most cherished by the military profession, ignoring altogether change with which the military is uncomfortable."

80. Cohen, p. 48.

81. Krepinevich, "Why No Transformation," p. 100.

82. Katzenbach, p. 179. See also Richard Hart Sinnreich, "Military Revolutions and Other Popular Concerts," *The Lawton Constitution*, February 4, 2001, p. 4; and Macgregor, p. 111.

83. Murray, "Armored Warfare: The British, French, and German Experiences," p. 40. See also *Ibid*., pp. 17, 42; Williamson Murray and Allan R. Millett, "Introduction," *Military Innovation in the Interwar Years*, p. 4; Mathew Cooper, *The German Army, 1922-1945*, New York: Stein and Day, 1978, pp. 130-158; and *Defense Science Board Task Force*, p. 24.

84. Rice, p. 54.

85. *Foundation of Army Transformation*, pp. 38, 41. See also Flournoy, pp. 13-14.

86. For examples of such force proposals, see Steven Metz, *The American Army in the Balkans*, Carlisle Barracks, PA: Strategic Studies Institute, U.S. Army War College, January 2001, pp. 36-37; Conrad C. Crane, *Landpower and Crises: Army Roles and Missions in Smaller Scale Contingencies During the 1990s*, Carlisle Barracks, PA: Strategic

Studies Institute, U.S. Army War College, January 2001, pp. 30-35; Thomas McNaugher, David Johnson and Jerry Sollinger, "Agility by a Different Measure. Creating a More Flexible U.S. Army," *Issue Paper*, Santa Monica, CA: Rand Arroyo Center, June 15, 2000, p. 5; James M. Dubik, "Building a Strategy-based Force Structure," *Landpower Essay Series*, No. 99-10, December 1999, p. 6, who proposes a "prevention and deterrent force" focused on conventional warfighting in SSCs and MTWs and an "engagement force" organized by regional theaters. The reality of an engagement policy, he points out, is that it is "long-term. . . . The operational 'model' of a quick, decisive defeat of an enemy followed by a withdrawal of military forces does not fit the circumstances associated with engagement." *Ibid*., p. 7; and John C. Hamilton, "U.S. Army Peace Operations in Kosovo: Time for a Change," *Student Research Project*, USAWC, April 10, 2001, pp. 15-16.

87. McManus, p. A6. See also Flournoy, p. 14. Strategic assessments in the period between the World Wars influenced military innovation—more perhaps than any other factor. In all countries, there was a link between strategic planning and force development in terms of what each nation considered its likely future military needs. Thus Hitler emphasized land power and Roosevelt invested in Army and Navy air. And even in the case of France and Italy where forces were not created adequate to future needs, the estimates were generally made on reasonable strategic assessments. Allan R. Millet, "Patterns of Military Innovation in the Interwar Period," *Military Innovation in the Interwar Period*, p. 342.

88. Antulio Echevarria, "National Strategy and Military Transformation," Strategic Studies Institute Newsletter, March 2001, pp. 3-4; *Defense Science Board Task Force*, p. 27; and Macgregor, p. 114.

89. Original emphasis. *Foundation of Army Transformation*, p. 17. See also *Ibid*., p. 25; and *A Strategy for a Long Peace*, p. 15.

90. "'Jointness' notwithstanding," Eliot Cohen concludes concerning transformation, "the individual services will remain the foundations of military organization as far as the eye can see." Eliot A. Cohen, "Defending America in the Twenty-first Century," *Foreign Affairs*, Vol. 79, No. 6, November/December 2000, pp. 51-52. See also, in this regard, Krepinevich, "Why No Transformation?" p. 101. But see Macgregor, pp. 115-116, who perceives the services as the biggest obstacle to transformation—an impediment that can only be overcome by legislation on the scale of the 1947 National Security Act: "So called transformation programs that occur without significant joint influence and careful congressional oversight will not change the single-service warfighting establishments inside the U.S. armed forces." The Defense

Science Board advised Joint Forces Command to hurry up the process and not wait for perfect solutions. As for everybody else, the board advised in terms of the new command: "Give it time! Don't expect definitive answers early—this is a process, not an event." *Defense Science Board Task Force*, p. 27.

91. Address by General Eric K. Shinseki, February 10, 2000. See also Dubik, "IBCT at Fort Lewis," p. 19: "The final product is going to be in the future, once we get the answer from the science and technology community. But when the science and technology community comes forward and says, 'yes, we can produce it', we want the change as quickly as we can." The Defense Science Board, on the other hand, found no sense of urgency in DoD transformation efforts. *Defense Science Board Task Force*, pp. 10-11. And Andrew Krepinevich has accused DoD of adopting the "Wells Fargo" approach to transformation: moving in slow stages. Krepinevich, "Why No Transformation?" p. 97. Others argue that there is no hurry because of a "strategic breathing space" with no major threats in the near future. Ivans Eland, "Tilting At Windmills: Post-Cold War Military Threats to U.S. Security," *Cato Institute Policy Analysis*, No. 32, February 8, 1999; and Metz, p. 42.

92. There are examples, of course, in which such leadership has had a disastrous impact on the innovation process, such as the tight control exercised by French generals in the interwar years on every aspect of army doctrine. Within the context of the World War I experience, the development of French doctrine made sense. The problem was in the decision by French military leaders to exclude all differences from discussions concerning the subject of mobility. Robert Doughty, *The Seeds of Disaster. The Development of French Army Doctrine*, Hamden, CT: Archon Books, 1986, pp. 86, 92; and Williamson Murray, "Innovation: Past and Future," *Military Innovation in the Interwar Period*, p. 306.

93. Winton, p. 76. See also Millett, "Patterns of Military Innovation in the Interwar Period," p. 336. Von Seeckt was successful in his vision of mobile warfare for the German Army, helped by the Versailles-induced downsizing, a like-minded successor, and a continuity in military principles first tested in the mid-19th century German Wars of Unification. Corum, pp. 29-30, 176; and Echevarria, "National Strategy and Military Transformations," p. 3.

94. Dubik, "IBCT at Fort Lewis," pp. 19-20. See also Dunn, p. 28, who believes the HTLD failure—the last Army transformation effort—was due to the failure to transform simultaneously the entire Army, the institution that had to effect the transformation of the force.

95. Dubik, “Building a Strategy-based Force Structure,” p. 1.

96. The “revolutionists” do not see this as a positive attribute. “Unless you’re willing to risk failure,” Andrew Krepenivich asserts, “then you’re not likely to get anything but small incremental changes.” Kaufman, p. 1. His former boss, Andrew Marshall, the long-time head of DoD Net Assessment, believes that a useful way to deal with the future is to transform a small part of the armed forces to see if the results work well instead of a full blown transformation effort. “I think what that would mean, probably,” he concluded in a virtual description of the Army process, “is taking some part of the force and beginning to experiment with new concepts of operation, new kind of weapons systems.” *Ibid*. See also Robert Holzer, “Top U.S. Military Strategist Faults Navy Innovation,” *Defense News*, February 12, 2001, p. 1, in which Marshall praised Army efforts. “I like what Shinseki is doing. He is trying to push the creation of new units. I like the idea of taking a part of the force and co-evolving it. I wish the other services were doing something similar.”

97. André Beaufre, *1940: The Fall of France*, New York: Knopf, 1968, p. 43. “These are important debates about not just the Army, but also the security of the nation.” Dubik, “IBCT at Fort Lewis,” p. 18.

98. The split was so severe that the innovators continued to lack influence even after the 1939-40 German victories demonstrated the need for immediate reconsideration of ground tactics. Murray, “Armored Warfare: The British, French, and German Experiences,'' p. 24. See also Brian Bond and Martin Alexander, “Liddell Hart and DeGaulle: The Doctrines of Limited Liability and Mobile Defense,” *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, Peter Paret, ed., Princeton: Princeton University Press, 1986, pp. 598-623.

PART II: TRANSFORMATION PLANS AND BARRIERS

The conference opened with an address by Admiral (retired) William Owens, former Vice Chairman of the JCS, entitled "Roadblocks to Transformation: Institutional and Attitudinal Impediments to Change." He discounted the utility of history as a guide to the future, and advocated a number of radical changes to achieve real and lasting military reform. He is a firm believer in the potential of a perceived "Revolution in Military Affairs" (RMA) resulting from advances in Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR). He argued that true transformation is being held back by service parochialism, leadership without vision, stovepipe organizations, a lack of jointness, and too much attachment to old platforms and technologies.

Former Assistant Secretary of Defense James Locher reinforced Admiral Owens' emphasis on the need to alter organizational cultures and the difficulties involved. To overcome the conservative inertia, low adaptability, and lack of focus that have stymied previous attempts to reform the Department of Defense (DoD), Locher outlined a number of key requirements. These included high-quality leadership with realistic future visions, a sense of urgency to overcome complacency, the establishment of a powerful supporting coalition for reform, and a program to sustain and protect innovators within DoD. Brigadier General (retired) Huba Wass de Czege agreed on the importance of having a clear vision of the pace and direction for change based on a new strategic orientation. The cost of getting it wrong can be catastrophic, as demonstrated by France in 1940.

A number of commentators had suggestions for ways to determine that new strategic orientation. Carl Conetta of the Project on Defense Alternatives stressed the importance

of national economic over military power, and argued for a true information age organization with a smaller force structure that deemphasizes global military presence and shaping. At the other extreme, Professor Andrew Bacevich of Boston University asserted that America's global purpose is to maintain hegemony, and to do so it will need to exploit new technology to strengthen powerful neo-imperial military forces. Ralph Peters does not believe Americans have any such long-term vision, and instead sees the country as reacting to the widespread turmoil of a post-colonial era plagued by legacies of bad borders and Western models inappropriate for emerging nations. Accordingly, military forces must be flexible and adaptable enough to perform many missions they would prefer not to do, including "small, dirty wars."

One panel of the conference consisted of representatives from the Quadrennial Defense Review offices of each of the American armed services: Brigadier General Lynn Hartsell of the Army, Lieutenant Colonel Thomas Ehrhard of the Air Force, Captain Arthur Barber of the Navy, and Colonel John Priddy of the Marines. They presented briefings on their own particular approach to transformation. While there were some similarities in the service positions, such as in the exploitation of new technology, it was also obvious that there is no joint vision or unifying approach to American military reform.

While each service has its own unique perspective on transformation, the Army has the most comprehensive and total program for reform. Change is essential to meet a strategic environment that has replaced the global confrontation of the Cold War with regional chaos featuring a full spectrum of threats ranging from terrorists to ballistic missiles. It is too risky to postpone the process. As George Marshall said about building up the American Army for World War II, "Before the war I had time but no money; when the war started I had money but no time."

Though threats have propagated and become more varied, certain enduring requirements remain. Joint forces will still have to be able to deter conflict, dominate adversaries in violent wars, restore stability after hostilities, and reassure friends and allies. The transformed Army will still be able to perform these missions while providing new and enhanced options for National Command Authorities (NCAs). This will be accomplished by sustaining and recapitalizing the current Legacy Force, fielding a lighter but still lethal Interim Force by 2003, and developing the Objective Force that will be the culmination of the transformation effort. The new Army will be of increased value to decisionmakers by maintaining the decisive qualities of land power while adding new capabilities for power projection and strategic speed.

The service understands that more than just equipment will have to be modernized. Soldiers will need new training and leaders will have to be educated differently to handle the increased demands and capabilities of the Objective Force. Organizations and doctrine will also need revision. The Transformed Army will combine lethality and survivability with agility and versatility. Units will arrive quickly and fully supplied: a brigade within 96 hours, a division within 120 hours, and five divisions in 30 days. Because of the new speed of deployability, Army forces will start the fight earlier and decisively resolve the situation in about half the time currently projected. Quicker finishes mean lower casualties, less collateral damage to towns and infrastructure, and fewer refugees.

As a number of previous commentators had remarked, these advances cannot occur without significant changes in military culture. The Army is aware of this, and plans to change the way the organization thinks and operates. New command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) technology will make information a new weapon. Forces will be able to avoid enemy strengths and focus combat power on vulnerabilities, acting first and finishing decisively with

massed effects. Soldiers will need to think in terms of simultaneous and continuous operations instead of the sequential planning now utilized. Leaders will have to nurture an atmosphere encouraging experimentation, innovation, and calculated risks.

The Objective Force will enhance joint capabilities and provide theater commanders-in-chief and NCAs with more options. It will generate power rapidly, and apply it decisively. It will use precision fires and dominant maneuver to control ground on a continuous basis, ensure access for joint and combined forces, and transition rapidly between operations. With integrated joint systems, it will "see first, understand first, act first, and finish decisively."

The current Army has begun transformation while maintaining readiness and the ability to be "persuasive in peace and invincible in war." New equipment like the Comanche helicopter is being developed, and the Interim Brigade Combat Team is undergoing testing. The whole process can be put at risk, however, if leaders invest poorly, do not think boldly, delay efforts too long, or allow fragmentation to occur. The most essential enabler, therefore, to achieve successful full spectrum transformation, is skillful and visionary leadership.

In contrast to the Army's emphasis on the new aspects of its transformation process, the Air Force takes the position that it has always been an innovative service, and its continuing efforts in that direction will be a primary driver for joint force and national security transformation. There are three key elements leading to major changes in defense: advanced and innovative stealth and precision technologies, new concepts of operations such as "effects-based" planning that make use of those technologies, and new joint organizational structures such as the Joint Force Air Component Commander.

More than any of the other armed services, the Air Force has always been focused on technology. It foresees great advantages to be obtained by the deployment of new

surveillance and weapons systems into space, which will provide the nation impressive global vigilance, communication, navigation, and precision strike capabilities. Advances in atmospheric delivery vehicles, precision munitions, and command and control mechanisms will yield "order-of magnitude" improvements in third-dimensional precision engagement and dominant maneuver that will be applied rapidly and simultaneously across an entire theater. Even more dramatic changes will come when directed energy systems will provide "speed of light" lethal effects. For now, the leap-ahead technologies necessary to propel and sustain these advances in aerospace power are embodied in the F-22 and Joint Strike Fighter. However, they must be purchased in enough quantities to replace today's aircraft which are becoming increasingly obsolescent, and fill ten equally capable Aerospace Expeditionary Forces.

Based upon a glowing assessment of the Air Force's role in Operation DESERT STORM and the Balkans, as well as great optimism about the capabilities of future technology, the service advocates a number of new concepts for joint operations. Of all the services, the Air Force has the clearest vision of how it wants to fight. "Global Reconnaissance Strike/Global Strike Task Forces" will defeat antiaccess threats, as F-22s supported by aerial refueling can operate from bases thousands of miles away from targets. Vaguely defined "Effects-Based Operations" will better integrate elements of national power to compel desired political outcomes in "Coercive Campaigns." Aggression will be stopped in "Rapid Halt Operations" that will isolate and incapacitate enemy forces. "Global Network Centric Warfare" will enable near real time global force application to assure access to space and information capabilities while denying them to adversaries.

While couched in joint terms, these concepts all rely primarily on exploiting the nation's overwhelming superiority in aerospace power, which will be further enhanced by taking advantage of the ongoing RMA. Stealth

However, the Navy also realizes it needs to transform to perform its own missions better as well as to facilitate expeditionary operations by the other services. It plans to accomplish this through a new focus on Network Centric Operations and improvements in its abilities to deliver precision strikes and "artillery from the sea." With American maritime dominance unchallenged in the post Cold War period, the service can now concern itself more with directly and promptly influencing land battles. As in the past, the new Navy will still be expeditionary, forward deployed, self-sustaining, and mobile so it is difficult to target. However, it sees that it needs to shift from an organization focused on single missions and sea control to multi-mission, networked units that can project power and better conduct littoral joint operations.

As with the Air Force, the Navy has identified some key technologies necessary for a transformation from a platform-centered sea control force to an expeditionary network-centric organization that can assure littoral access for joint forces. Required ships include a fleet of AEGIS-class ships capable of theater ballistic missile defense and Virginia-class nuclear submarines. F/A-18s and Joint Strike Fighters will provide a multi-mission air capability. Procurement strategies already indicate trends toward the new force, with acquisition of more precision guided munitions (PGM) and fewer anti-ship missiles or anti-submarine torpedoes.

The 21st century Navy will display a number of new features. Networks will link all elements to process information better and increase knowledge as well as lethality. New Land Attack Ships and an increased number of PGM-capable aircraft will magnify the power and flexibility of firepower support. All-electric ships will improve fleet efficiency, while other new designs will reduce manpower requirements. All these changes will improve relevance and responsiveness. During Operation DESERT STORM it took 3 days to plan a Tomahawk cruise missile mission. By 1998 for Operation ALLIED FORCE, it took

only an average of 101 minutes from tasking to engaging the target. By 2004 missiles that can be retargeted in flight will respond in near real-time. The netted, dispersed, agile Navy of the future will have increased lethality, flexibility, and efficiency.

The Navy's transformation efforts will be coordinated closely with the Marine Corps' strides to improve their own brand of expeditionary warfare, which they expect to be in great demand in the complex world of the future. However, the Marines see their own reform as an evolutionary process building on their current strengths and being of more limited scope than that of the other services.

The Marines' stimulus for transformation is future uncertainty, as adversaries evolve and technology diffuses. However, they also emphasize their contemporary importance as the nation's premier expeditionary "Total Force in Readiness." The Marines portray the combined arms team of their Air Ground Task Force as the "Joint Force Commander's Leatherman Tool" that provides strategic agility, operational reach, and tactical flexibility. Tailored for the mission, Marine forces provide continuous forward presence and power projection capability to promote national interests, influence vital regions, and win the nation's battles. They perceive a robust forcible entry capability as one of their most important capabilities, now and in the future.

To further refine and improve the service for its future missions, its leaders plan to train better Marines, optimize the performance of their forces, and capitalize on innovation, experimentation, and new technology. Like the Air Force, the Marines believe they have an innovative tradition. This will contribute to new warfighting concepts as well as a reform in service business practices. They plan to field new camouflage uniforms, modular individual weapon systems, advanced all-terrain vehicles, and improved artillery, while incorporating the Joint Strike Fighter and MV-22 Osprey into their force structure. The

end result will be a force with increased speed, precision, and stealth that will remain "the right force for the next fight."

The contrast in service presentations is revealing. The Army sees the most need for change and has developed the broadest program for transformation, but details on its final Objective Force remain sketchy at best. The Air Force has the clearest vision of the structure of its future units and how they will fight, but is narrowly focused primarily on winning major theater wars and of all the services most heavily depends on the promise of new technology. The Navy and Marines emphasize how well they are performing their current missions and see transformation more as reinforcing their present strengths while also adding some new capabilities.

While all the presentations displayed the word "joint" on many slides, there was little evidence of any unified interservice approach to transformation except, as should be expected, in the Navy and Marine plans. With conflicting visions and constrained budgets, many hard choices will have to be made, and certainly no service will get everything it wants. That will make the proper selections of new technology and directions even more critical, to make sure the right programs survive to meet the demands of a violent future. And choosing any one service approach predominantly over the others takes the risk of creating an unbalanced force incapable of handling a full spectrum of threats and missions.

Another factor that will influence the final course of service transformation will be the positions of the new Bush administration and Congress. There are many indications that the President and his advisers are aware of the need for defense reform, but their concepts may differ greatly from those of the service chiefs, who have not been major players in the conduct of Secretary of Defense Dennis Rumsfeld's initial reviews. Congress has also displayed much independence on defense issues, and if their initial reactions

to proposals to close bases and reduce force structure are an indication of the future, then making significant changes in the services may be even more problematic.

The two chapters that follow in this section present additional perspectives on the paths of defense transformation and the obstacles along the way. Dr. Chris Demchak of the University of Arizona and Dr. Patrick Allen of General Dynamics, both members of the Cyberspace Policy Research Group, provide a complex analysis of how the current military system discourages and stifles innovation. They also argue that the evolving plans for reform will create a structure that is very susceptible to surprise because of a lack of flexibility and redundancy, and propose an alternative model to facilitate transformation. Then Dr. Leslie Lewis and Dr. Roger Allen Brown from RAND Corporation describe how fiscal constraints will affect efforts for defense reform, and suggest some trade-offs and divestitures to further the process. While the initial impact of the September terrorist attacks has bolstered the DoD budget, the limitations covered in the chapter will still have an impact on future transformation efforts.

CHAPTER 4

TECHNOLOGY AND COMPLEXITY: THE MODERN MILITARY'S CAPACITY FOR CHANGE

Chris C. Demchak
Patrick D. Allen

All organizations change over time. The essential question for managers is how to determine what evolutionary path the organization is on, how to identify a preferred path if the current one is not desirable, and then how to achieve the desired path. We presume the Army as any institution has the capacity to change in some direction and will do so as driven by constraints and contingencies. Building on that presumption, however, we argue that the effectiveness of the transition process significantly depends on the clear articulation of the desired end states. If the attributes of the path are either a) unlikely to be achieved, or b) not clearly understood and reinforced by use of change agents, then the transition will produce a path not explicitly chosen by anyone. This path is quite likely to be undesirable.

In particular, we suggest the Army's debate over achieving a Revolution in Military Affairs (RMA) has produced two features. The first is a very rough consensus on an RMA model that needs an extraordinary amount of slack and redundancy to succeed and that lacks clear articulation of this requirement. As a result, the system emerging in the Objective Force and ancillary changes is unlikely to achieve this RMA. Secondly, Army senior managers are not using change agents effectively.

Innovative individuals are not being nurtured by sympathetic senior officers and innovative organizations are routinely permitted to die for lack of institutional and financial support. Both reduce the chances that the endeavor will succeed. Our analysis includes the use of complexity theory to evaluate the likelihood of the envisioned RMA, and describes the effects of incentives and disincentives for individuals and organizations in support of institutional change. In conclusion, we suggest the "Atrium" model, adapted from the hyperlinked organizational model by Nonaka and Tageuchi (1997), as a long-term organizing and guiding option for future military organization and the institutionalizing of change. In the near term, we recommend policy changes to encourage trial and error and the growth of change agents and institutions.

CHANGE TO WHAT? THE RMA MILITARY AS A PREFERRED ORGANIZATIONAL PATH

The U.S. Army has led the debate in defining new military structures and operations. It has expressed a new ranking of military needs for a novel, information-enabled organization loosely falling under the rubric of the RMA. This organization promises new levels of speed, accuracy, low friendly and civilian risk, and reach that are extremely attractive.[1]

Notionally Capturing the New Technological Age.

The RMA has, at its core, a technology-driven transformation of military organizations into large-scale, highly-synchronized deployable combat systems using networked computer technologies.[2] In the United States, this has become captured by the term "system of systems" indicating a massively integrated overarching network of computer networks that are equally facile in acquiring, providing, and processing real-time information for nearly instantaneous actions.[3]

With a smaller force lacking the redundancy of large standing forces, an RMA requires a profound and unprecedented alteration in military organization if it is to be accomplished successfully.[4] The complexity of the networked technologies forces new organizational designs that emphasize "synchrony," i.e., the elements moving in tightly coupled, extremely rapid operations. While this vision of an invincible machine has been dreamt of and even attempted by countless military commanders, only now with massive computerization and the "death of distance" through networks can it seem to be possible to know enough to make the vision real.[5]

Achieving an all-purpose, highly scalable, fully informed, tightly networked human machine of unprecedented range, accuracy, speed, and lethality requires extraordinary geographical reach, rapid absorptive capacity, and surprise-mitigation in a social system. To get information reliably across distances requires electronic (or future equivalent) networks. To present the information for rapid and accurate "find, access and absorb" operations across a multitude of different terminal and human filtering characteristics requires quickly interpreted iconography and client-server independent graphical mechanisms. Finally, to make this exchange timely requires a continuously available many-to-many format with the organizational emphasis on real-time updating, refreshing, and refining of material.

The Many-to-Many Challenge

The new model clearly involves widely shared knowledge and, by implication, a new approach to knowledge management based on web-like technologies. In complex systems, effective "systems fit" depends on knowledge that is reliably accurate, rapidly and widely disseminated, and, most importantly, requires that the people at the nodes are able to acquire the knowledge pumped through these networks and know how, when and

where to use it. In the American image, this volume of information is constant, seamless, and intensely active. The nets link sources from overhead unmanned aerial and satellite sensors to the infrared night vision device of the individual solder. The massive data maps in the Pentagon directly download to the full color near real-time battle map display of the rugged laptop of the tank commander and to streamlined information warfare (IW) forces, which will operate quickly, accurately, lethally, and effectively. These forces will need to be protected against enemy jamming, logic bombs, sniffer programs, herf guns (variation of jamming), or computer worms while able to impose the same and much, much more in direct explosive material on opposing forces.[6]

In particular, these networks need to be established, effectively used and maintained for real-time accessibility even before hostilities begin, not retained and energized just when hostilities are imminent as traditional militaries operate.[7] In the U.S. RMA and its emergent notions of IW, there are three general issues particularly concerning information-technology (IT)-enabled militaries which touch directly on issues studied in complexity research.[8] These are a) the physically and cognitively complex organizational interactions in a dynamic large-scale system, b) the varying time requirements of pattern discernment and reconstruction in the use of these systems, and c) the differences between data, information, knowledge, and wisdom in accommodating surprise.[9] Not understanding the organizational requirements of such complexity while modernizing into this model risks dangerous mismatches between operational orders and actual organizational capabilities.[10]

HOW LIKELY IN THIS OR ANY LARGE-SCALE COMPLEX SYSTEM?

Obtaining critical knowledge can be a savior; however, ensuring its availability can be a burden. The artifacts and

technique of advanced information systems cannot effectively perform without the right organization.[11] The difficulties for the global military community in this sea change search for modern capabilities lie in what is clear from the promotional literature—that the new model of a military is built on an incredibly rapid, accurate, lethal, and small set of networked battle systems. What is implicit or omitted from the discussion is that these systems are complex and depend on web-based technologies in which the more integrated the system, the greater the surprise potential simply from the intricacies of the systems themselves.

The RMA's level of complexity, especially in the efforts to ensure precision and synchronization, ensures surprise. In essence, a full implementation of the RMA "system of systems" imposes an extensive knowledge burden for the using organization that *must* explicitly be taken into account in a redesigned organization if it is to operate successfully.

Complex Systems Mean Surprise.

It is extremely difficult to discern in advance the actual dynamic capabilities of large organizations inextricably intertwined with complex electronic equipment. Yet, modern society is increasingly marked by the growth of these highly integrated systems. This observation has led to the development of a field of study devoted to understanding the implications of "Large Technical Systems" (LTS), especially the organizational control mechanisms and social risks associated with them.[12] Recognizing that such large systems can manifest "artifactual success combined with system failure,"[13] scholars in this new field focus on the conditions under which these systems impose risks on themselves and on unwitting societies. In particular, LTS studies are focused on identifying the constellations of circumstances most likely to produce costly or catastrophic surprises.

The central attributes of an LTS are as follows. First, an identifiable social system with boundaries and internal coherence emerges when heterogeneous small-to-mid- scale organizational activities (linked at their core by interdependencies among machine elements) expand, possibly compete, and then consolidate into a highly interdependent and spatially wide-ranging network of essential relations.[14]

Second, the scale of these phenomena is such that they are extraordinarily complex and hence difficult to comprehend by average nonexpert individuals, a situation affording the system considerable insulation from normal mechanisms of social control other than costly concerted efforts in times of crisis.[15]

Third, the system's inherent complexity and spatial reach increase the likely opportunity costs of predicting, mitigating, protecting against, or surviving the surprising outcomes of complex systems. LTSs have a particular potential for deleterious surprises.[16] In any system, some outcomes will always remain unknown ('unknowable unknowns') while others are knowable with sufficient research but not currently known ('knowable unknowns'). A set of undesirable unknowns, called here the 'rogue' set, produce the unpleasant surprises. These unexpected negative events are more likely to be disruptive because any complex system is more tightly coupled and prone to experience ripple effects from shortcomings in key nodes along lengthy contingent chains.

Both machines and organizations can be such complex systems with rogue sets. 'Accommodating the knowledge burden' can reduce the "rogueness" of the set of unknown and unknowable unknowns.[17] In any case, accommodation involves having the right knowledge available when and where surprises could occur. This can mean literally knowing enough in advance to avert the surprise, or making the system operate so that the effect of the surprises is negligible and does not ripple far. Unaccommodated

systemic surprises, if large, frequent, and persistent, tend to channel human individual and group behaviors in directions often not anticipated by the designers.[18]

The fix is redundancy or slack designed into the organization from the outset. Organizational designs robust for surprises usually incorporate slack in terms of time to perform or precision in processes, or redundancy of elements that provide critical knowledge in operations.[19] Traditionally, militaries choose redundancy as the easiest way to accommodate surprise. That means a duplication of equivalent knowledge modalities at the time and place of need. For example, for decades after World War II, the U.S. Army considered 100 percent staffing of a unit to actually be 125 percent because 25 percent casualties were expected in any conflict.[20] If redundancy is not chosen, then slack can serve to force discontinuities in the organization's tight coupling. This deliberate decoupling or additional friction in the coupling can avert, reroute, mitigate, or ameliorate the deviant surprise event, dampening or stopping its ripple effects.

Although people are often the source of surprise events, they function equally as dampeners in highly integrated systems. Human variations interrupt the automaticity of networked processes, both slowing it down but also possibly saving the system by localizing deleterious ripple effects. In wide-ranging, highly automatic networks, such dampening has to be planned into the system. Otherwise, full-scale redundancy of elements is necessary to assure a system's reliability.

Key to knowing the amount of either redundancy or slack (which amounts to reduced automaticity) that will accommodate surprises is trial and error under fully stressed conditions. For all their differences in approach,[21] the overlapping lessons of complexity theory and chaos theory are that both indirectly argue for trial and error learning in large systems, however expensive.[22] In short,

time occupied with trial and error learning is essential for mitigating surprise, especially from rogue outcomes.

In military terms, then, if peacetime preparations do not enable high fidelity trial and error of intended operations, then the organization is unlikely to be able to mitigate rogue outcomes when they emerge. If the organization is not doing the activity in peacetime—and the more complex the activity, the more routinely performed it must be—then the organization is unlikely to be able to do it effectively under any other circumstances.

RMA Design in "Objective Force" and Transition Plan Short on Complexity Accommodation.

Complexity matters critically in this U.S. RMA model because its initial approach to knowledge management is to limit slack and redundancy to speed up processes and reduce costs.[23] The appropriate mesh of organizational knowledge, precision requirements, and accommodation of surprise then measure effectiveness in these systems.[24] Since militaries cannot carry everywhere an extra set of everything, fully integrated and ready to be turned on, having mirrored all files, then slack must be built into the RMA design. Put baldly, a fully implemented RMA will demand high levels of preciseness in system network flows, minimal slack or dampening in transaction times, and extraordinary accuracy in filtering overwhelming real time data for the right knowledge at the right place.

All complex systems depend extremely on initial conditions and should understand the inevitability of the knowledge burden. However, accommodating surprise does not appear to guide the initial design of this RMA model.[25] Rather, the dominant theme is that somehow the Army, heavily focused on deploying to fight enemies in a conventional manner, will transform itself into the highly synchronized and accurately targeted RMA force. For example, the Army's 2001 Posture Statement says, "the Army is trained and equipped for the overwhelming and

synchronized application of land combat power." It goes on to say the "presence of landpower [physically] also guarantees compliance with the terms of peace."[26] The dominant organizational view, therefore, is that this organization applies explosive power, not knowledge-based disruptive pressures more in keeping with the information age. Another page states "while engagement activities foster conditions that prevent and deter wars, the Army's core function is to remain ready to respond anywhere in the world to fight and win the Nation's wars."[27] The promise is that this current force will be transformed into new organizational structures that will provide "a more responsive, deployable, agile, versatile, lethal, survivable, and sustainable force: a force designed to meet the challenges of frequent operations in an uncertain international security environment and achieve dominance at every point on the spectrum of operations."[28]

The October 1999 Army Vision Statement has much the same language that suggests a profound misunderstanding of what is required to produce an RMA or, indeed, any knowledge-based complex organization. The following assertion is worth quoting in full.

> Our commitment to meeting these challenges compels comprehensive transformation of The Army. To this end, we will begin immediately to transition the entire Army into a force that is strategically responsive and dominant at every point on the spectrum of operations. We will jumpstart the process by investing in today's off-the-shelf technology to stimulate the development of doctrine, organizational design, and leader training even as we begin a search for new technologies for the objective force. Doing so will extend our technological overmatch.[29]

In implementing that vision, the Army Transformation Plan to the new "Objective Force" states the following, also worth quoting in full:

> We are increasing our investment in science and technology to accelerate Army Transformation—Future Combat Systems (FCS) specifically. . . . When the

> technology is mature, and production lines are ready, we will field the Objective Force in unit sets—at least brigade size. Organizations will be complete suites of new integrated combat systems achieving the capabilities outlined in The Army Vision—responsive, deployable, agile, versatile, lethal, survivable, sustainable.[30]

For the transition force, the "Interim Force," the plan is to have at least six interim brigade combat teams which are explicitly "not an experimental force to be tested for development [because w]e know the requirement. We need operational and warfighting capability now."[31]

The language suggests a profound misunderstanding of what full spectrum of operations using information technologies implies for organizations in terms of slack, redundancy, and knowledge. The statements about the "Objective Force" do not clearly articulate a model that accommodates complex system surprises. Trial and error under high fidelity conditions is not likely when the "interim" force is not used for development. Rather, this approach is like ordering a car design that no one has ever driven, cannot be returned, will take a long time to produce, and will cost everything if one is wrong about its functioning. Furthermore, the new RMA organization is planned on a shoestring budget where, for the sake of efficiency and a promotional banner of streamlining the organization, redundancy and slack are deliberately reduced in the human-machine mesh of the highly synchronized organizational design.

Surprise is therefore encouraged in this model; the orchestration of elements has a knowledge burden that the organization is unlikely to be able to accommodate.[32] Whatever the system that emerges on the ground, if it approaches the synchrony, speed, and interdependence goals of the RMA, it will be highly brittle. With so little clear articulation about how these new brigades actually make this synchrony more likely, the slow process of change without adequate trial and error learning in the interim force further encourages deviations not congruent with the

original design goals. It is, therefore, our assessment that the RMA model is not likely to be achieved on the current and planned organizational path. What emerges on this path is likely to be less successful in a complex long-range, highly meshed human-electronic and physically demanding operational environment.

CHANGE HOW?

No matter how difficult it is to achieve an RMA force, the current transformation process would not do it. In their policy and organizational actions, the senior Army leaders do not demonstrate a good understanding of how to change the culture of their organization and thereby get the best outcome possible even under a poor articulation of the RMA model. If this situation continues, the RMA vision is unlikely to be implemented properly, if at all.

It is never easy to change military organizations. They are often perceived to be more resistant, or less capable of change, than other organizations because of their strong tendency to path dependence on initial conditions. Successful change means the new organization will satisfactorily change the path to meet the *emerging* constraints and contingencies of its emerging environment. Wars are so infrequent that a military focused on war as its defining operational environment has few opportunities to test ideas about new paths. Furthermore, the external conditions pushing for change come equally infrequently. Large conflicts leave behind leftover stocks of materiel, disrupted economies, populations uninterested in investing in more war materiel, and a generation of military leaders who, either as winners or losers, need to move out before new ideas can be implemented. Thus, organizational change is heavily incremental, internally buried, and often creeping in unexpected directions.

For the U.S. Army, the good news is that current domestic and global circumstances actively promote change involving new technologies. The circumstances identified by

Trevor Dupuy are emerging.[33] The leadership of the organization and the wider political system are recognizing the new technologies. There is a growing cross-pollination and goal conformity across the nation's technical, financial, and military resources. Finally, there are emerging contemporaneous occasions for experimenting in battle[34]—albeit not in battle as it is traditionally recognized.[35]

These circumstances have taken 20 years to develop, a period consistent with the historically normal time taken for militaries to incorporate new technologies. Indeed, as I argue elsewhere, the last 20 years has seen an unprecedented change in the implicit rankings of military technological choices from the old triad of guns, bombs and nukes to include "information" as a destructive, or at least disruptive, weapon.[36] Simultaneously, a reweighting of six basic military needs has emerged among leaders of the global military community, from a primary emphasis on lethality, reach, and resupply to one in which a more equal weight is given to accuracy, legitimacy, and speed/timeliness.[37]

The difficulty, however, is in the demonstrated understanding of the Army leadership about how to direct change under such fortuitous circumstances. The broader social and business literature on organizational change has emphasized the need for direct chief executive officer (CEO) involvement in any transition. This involvement begins with a clear identification of explicit elements of the desired end state and then, importantly, personal support for change agents. The senior leaders must know what they want structurally and say so clearly enough for others to accept it. But these leaders must also select, publicly honor, and personally reinforce change agents.[38] Furthermore, the change agents must be knowledgeable about the new technologies and able to innovate to move their part of the organization in the direction desired by the senior leadership. Without these mechanisms being continuously

sustained, change does not occur in the form, frequency, or cumulative direction desired.

Currently in the "no-fail" culture of the U.S. Army, would-be innovators are being wasted or driven out. This is not the rather hackneyed critique that there is no room in today's Army for a Patton. Change agents are directed innovators. To succeed, they will need to have the latitude to innovate and then to have that innovation guided and publicly nurtured. In commercial terms, this vision of a military is something akin to a business process reengineering (BPR) effort, a dramatic changeover when continuous improvements are not working or not preferred.[39] Without these innovators performing trial and error experiments that the rest of the organization then absorbs, the BPR fails. To have effective change agents, the Army needs to foster a culture welcoming to innovators—both innovative individuals and innovative organizations—and it does not currently succeed here. Rather, the current system discourages innovative individuals and stifles innovative organizations.

Innovative Change Agents Discouraged.

Admiral William Owens asked before he retired, "Where is the revolutionary who will lead the Revolution in Military Affairs (RMA)?"[40] There was no one he could point to. No Billy Mitchells, no Alfred Mahans, no George Pattons, no George Marshalls. What is different about the Army now versus other times in the past is that there are currently no rewards for risk taking, and many punishments for even the smallest mistakes. As one officer in the U.S. Army Command and General Staff College Survey stated, "Risk aversion has become a military cultural thing; commanders are not willing to take risks (and subordinates know it)."[41]

Individuals respond to the rewards and punishments imposed by the institution in which he or she belongs, or they opt out of that institution entirely.[42] In the current U.S.

military, the perceived pattern is that if an officer makes one mistake, he or she is out of the best career paths.[43]

A "no-fail" Army is unlikely to rescue its innovators or grow sufficient change agents. George Washington would never have become the General of the Army in today's Army since his first major action at Fort Necessity was a major defeat. He was also with General John Burgoyne at his debacle. Washington lost most of his Revolutionary War battles as well, especially early in the conflict. Washington learned from his mistakes, but it is not clear the current Army leadership allows middle-ranking officers the time and opportunity to learn from trial and inevitable error. When General Jack Kidd was retiring, he was asked, "What's the one thing a commander should do?" He answered, "Protect your mavericks. Otherwise, everyone around you thinks like you, and you will all be surprised."

Few incentives exist for commanders to protect their mavericks in today's Army. Since one bad or merely neutral officer evaluation report (OER) can ruin a career, a highly risk averse senior rater can derail an innovative change agent easily.[44] The system provides no effective recourse for an officer who is unfairly rated. When a subordinate makes a mistake, the system has not taught the superior officer to respond with a learning perspective. Rather, the system encourages the senior officer to be concerned that he or she will also suffer in evaluations if a subordinate makes an error, irrespective of the actual portion of blame due the senior member. Supporting evidence comes from the survey: "Top-down loyalty DOES NOT EXIST. Senior leaders will throw subordinates under the bus in a heartbeat to protect or advance their career."[45]

This trend is not only found in the Army. In 1996, terrorists blew up a U.S. apartment building in Saudi Arabia after the commander had argued for increased security consistently for months. He was blamed for the attack despite his efforts to avoid this outcome. The Chief of Staff of the Air Force attempted to save this officer's career

by preemptively resigning as the responsible commander, but the local commander was forced to retire anyway, losing his once almost certain bid to be a major general.[46] This pattern strongly suggests high levels of risk aversion are being institutionally reinforced in U.S. military organizations.

There is also a tendency of the current system to ignore knowledge-focused work in its rewards. The officer promotion system leans more positively towards combat officers whose skills are with the more destructive and physical aspect of the overall mission. Today's battlefields and future battlefields will increasingly involve spaces not associated with any physical terrain. The system currently does not encourage people who understand this nonphysical knowledge environment, those who can visualize and operate comfortably in spaces they cannot visit personally and see directly with their own eyes.

The role model for the fighter in the Information Age is less likely to be the snake-eating physically macho man. While the organization will still need folks with close combat skills, the information age also requires individuals with unique abilities to think in abstract spaces—cyberspaces, virtual spaces, and abstracted representations of reality that provide information superiority and battlefield dominance. To paraphrase Colonel (retired) Bob Killebrew, officers need to be professional soldiers, practitioners and scholars in the art of war in the information-enabled age, not warriors who pull the triggers. Nor should senior officers be themselves focused on trying to be physical warriors.[47] The information warrior or "I-fighter" will need to be free to innovate and to have a self-construction as someone who is mentally macho—bold, risk taking, decisive in defining and experimenting with new ways of fighting in both the physical and the virtual battlefields. This type of military force will not emerge without trained, encouraged, rewarded, and protected change agents. Without those institutional and public rewards, the officers and enlisted soldiers best qualified to

succeed on tomorrow's battlefield will continue to opt out of the Army.

Innovative Organizations Stifled.

Just as the Army leadership is not demonstrating the will or understanding to encourage change agents, they show less understanding of the technologies they intend to acquire. This is quite consistent with the generalist ethos of the organization but is undesirable in an era of change to complex information systems. This pattern is not, however, surprising. The Army's history with innovative organizations is not encouraging. The leadership has consistently shown a tendency to attempt to shove new technologies into older organizational structures. When they have not done so, they have also shown a gross misunderstanding of the technology-human mesh, and innovative organizations have not fared well as a result.

A good example of this lack of understanding in the modern age is the Army's attempt to adapt to the nuclear age using an innovative structure called the Pentomic division. During the fifties, the organization experimented with preparations for tactical atomic warfare. The emergence of the atomic weapon, its inherent complexity and the political aggrandizement of the Strategic Air Command (SAC) seemed to place conventional forces close to obsolescence, portraying the development of large, noisy, lumbering tanks as foolish expenditures. The Korean War, with its rough terrain and difficult supply lines, added to the general perception of the tank as a weapon that had seen its day. Army research explored the use of small nuclear weapons. Atomic projectiles were developed for 280 mm, 8 inch, and 155 mm artillery pieces. Army missile development throughout the 1950s, 1960s, and 1970s included in the larger systems a capability to fire nuclear rounds. With the Pentomic division, the organization devised an innovative structure for the new technology and the nuclear battle.

Based on a conventional war and equipment, especially the tank, the previous structure, called the "square division," with its massed forces provided excellent targets for enemy nuclear weapons. Survival on the nuclear battlefield required organizational flexibility and avoidance of massed forces. Army research introduced the "Pentomic" division in 1956; by 1958, all divisions had been reorganized into pentomic structures. The new division was a collection of five brigades, each with three tactical command posts and few fixed boundaries. Each division was cut in strength from the standard 17,000 soldiers: airborne to 11,486; infantry to 13,748; and armor to 14,617. Designed to be expansible by the addition of other brigades, the new division structure in principle increased firepower, mobility to disperse or concentrate quickly, and communications for very rapid changes in position or activities.[48]

The Pentomic division had serious organizational drawbacks. Given the relative weakness of any individual brigade, lengthy offensive activities could not be supported; the division as a whole was more suitable for defense than offense. Communication problems were horrific; much equipment simply did not work as planned. There were other serious operational problems.[49] By the early 1960s, it was clear that the atomic weapon would have limited applicability in the most likely type of war, the guerilla war. The Army's research focus turned to helicopters and missiles, attempting to put a missile on a tank and to drop a tank from a helicopter or plane.

In 1962, only 4 years after the first Pentomic division was unveiled, a new more conventional division emerged. By 1964, all the divisions had been reorganized into this structure called, appropriately enough, the Reorganized Army Division, or "ROAD" division. This division was noteworthy only in its ordinariness after the Pentomic structure and its return to about 15,000 people. The key feature of the ROAD division was its traditional basis in the assumptions of a nontechnical army. Its internal organization had more to do with the number of people

subordinate to each commander and their redundancy than did the pentomic with its clear connection to assumptions about technical advances. The ROAD division signaled that the portion of the managerial level responsible for structuring the forces intended to continue the Army structure as one built upon people despite the enthusiasm elsewhere in the service for technical advances. Equipment advancements and opportunities would continue to be forced into the basic organizational mold. The only exceptions were the helicopter units and air defense missile units such as IHAWK. Tactical nuclear war did not disappear; only the Pentomic division did. The ROAD division remained in effect with minor variations until the Division 86 reorganizations of the 1980s.[50]

In the early 1980s, Chief of Staff of the Army General Edward Meyer attempted to be innovative in designing a new organization. He authorized an experiment with the High Technology Test Bed (HTTB), which later evolved into the High Technology Light Division (HTLD). "He directed the HTTB to design a division to fight primarily in the Middle East and secondarily as part of NATO. Reinforcing NATO was an addition to the original mission statement because the Army didn't believe it could justify developing an entirely new division that could not support its primary strategic mission."[51]

However, this new and innovative organization had to exist with insufficient funding and attempt to thrive in an institutional environment suspicious of technology-based innovations.

> The division found a number of obstacles in the path of conducting an effective evaluation. There was constant tension with Training and Doctrine Command (TRADOC), which had the traditional mission of developing and testing designs, and Forces Command (FORSCOM), which was responsible for maintaining trained and ready forces for deployment. The division drew from and competed for resources with both these major headquarters.[52]

Without sufficient funding to equip the new division as planned, the HTLD (located in Washington state) could not demonstrate capabilities that developed sufficient internal institutional supporters in Headquarters, Department of the Army in Washington. In 1984, Army Chief of Staff General William Wickham switched it to the High Technology Motorized Division (HTMD), presumably in order to save it.[53]

Nonetheless, although the HTMD continued to exist for the next 4 years, it was always considered a competitor and a target. Its ideas could not diffuse because, without high-level internal support, traditional organizations considered adopting anything from the innovative organization as a win for the innovative organization. Finally, in 1988, "the Army was finding it difficult to justify maintaining multiple types of infantry divisions . . . the motorized capability was determined to be least essential."[54]

The HTLD died because the leadership did not ensure its adequate resources and its clear integration in their notions of the future Army. Therefore, the "zero sum game" bureaucratic politics calculus of the traditional Army elements worked against any innovative Army organizations. It is significant that the RMA Objective Force BCT is many years away, not going to be tested in developments with the interim force, and vague in its expression. Unless the Army chooses to protect, support and publicly reward its innovative organizations, such organizations will continue to be stifled by the traditional elements of the Army through constraints on funding and on the transfer of innovative ideas and results.

A final example of innovative knowledge-focused organizations is the current battle laboratories. Originally designed to help circumvent the cumbersome acquisition system, the Battle Labs were designed to be centers of rapid innovation. Unfortunately, many battle labs were co-opted early on by the traditional TRADOC School System (at one

point, there was one per branch school). But the real threat to the Labs was the inflexible POM cycle and the funding streams controlled by the traditional acquisition community. There was no transition plan to get innovative ideas into the acquisition cycle, partly because the traditional acquisition community would consider such a transfer a win for the labs. Whenever a battle lab had a success (such as Warrior becoming the All Source Analysis System and Phoenix becoming the Maneuver Control System), it was done quietly, and credit for the successes were subsumed in the "acquisition fold."

There was no public reward for the innovative organization, for fear of insulting the traditional acquisition community. Moreover, the funding stream for the labs continued to diminish, until each of the battle labs became primarily dependent on the traditional acquisition center it was supposed to be prodding. Its primary source of independent funding was the Advanced Concepts and Technology II Program (ACT II), usually announced annually through a broad agency announcement (BAA). This year, it was announced that the ACT II BAA would be terminated. The battle labs now have no substantive independent funding source, and therefore cannot speak of alternatives outside what is approved by the traditional acquisition community. Any innovation being produced by the battle labs is quickly being stifled, and will soon be no more. The traditional acquisition community will then breathe a sigh of relief and continue to perform "business as usual," which does not include innovation, nor innovative organizations competing for resources or limelight.

Overall, innovative organizations and individuals have not fared well within the Army in recent years. Senior leaders have failed to protect, nurture, and publicly reward them and then it becomes easier for existing units to either ignore them or to argue that they are not effective. Moreover, the innovations developed by these change agent organizations must be injected into the rest of the traditional Army organizations, with public rewards given

to the traditional Army organizations that accept and build upon these innovations.

A PREFERRED AND ACHIEVABLE ALTERNATIVE

An alternative that is both preferred and achievable accomplishes the following goals. First, it meets the complex constraints and contingencies of the new national security environment. Second, its structure accommodates complex systemic surprises, trend prediction, recovery from unknowable unknowns, continuous improvement, reliability/maintenance, and member training and job content/context satisfaction.[55]

An alternative model of a future military organization is doable under the following tests. Its elements are clearly stated and comprehensible to all members. Its requirements are compatible with resources available in the environment at least, in the organization as well at best. Its senior leaders embrace the new format continuously and publicly. The organizational conditions permit change agents to be selected, trained, positioned, nurtured, and rewarded.

The Atrium Model—The Long-Term Ideal.

To meet these aims in today's national security environment, the model must be information-based, as well as compatible broadly with some existing structures, most contingencies, and a basic understanding of operations. We propose a variant of the "hypertext" organization described by Nonaka and Takeuchi.[56] Labeled the "Atrium" model of an information-based organization, this refinement is a design that treats knowledge as the new element in the modern military organization. Knowledge is the whole process of sophisticated and rapid collection and massive archiving of data, then data mining it into information, and, finally, integrating and displaying knowledge for local decisions, long- term thinking, or reorienting future paths.[57]

In their original work on successful corporations innovating in this direction, Nonaka and Takeuchi describe the knowledge base (KB) as a third and equal partner in the organization. The other two are a central business operation that functions much like the previous firm, and a set of task forces answering to the CEO for innovative and problem-solving missions. People cycle between the task forces and the central operation, each time data dumping their experiences in the knowledge base. The result is the computerized gathering of the implicit knowledge of the organization and an incredible wealth of information about that firm's inner workings and responses to contingencies and constraints, and opportunities.[58]

Nonaka and Takeuchi's work is relevant for any organization in a complex environment because it attempts to reconcile the competing demands and benefits of both matrix and hierarchical organizational forms. Matrix organizations are more innovative, flexible, and able to perform double loop learning,[59] but they are slow. Hierarchical organizations are more inflexible and need explicit plans and trained responses but they are fast in operation under predictable circumstances. In the original model and in my refinement, the knowledge base of the organization is actively nurtured both in the humans and in the digitized integrated institutional structure to get both the speed and the innovation to increase the accuracy of responses to demands by the environment.

The major contribution here is that the knowledge base is integral to the success of processes and the survival of the institution. Nonaka and Tageuchi have identified several Japanese corporations that seem to operate along these lines productively and one is struck by an interesting distinction—implicit knowledge developed by human interactions related to the job is not only viewed as a source of value by the corporation but also as key to long-term survival. It is this view of knowledge that distinguishes these corporations and makes them more prepared for surprise in the marketplace.

In adapting the hyperlinked design and social construction to a military setting, I have given this concept of a knowledge base a name, the "Atrium."[60] The term captures the sense of being a place to which a member of the organization can go, virtually or otherwise, to contribute and acquire essential knowledge, and that it is a place of refuge to think out solutions. The mental image is that it is overarching, something that protects as well as demands inputs. It is a player in the structure of the organization, but one that supports, suggests, and helps channel the actions of the others in the organization.

The model has three main organizational elements. There is the main stem of operations functionally divided as it is today but with fewer subdivisions. Here are the finance, personnel, transportation, operations, logistics, and recruitment elements that keep main systems functioning. Then there is the Atrium—an underlying computerized database that is graphically accessible much like a 3D website. Military members interact with the Atrium in three ways: as consumers of knowledge from queries they inputted, as contributors providing explicit and implicit data to the underlying matrix, and as knowledge producers massaging the information into knowledge that is then available through various recall and query techniques to the consumers.

Finally, there are the task forces. These are specialized units that have existed for years in preparation for particular missions that may or may not ever emerge. In the Atrium model, a cadre of permanent support staff is left in specialized task forces. But the mission with the task force is time limited, and the bulk of the members rotate in and out on 6- to 12-month assignments, developing skills but also staying connected with the needs and problems of the main stem of operations.

There is a final aspect to the Atrium model that specifically recognizes the role of the Atrium knowledge base itself. That is the periodic rotation of every member

into the Atrium to be both a contributor of implicit knowledge and to learn or refresh his or her producer experiences. Over time, career soldiers will then be able both to use the Atrium and also to adapt its products to emerging needs. The goal is that the Atrium processes and data base will not only gather implicit knowledge, but that every organizational member will be skilled enough to innovate in some way with or through this knowledge.

Preferred.

Due to the knowledge focus of this organization, the model proposed here is more likely to meet the surprises imposed by the more complex national security environment, including new web-borne national security threats. Complex systems will impose destructive surprises unless knowledge about their form and/or frequency is obtained and accurately and rapidly acted upon in advance. That is the essential knowledge burden of living in and surviving with complex systems.

First, the Atrium provides knowledge leading to wider choices. The military organization survives best when it is first knowledge-focused and surprise resistant, and then is able to disrupt or destroy other systems as the analysis of the situation dictates. An Atrium-based military does not lose its destruction mission but that is not its key capability. Also, the knowledge base is not merely an elevated rapid pipeline system connecting actors and thrusting avalanches of nearly unprocessed data to low and high level decisionmakers. The Atrium's defining characteristic is that it is more like an extremely knowledgeable partner. Its central function is to accumulate the organization's explicit and implicit information into knowledge that enables high and low decisionmakers to make wiser decisions. It is not the third player below humans and weapon systems and not primarily focused on supporting rapid deployment of potentially destructive operations. The Atrium makes the difference in recovery from the unknowable surprises, in

supporting continuous improvement, in facilitating reliability and maintenance, and in member training and job content satisfaction, as well as in accurate and rapid trend predictions. If the Atrium experience can also be made aesthetically attractive, then even job context can be helped in this model.

Second, the Atrium directly contributes to stability and dampening rogue outcomes in a complex system under stress. A fully organizationally-transparent, interactive, maintained, and easily accessed web community with data warehousing and mining on call can become a "trusted source" that is consulted when surprising rumors, shortfalls in knowledge, or routine information needs are encountered. It also allows the controller of the content of that site enormous advantage, albeit not face-to-face, over what is widely believed to be true.

Third, it has a face that is exportable. "I-fighters" are on call 24/7 and known to be so, and could be the key to maintaining American military dominance. If the future produces a hostile China, the United States will be much the smaller nation in population. An exchange of one for two casualties in a deployment of our small, lighter forces is less likely to deter determined leadership of such a large country. However, as China digitizes vigorously as it currently seeks to do, its vulnerability to information war techniques will begin to level the playing field.[61] A threat by an Atrium-based force to disrupt or disable a quarter of the Chinese economy at will may be credible, especially after it is done once to demonstrate capability. By the same token, the RMA does little to reduce a growing U.S. vulnerability to foreign electronic attacks during peacetime. A 24/7 Atrium military would collect, refine, profile, and suggest responses to avert such disruptions whether in peacetime or during active hostilities.

Doable.

This model is doable because it has conceptual handles enabling senior leaders to implement it, check on the implementation, focus change agents on it, and then publicly reward progress. It can be and should be socially constructed as a key player in the organization.

The Atrium is more than a library or a database on a server; it is a structure in and of itself integrating applications and data. It reaches into the task forces who use it for data mining while also sustaining general operations, sharing information broadly. But it is also a place where task force members can conceptually "go there" to consume, contribute, or produce some of its knowledge. Its tools are increasingly available. Recently a major database corporation has announced a new application specifically designed to capture the *implicit* knowledge of an organization, as well as the usual data now collected.[62]

Secondly, it has an explicit focus on participation by all members of the organization. Task force members, for example, are required to download their experiences in a task force into the knowledge base before they are permitted to return to their positions in the hierarchical portion of the organization. Similarly, operations in the general hierarchy are required to interact through the knowledge base systems so that patterns in operations and actions are automatically captured for analysis.[63]

This participation obligation makes the field fertile for change agents who are there to help other members learn by doing and profit from the experience. They will also be able to innovate procedures and report ideas for improvements in processes and use. Because of the knowledge focus of this partner, the knowledge of the change agents also becomes entered into the system and available for integration into decisions.

Third, the "atrium" form is an explicit embrace of what has been called the "new knowledge management" and, as

such, can build on experiences in the private sector more clearly than vaguely stated "synchrony."[64] In particular, the new knowledge management means using network/web technologies to move from controlling information inventories as human relationship-based "controlled hoards" to web-based "trusted source" structures.[65] This approach faces considerable resistance because socially reconstructing knowledge from something to be hoarded for power within an organization to something to be shared to obtain and sustain capabilities is a significant transformation of expectations.[66] But when the Atrium experience is socially constructed by the combination of constant leadership support and effective change agents, entering into and interacting with the Atrium will be essentially going to work with a major player in the institution. Such a conception rationalizes the efforts to ensure implicit knowledge is integrated into the long-term analyses of the organization, such as the time spent in downloads of experiences and information from the task force members before they return to more hierarchical stem.[67]

Fourth, the characteristics of members from the surrounding community will make the Atrium increasingly feasible. Recruiting soldiers for this kind of a military will get easier and easier. The surrounding community is more familiar with, interested in, and able to use computers. Today's young people are more likely to be interested in an appropriately marketed "I-fighter" who is capable of a "hack-back" in defense of their nation. The current Israeli-Arab hacker war was started by just this kind of young people.[68]

Using Reserves as producers or contributors will immediately become simpler. A Reservist plugs in anywhere in the country and logs hours putting together data displays or mining topics as needed. Reservists are then more able to integrate into the force when needed because they have been studying real data really used and actually needed.

FINAL COMMENTS

To make this transformation, a first step is to view organizations as large-scale systems prone to rippling effects when relevant knowledge is not present.

Focus on Knowledge-based Structures and Operations.

Channeling the future military evolutionary path needs to have a goal in sight that explicitly accommodates this central characteristic. An Atrium-based military provides that clarity and reorientation appropriate for an information age. It is an ideal type, an image that provides direction for a myriad of smaller decisions. As such, it is an improvement over the RMA and the oddly named "objective force" currently dominating U.S. Army thinking.

Channel Change with Eyes on the Long-Term Atrium-like Outcome.

In the longer run, complex systems are predictable only broadly in trends and a full-scale effort to implement the Atrium model will not exactly produce this vision. What it does produce, however, will be more knowledge-based and more adaptable to emerging circumstances than what is planned now.

Short-Term Change to Allow Innovators to Survive.

Organizational culture is built on shared daily practices. Changing that requires daily nudges by change agents, both *innovative individuals and innovative organizations*.

Nurturing innovative individuals requires immediate short-term changes to policy in two areas. First, incentives need to be initiated to protect, nurture, and publicly reward innovators and risk takers within the Army. One example would be to institutionalize a way to delete learning mistakes from an officer's record, such as allowing officers to

exclude one OER. Second, the Army needs to create incentives to protect, nurture, and publicly reward those who support the Army's innovators; for example, institutionalizing a way for senior officers to allow subordinate mistakes without themselves suffering career costs, and rewarding them for innovative subordinates—even if they are not always right. The path to successful innovation, and its rewards, needs to be more clearly articulated by the senior leadership who are themselves rated on how they selected, nurtured, publicly rewarded, and channeled change agents.

Nurturing innovative institutions requires a similar pair of incentives. First, the innovative institutions require sufficient charter and resources to accomplish their mission. A programmed set-aside of serious funds for innovative knowledge-based organizations and their tools needs to be created, with the intent that they will grow the Atrium military along the proper path in the future. They must also be allowed to experiment with rotating task forces, collecting data for mining, etc. Second, the Army needs to define incentives to traditional Army organizations that support the innovative organizations, and accept and employ their innovations. Unless the traditional organizations are motivated to help the innovative organizations, they will compete with them and eventually force them out or incapacitate them. The Army must incentivize the environment around the innovative organization.

A final note: the Atrium model is an ideal type. No complex system will produce exactly what we envision. However, as a clearly articulated ideal type, it serves as a guide, keeping the evolution on the proper path. Even an 80 percent solution in 20 years along this path is more likely to accommodate the surprises of a complex world than the path currently being pursued.

ENDNOTES - CHAPTER 4

1. Chris C. Demchak, "Watersheds in Perception and Knowledge," *Contemporary Security Policy*, Vol. 20, December 1999, p. 3.

2. See James Adams, *The Next World War: Computers are the Weapons and the Front Line is Everywhere*, New York: Simon and Schuster, 1998; as well as George Friedman and Meredith Friedman, *The Future of War: Power, Technology and American World Dominance in the Twenty-First Century*, New York: St Martin's Griffin Press, 1996.

3. See Department of Defense, Joint Chiefs of Staff, *Joint Vision 2010*, Washington, DC: U.S. Government Printing Office, 1997. (Hereafter *JV2010*.)

4. More precisely, this system of systems links four large networks for complete battlefield overview by the commander. The first is a sensor grid providing long range (up 300 km) realtime and detailed information streams. The second is an engagement grid with graphical realtime depiction of all elements of the battle, and refined trend analyses on the spot, presumably. The third is an enormous database grid providing query, drill down, summary, and push information in all directions of the command structure. The fourth is an offensive information operations network that enables the overt or covert destruction, disruption, diversion, intrusion, insertion, and inspection of the targeted organization's use of information technologies. For elaboration of these concepts, see *JV2010*; David C. Gompert, *et al*., "Right Makes Right: Freedom and Power in the Information Age," McNair Paper 59, Washington, DC: National Defense University, Institute for National Strategic Studies, 1999, p. 34; Patrick D. Allen and Chris C. Demchak, "An IO Conceptual Model and Application Framework," *Military Operations Research Journal*, Special Issue on Information Operations/Information Warfare, Vol. 6, number 2, 2001.

5. See Frances Cairncross, *The Death of Distance: How the Communications Revolution Will Change Our Lives*, Cambridge, MA: Harvard Business School Press, 1996.

6. See Adams.

7. Likely effectiveness (F) of an organization is defined as the level of "systems fit" between the precision requirements built into the system and the surprise potential inherent in the level of unknowable or knowable unknowns, extant coordination of activities through knowledge exchange, and the validity of the information exchanged for the situation at hand. For a discussion of "systems fit" and effectiveness,

see Michael Harrison, *Diagnosing Organization: Methods, Models, and Processes*, Beverly Hills: Sage Publications, 1987, p. 8. For a discussion by a panel of organization scholars which placed effectiveness as one of the key components of productivity, see *Organizational Linkages: Understanding the Productivity Paradox*, Douglas H. Harris, ed., Washington, DC: National Academy Press, 1994, p. 8. The definition of effectiveness is always under debate among both practitioners and scholars, especially in security studies and defense policy debates, due to the material and human costs of mistakes.

8. Elsewhere I have defined effectiveness (F) in web-related organizational terms as the least constrained systems fit between the coordination of activities through knowledge exchange and the validity of the information exchange. See Demchak, 1998; and CyPRG web site, *www.cyprg.arizona.edu*.

9. Published statements of expected outcomes by senior leaders, given sufficient emphasis through a large organization, are powerful influences on the social constructions of reality emerging in the rest of the organization. Anne L. Schneider and Helen Ingram, "How the Social Construction of Target Populations Contributes to Problems in Policy Design," *Policy Currents*, Vol. 3, February 1993, p. 1. For the emergent model, I draw primarily upon the expected characteristics of the new information technology military as stated by the U.S. Joint Chiefs of Staff (JCS) and by the subordinate services.

10. For example, the human-machine interface under rapid fire conditions is exceptionally tricky. For example, humans with linguistic and psychological filters different from programmed applications and digital machines interpret and absorb graphical information more rapidly and accurately than they do text data. Machines are comfortable with both but cannot do the out of the box interpretations needed to make the output adapted to emerging circumstances. The organization design literally needs to time shift human interpretations in some way so that competing complex decisions are presented in ways that humans can most readily understand; usually this means in advance.

11. See James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It*, New York: Basic Books, Inc., 1989; Drucker, 1959; Peter F. Drucker, *Technology Management and Society*, San Francisco, CA: Harper and Row, 1959; and *The Development of Large Technical Systems*, Renate Mayntz and Thomas P. Hughes, eds., Boulder, CO: Westview Press, 1988.

12. Locus of control and the effects of machine requirements for formal rationality are central concerns of this field as well. For an

introduction to the field and to further references, see Sheila Jasanoff, Gerald E. Markle, James C. Peterson, and Trevor Pinch, *Handbook of Science and Technology Studies*, Thousand Oaks, CA: Sage Publications, 1995; Carl Mitcham, *Thinking Through Technology: The Path Between Engineering and Philosophy*, Chicago, IL: University of Chicago Press, 1994; and J. Summerton, ed., *Changing Large Technical Systems*, Boulder, CO: Westview Press, 1994. See also Urs Gattiker, *Technology Management in Organizations*, Newbury Park, CA: Sage Publications, 1990; Luis R. Gomez-Mejia and Michael W. Lawless, eds, *Organizational Issues in High Technology Management Monographs in Organizational Behavior and Industrial Relations*, Vol. 11, Greenwich, CT, and London, England: JAI Press, Inc., 1990; and Jon Clark, Ian McLoughlin, Howard Rose, and Robert King, *The Process of Technological Change: New Technology and Social Choice in the Workplace*, Cambridge, United Kingdom: Cambridge University Press, 1990, for a discussion of technology in organizations.

13. See Gene I. Rochlin, "Broken Plowshare: System Failure and the Nuclear Power Industry," in J. Summerton, ed., *Changing Large Technical Systems*. Boulder, CO: Westview Press, 1994, pp. 231-261, for a discussion of this kind of outcome in the nuclear power industries of Europe.

14. See Wiebe E. Bijker, Thomas P. Hughes, and Trevor J. Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, Cambridge, MA: The MIT Press; Mayntz and Hughes; and Jasanoff, *et al*.

15. See Todd R. LaPorte, ed., *Organized Social Complexity*, Princeton, NJ: Princeton University Press, 1975; Charles Perrow, *Normal Accidents: Living with High Risk Technologies*, New York: Basic Books, 1984; Paul Bracken, *The Command and Control of Nuclear Forces*, New Haven: Yale University Press, 1983; Chris C. Demchak, *Military Organizations, Complex Machines: Modernization in the U.S. Armed Services*, Ithaca, NY: Cornell University Press, 1991; and Scott D. Sagan, *The Limits of Safety: Organizations, Accidents and Nuclear Weapons*, Princeton, NJ: Princeton University Press, 1994.

16. These are, for example, air traffic control organizations, U.S. Navy nuclear carrier air operations, and nuclear power generating plants. See Todd R. LaPorte and Paula Consolini, "Working in Practice but Not in Theory: Theoretical Challenges of 'High Reliability' Organizations," *Journal of Public Administration Research and Theory*, Vol. 1, January 1991, pp. 19-48.

17. One form of accommodation is extensive preparatory testing that reveals the form and frequency of previously unknown outcomes. Unfortunately, this testing is normally extraordinarily expensive and, as a result, rarely done. See Demchak, 1991.

18. See Demchak, 1991, for a more extensive discussion with application to the U.S. Army and for better discussion of organizations and various aspects of responses to technology, especially knowledge and information processing, as well as the validity of this method. See Wohl, 1980, for a discussion of how, in a complex system, the proportion of these unknowable outcomes will be high compared to a more simple system. See Heimann, 1993, for a discussion of how component reliability contributes to the system's overall ability to avoid errors. See also LaPorte, 1975; Dan S. Felsenthal, "Applying the Redundancy Concept to Administrative Organizations," *Public Administration Review*, Vol. 40, May-June, 1980, pp. 247-252; Harrison; and Gareth Jones, *Organizational Theory*, Reading, MA: Addison-Wesley Publishing, 1995, for discussions of the organization literature and concepts key to this discussion.

19. While fully aware of the oversimplification of the measure and that a healthy statistical literature on sensitivity analysis exists, I have nonetheless proposed a simple measure of possible changes in robustness as the multiplication of redundancy by slack. Intuitively appealing, the term rises or falls as the combination of redundancy and slack rises and falls. If system A has high slack and low redundancy, and system B has low slack and high redundancy, then it is intuitively clear that both could have the same level of robustness. The processes resulting in robustness vary considerably, and more needs to be known about both systems and the slack or redundancy at their critical nodes. This measure is extremely rough but heuristically useful for focusing on the relationships between complexity and robustness via redundancy and slack. See Demchak, 1991. Editor's Note: In this case "slack" means having a system with excess capacity available to deal with unexpected demands.

20. See Demchak, 1991.

21. Chaos theorists start with an equation and watch the outcomes to discern the rule changes over time. Complexity theorists set up the rules for change and then watch the outcomes to see if any general unifying relation or equation is at work. See James Gleick, *Chaos: Making a New Science*, New York: Viking, 1987; and Ralph Gomory, "The Known, the Unknown and the Unknowable," *Scientific American*, Vol. 272, No. 6, June 1995, p. 120.

22. See Gleick; Gomory; and John Horgan, "From Complexity to Perplexity," *Scientific American*, Vol. 272, No. 6, June 1995, pp. 104-109.

23. See Emery Roe, *Taking Complexity Seriously: Policy Analysis, Triangulation and Sustainable Development*, Boston: Kluwer Academic Publishers, 1998, for a discussion of how taking complexity seriously has profound implications for social interactions.

24. See Efraim Turban, Ephraim McLean, and James Wetherbe, *Information Technology for Management: Making Strategic Connections for Strategic Advantage*, 2nd ed., New York: John Wiley & Sons, Inc., 1999, p. 530.

25. See John Casti, *Complexification: Explaining a Paradoxical World through the Science of Surprise*, New York: Harper Perennial, 1995; M. Mitchell Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos*, New York: Simon and Schuster, 1992; and Demchak, 1991.

26. Department of the Army, "The Army Posture Statement," Washington DC: U.S. Government Printing Office, 2001, p. 1, *http://www.army.mil/aps/aps toc.htm*. (Hereafter APS.)

27. *Ibid*., p. 4.

28. *Ibid*., p. 6.

29. Department of the Army, *Army Vision*, Washington DC: U.S. Government Printing Office, 1999, p. 1, *http://www.army.mil/armyvision/armyvis.htm.* (Hereafter AV.)

30. Department of the Army, *Army Transformation Statement*, Washington DC: U.S. Government Printing Office, 2001, p. 4, *http://www.army.mil/usa/Cover.* (Hereafter AT.)

31. The transition is expected to take 30 years with the first Objective BCT fully "procured" by 2010 and the whole force in place by 2032. See AT, pp. 8-13.

32. For complementary discussions of this problem, see Karl E. Weick, *The Social Psychology of Organizing*, 2d ed., Reading, MA: Addison-Wesley, 1979 <1969>; Demchak, 1991; and Jay R. Galbraith, *Organizational Design*, Reading, MA: Addison-Wesley, 1977.

33. Colonel Trevor N. Dupuy (retired), *The Evolution of Weapons and Warfare*, New York: DaCapo Press, 1984, pp. 305+, has offered the

following necessary circumstances for military change driven by technology. For final incorporation into the military operations, the new technology has to be seen, a) to fit successfully with the accepted doctrine and extant other weapons, b) to demonstrate in some manner a flexible and effective use in the offense, c) to be operationally effective against known countermeasures, and d) to offer a persuasively large decline in casualties for the using force and/or comparable or greater increases in likely enemy losses.

34. *Ibid.*, pp. 305+.

35. The Gulf War is heralded as the first "electronic war," but there is serious critique of this public claim. We might argue instead that the first really electronic war is happening as we write in the widening hacker war between the Israelis, Palestinians, and ideologically motivated groups who are pitching in. See Carmen Gentile, "Hacker War Rages in Holy Land," *Wired*, November 8, 2000, p. a; Carmen Gentile, "Israeli Hackers Vow to Defend," November 15, 2000, p. b; Carmen Gentile, "Palestinian Crackers Share Bugs," December 2, 2000, p. c.

36. See Adams; James F. Dunnigan, *Digital Soldiers*, New York: St. Martin's Press, 1996; and Friedmann and Friedmann.

37. Demchak, 1999.

38. See David A. Nadler, *Champions of Change: How CEOs and Their Companies are Mastering the Skills of Radical Change*, San Francisco: Jossey-Bass, 1997, for a recent nonacademic discussion of these tenets of organizational change. See also Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military*, Ithaca, NY: Cornell University Press, 1991, for a restatement of these tenets, as well as my own work on the Army undirected changes due to technology in Demchak, 1991. Elsewhere, see John Scott, *Social Network Analysis*, Thousand Oaks, CA: Sage Publications, 1991, for a review of the organization theory literature including this aspect of change.

39. Turban and Wetherbe, chap 4.

40. Admiral William A. Owens, Keynote Speech at the 63rd Military Operations Research Society Symposium, Annapolis, MD, June 1995.

41. Chief of Staff of the Army, Army Leadership Survey: Command and General Staff College Survey of 760 mid-career Students (Majors with a Few LTCs), 1999, *http://d-n-i.net/FCS_Folder/leadership_comments.htm*.

42. See Michael Vasu, Debra W. Stewart, and G. David Garson, *Organizational Behavior and Public Management*, 2nd ed., New York: Marcel Dekker, Inc., 1990; Margaret Kilduff and Doug Blewett, *The Technology Gauntlet: Meeting the Challenges of Workplace Computing*, Reading, MA: Addison-Wesley Publishing, 1994.

43. Chief of Staff, Army Leadership Survey.

44. *Ibid*.

45. *Ibid*.

46. Billy E. Deams, "A Noble Act Gone Unnoticed," *Styles Magazine*, Building Industry Association, September 1997, *http://www.biaow.org/styles/sept97/sec_opin_billy.html*, 1997; Jamie McIntyre, "Air Force Chief May Quit Over Saudi Bomb Probe," CNN Interactive, June 26, 1997, *http://www.cnn.com/US/9706/ 26/fogleman/*.

47. Bob Killebrew, e-mail exchanges reported on *http://www.infowar.com/iwftp/cspinney/c282.txt*, 1999.

48. Vernon Pizer, *The United States Army*, New York: Praeger Press, 1967, pp. 38-39.

49. *Ibid*.; Russell F. Weigley, *History of the United States Army*, 2nd ed., Bloomington, IN: Indiana University Press, 1984, pp. 537-540.

50. Chris C. Demchak, *War, Technological Complexity and the U.S. Army*, Berkeley, CA: University of California Berkeley Political Science Dissertation, 1987, Appendix B.

51. Hawkins, 1997.

52. *Ibid*.

53. *Ibid*.

54. *Ibid*.

55. Another RMA-based alternative has been proposed by Colonel Douglas MacGregor. The book's concepts of a future force have since been iterated by the author to focus on a light reconnaissance strike group (LRSG) as a central pillar of the new organization. See The MacGregor Briefings, Project on Defense Alternatives, Commonwealth Institute, Cambridge, MA, 2001, *http://www.comw.org/pda/macgregor/* (hereafter PDA). The difficulty with this concept of a future military is that it is addressing deployment, not data mining, and

combat, not knowledge consumption or production. It may, however, function as an interesting subordinate model for the combat forces of the Atrium military.

56. Ikujiro Nonaka and Hirotaka Takeuchi, "A New Organizational Structure" (HyperText Organization), in Laurence Prusak, ed., *Knowledge in Organizations*, Boston: Butterworth-Heinemann, 1997, pp. 99-133. Originally it was called "A Dynamic Theory of Organizational Knowledge Creation," *Organization Science*, Vol. 5, February 1994, p. 1.

57. To carry this further, wisdom might be said to be the decisions based on this knowledge. In any event, I am grateful for Dennis A. Lowrey, a former senior MI officer and chief "wirehead" who played a role in the sophistication advances of the U.S. Army's military intelligence community in the 1990s.

58. Nonaka and Takeuchi.

59. Single loop learning is where one seeks feedback from a monitor and then learns how to do better according to that monitor. Double loop learning occurs when shortcomings and the value of the monitoring tests are all questioned.

60. In a manuscript under construction now "The Atrium—Refining the HyperText Organizational Form," I more fully explain the mechanisms of integrating an Atrium into an organization.

61. "Japanese Government on Alert for Chinese Computer Hackers," Kyodo News Online (KN), February 26, 2001.

62. Bender Corporation, "Know Thyself" (Lotus innovates implicit data mining tool), *Technology Review Online*, April 6, 2001.

63. See Nonaka and Tageuchi, pp. 99-133.

64. See Margaret J. Wheatley, *Leadership and the New Science*, San Francisco: Boerrett-Koehler Publishers, 1992, as well as Gleick for a more modern use of this term.

65. The evolution of the internet or the worldwide web is in essence a social history of information sharing among individuals embedded in organizations. There are a number of versions of the history of the internet. See Michael Benedikt, ed., *Cyberspace: First Steps*, Boston, MA: MIT Press, 1991, for one discussion. See also the Internet Society web site.

66. In organizational terms, especially for public organization, a webbed approach to information directly challenges the long-established notions of the fundamentals of bureaucratic power. Weber's sociological argument about such power, translated in the 1940s, was further symbolically captured by the 1970s concept of an "iron triangle" in which public agencies, Congressional committees and interested corporate entities controlled outcomes nearly absolutely by controlling the information anyone outside the organization could acquire.

67. See Thomas H. Davenport, *Information Ecology*, New York: Oxford University Press, 1997; and Charles Savage, *The 5th Generation Management*, Butterworth-Heinemann, 1996, for interesting variations on these notions of integrating the web into the organization's and society's critical operational information flows.

68. IDefense, *Special Report Data on Isl-Pal Cyber War*, iDefense Intelligence Services Online, January 4, 2001.

CHAPTER 5

WHAT DO WE REALLY KNOW ABOUT AN UNCERTAIN DOD BUDGET?

Leslie K. Lewis[1]
Roger Allen Brown

Introduction and Background.

When we began to write this chapter in January 2001, we hypothesized that by the end of February the Department of Defense (DoD) would have a general understanding of the U.S. defense agenda of the next 4 years—"increase combat readiness." The services concluded that, although the exact details of the Bush agenda would still have to be laid out, President George W. Bush would hold to his campaign promise to increase the defense budget by about $45 billion dollars over the next 10 years from the current budget of $30l billion in 2002. In anticipation of the increases in the 2002 defense budget, each service began to compile its individual wish lists. The lists included new and upgraded equipment, increases in end strength, and improvements to the quality of life—housing, health care, and pay. To underpin these goals, the services then appealed directly to the Congress and further pressed their cases for increases in defense expenditure with little or no deviation from current investment plans. They hoped to build on the "general bipartisan consensus that the military is underfunded." To further solidify their respective positions (while standing "shoulder-to-shoulder"), the services and Joint Staff developed a Quadrennial Defense Review (QDR) strategy supporting increases in defense expenditure for their various initiatives.[2] The services' and

Joint Staff's QDR strategies argued that DoD's transformation is occurring at about the right pace, but additional funding will be needed to meet current operational requirements while continuing individual service transformations with minimum risk.

To bolster the beliefs that national defense is severely underfunded, the services and Joint Staff identified dollar shortfalls in a number of areas. For example, the Navy asserts that, for current ship and aircraft repair and spare parts, it is underfunded by approximately $2 billion. The Air Force argues that it might have to decrease its flying hours without a substantial budget increase. The Air Force's spare parts and fuel bills total about $1.4 billion over budget in the current year. Its F-22 procurement program continues slipping to the out-years of the defense program.[3] The Army is focused on its transformation and says that it needs about $2.6 billion in 2001 to continue to meet its goals of moving from a heavy Cold War force to a lighter, more deployable, interim medium force.

In late 2000, DoD expected to request a $5 billion supplemental to the 2001 Budget to meet rising costs for fuel and to pay for ongoing contingency operations. The supplemental request included $1.3 billion for the flying hour accounts, $1.4 billion to address increases in health care costs, and $500 million for fuel price adjustments. Another $200 million was tagged for ship construction costs, while $500 million is for congressionally-approved benefits for which no funding was provided. An additional $100 million was allocated for repairs to the USS *Cole*, and $400 million for Army base operations costs.[4]

However, by early February it became clear that the new Secretary of Defense (SecDef) Donald H. Rumsfeld was not necessarily going to adhere to the services' and Joint Staff plans. First, he reprimanded the service chiefs for "end running him and going to Congress." Then he and Bush indicated that there would be no request for additional funding to the 2001 defense budget until a broad

assessment of the military had been completed. In mid-February 2001 he tasked Andrew Marshall, Director of the Net Assessment Office, to do a strategy review and to complete it by the end of March 2001. In early March the SecDef stood-up multiple task forces or panels to assess such areas as (1) transformation, (2) quality of life and morale, (3) strategy, (4) acquisition, (5) conventional forces, (6) processes and organization, (7) strategic nuclear forces, and (8) others—not all of the subject areas are publicly known but some sources quote a total of 18 task forces or panels working within the review.

This chapter has undergone several revisions to track the developing reengineering of the DoD. In late March, Marshall revealed that U.S. defense policy needed to be refocused on the Pacific Rim, away from Russia and Eastern Europe, on the belief the decline of Russia has provided an opportunity for China to play an increasing independent role in Asia. There was also some hint that the two Major Theater War (MTW) strategy would be reviewed and at least partially modified. Rumsfeld has hinted that an increase in defense expenditures will probably be necessary.

There is no clear consensus concerning how to fix defense resources in order to meet operational demands while achieving a mostly undefined transformation. Some defense analysts argue that, regardless of what funding Rumsfeld requests, defense expenditures will increase because Congress voted to raise the budget by approximately 5 percent, or about $14 billion, in 2002. Critics of the legislation argue that passing budget increases without strong guidance from the administration on the role of and vision for the military will only enable the Services to continue funding Cold War weapons and practices.[5] Others argue that, even with some divestiture of Cold War legacy systems, the DoD will have to have substantial increases in the defense budget in order to meet its personnel and operations requirements.[6] Michael O'Hanlon contends that with significant divestiture of Cold War systems and taking

advantage of the strategic pause to develop leap ahead technologies, the DoD could save at least $10 billion. The budgetary requirements and budgetary resource gap could be overcome, but it will require a well-defined strategy.[7]

Integral to any new strategy is the development of new concepts of operations. For example, another round of base closures and rethinking the U.S. forward posture would be essential. Others argue that any DoD transformation funded within the current $314 billion top line must address some highly political and emotional issues. Some controversial topics, such as the Marine Corps giving up bases on Okinawa along with one or two Marine Expeditionary Units (MEUs), and considering forward stationing for the Navy, wherein crews would rotate while the ships stay in a relatively limited geographic area, in order to gain substantial savings from limiting ship investment, will need to be addressed.[8] Other issues might be the divestiture of at least one fighter aircraft program and stopping the purchase of additional Navy large carriers, which are viewed by some as too vulnerable.

Others argue that regardless of directed changes in DoD investment, the DoD is heading for a train wreck. Daniel Goure and Jeffrey Ranney argue that the annual defense budget needs to be increased by approximately $100 billion in order to modernize, maintain, and sustain the 1997 QDR force.[9] Without substantial increases in the defense budget, the DoD will continually trade away procurement to meet near-term readiness. This is occurring during a period in which DoD equipment is at or soon to reach the end of its service life, and replacements have been slowed due to the services raiding procurement accounts to meet operational demands.

Little is known about what the strategic review encompasses except that it is thorough and will provide the foundation for the direction DoD will go over the next 4 years. More immediately, it probably will provide the basis of the SecDef's guidance to the services and the Joint Staff

for a pared down 2001 QDR. As this chapter is being written, a lot of uncertainty exists as to what the new administration will define as the new defense strategy and DoD's budgetary requirements. Whatever is decided, an assessment of the defense budget from the perspective of what is fixed—those expenses the DoD must meet in every budget—reveals that the interdependence of several key areas drives almost the entire defense budget. In early March Bush presented his budget to the Congress. He did lay out a roadmap for expenditure, but did not provide a lot of details. The underlying assumption of the budget plan is that the economy will continue to grow. Bush outlined several key areas on which he will focus on next year. The first priority is the tax cut with the underlying premise being that the budget surplus should be redistributed to the American people. The tax cut proposal is predicated on the belief that government spending increases can be held below 6 percent over the next 10 years.[10] The second priority that the President identified is education. He also wants increased attention and resources provided to science and math training, the establishment of rigorous national education standards, and a voucher plan for alternatives to failed schools.

The rest of this chapter explores various areas of the DoD budget in an attempt to assess what elements of the budget provide the most latitude for change/transformation within the DoD, and those that will constrain change.

The Defense Strategy.

Few defense analysts acknowledge that the defense strategy is fiscally constrained. Many assert that a nonfiscally constrained strategy should be used to define the roles and missions of the military. Nothing could be further from the truth. For example, in 1993 the Bottom-Up Review's (BURs) initial findings supported the need of the United States to perform two simultaneous MTWs. This objective proved to be too expensive given the Clinton

administration's desire to reap the peace dividend. The BURs findings were adjusted to state that the sizing mechanism for the U.S. military would be its ability to conduct two nearly simultaneous MTWs. This strategy has driven the defense budget for the last 8 years. The BUR also asserted that, as long as the U.S. military was prepared for a strategy based on the two nearly simultaneous MTWs, it would have sufficient resources to conduct any type of lesser operation that it might be asked to do. The problem is that the strategy is underpinned by the erroneous belief such a robust force could also handle a wide array of contingency operations. In other words, if the U.S. military planned for the large-scale war—such as the Gulf War—then its capabilities would be more than sufficient to handle any other type of contingency.

The BUR strategy did not consider that peacekeeping, humanitarian, and coalition operations in the post-Soviet Union environment might require different types of capabilities and a lot of tailoring of the existing ones.[11] In 1993, the U.S. military was involved in few such operations. The BUR strategy does not provide a "forcing function" to move some of the services to develop new concepts of operations and all services to divest themselves of legacy systems. Although there have been some changes in the services' practices brought on by the defense budget dropping approximately $100 billion dollars (in 2000 dollars) from $382.5 billion to $279 billion, basically the DoD of today looks like a smaller Cold War force. Although the BUR strategy does not provide the DoD with sufficient flexibility to meet its highest probability missions, it is the foundational piece that the Army (and until recently the Air Force) uses to argue both its force size and structure.[12]

The two-MTW strategy has been deemed affordable at about $230-$260 billion—the defense budget between 1992 and 2000. The problem with this approach is that many contingency operations do not adhere to the rigid assumptions that are derived from the BUR.[13] For example, increasingly, contingency operations require different

tooth-to-tail ratios, a great deal of tailoring, and a wide variety of capabilities. Frequently, U.S. forces are being asked to operate in regions with little or no developed infrastructure and very weak governments. These assumptions are driven by the existing strategy.

Recent work at the National Defense University (NDU) explicitly attempts to fiscally inform the defense strategy. The QDR 2001 Working Group was chartered by the Chairman, Joint Chiefs of Staff (CJCS), to develop different defense strategy options, the criteria for sizing the conventional forces, and the identification of the required capabilities to support each proposed option.[14] The assessment sought to identify the types of missions that the U.S. military might be asked to perform in the next 10 to 20 years. The QDR Working Group developed four defense strategy alternatives. The four strategies span the spectrum from:

1. Maintain the current defense strategy,

2. Engage more selectively and accelerate transformation,

3. Engage more selectively and strengthen warfighting capability, and finally,

4. Engage today to prevent conflict tomorrow.

Each of these defense strategies suggests a different defense budget and investment strategy. For example, Strategy 2, *Engage More Selectively and Accelerate Transformation*, suggests that U.S. military investment should be focused on leap-ahead capabilities while only becoming enmeshed in contingency operations that are judged to be critical to our national well-being. The strategy also suggests that the DoD should divest itself of most Cold War legacy systems. The services fought hard against any potential findings that they felt challenged their current force structures and investment plans.

If the SecDef should choose one of these defense strategies or develop a hybrid, the defense strategy will provide the guidelines for sizing of the defense budget. This is in spite of the National Defense Panel (NDP), the group appointed by Congress to review the 1997 QDR report, noting that the defense strategy should not be a force-sizing mechanism. The Defense Science Board (DSB) on DoD Transformation made similar findings.[15] Nonetheless, few attempts have been made by the services, especially the Army and Air Force, to move away from the defense strategy as being the sizing mechanism for their forces. The force sizing assessments are usually based on minimizing the risk to the United States and its allies, but risk is never defined nor is it quantified. Whatever the new defense strategy, the SecDef and his advisors must accept that some of the services will attempt to use it as a sizing mechanism. The strategy will provide the first indicator as to what the Bush defense agenda could cost. The new strategy must provide some clear guidance on the DoD's investment priorities and how these priorities will be met. If the priority is to increase U.S. investment in Homeland Defense and National Missile Defense, then the SecDef must provide some strategic guidance on the resource options and the trade spaces.

Indications are that the Bush administration will at least modify the defense strategy to accommodate missile defense. The new strategy might call for a single MTW requirement combined with multiple contingencies. But whatever the new strategy, it must be sufficiently defined so that it establishes the parameters on how the priorities will be set for the defense budget.

Resource Drivers in the Defense Budget.

Many people believe that the defense budget's major resource allocation is for operating costs or what is also termed the numbers, types, and readiness levels of DoD's forces. Others believe that modernization and procurement

are the major resource drivers, while still others contend that support and infrastructure that include such areas as civilian pay, military medical care, and family housing are the largest cost drivers. Importantly, these elements are all interrelated, and an assessment is needed to better understand how these areas interact. The assessment reveals some of the constraints and hard choices faced when trying to develop savings within the DoD budget.

Assessing the FY 2002 Defense Budget by the six major appropriations (i.e., Military Personnel [(MILPERS], Operations and Maintenance [O&M], Procurement [PROC], Research and Development [R&D], Military Construction [MILCON], and Family Housing Accounts [FHA]), it is not a surprise to find that the O&M account is the largest at 37 percent. The O&M account includes the bulk of civilian pay and the consumables that support operations and training. Also, it should be noted that Military Personnel, at about 26 percent of the total, is the second largest account and primarily covers pay for Active and Reserve military personnel. Figure 1 shows the breakdown by these six principal appropriations and their respective percentages of the total FY 2002 Defense

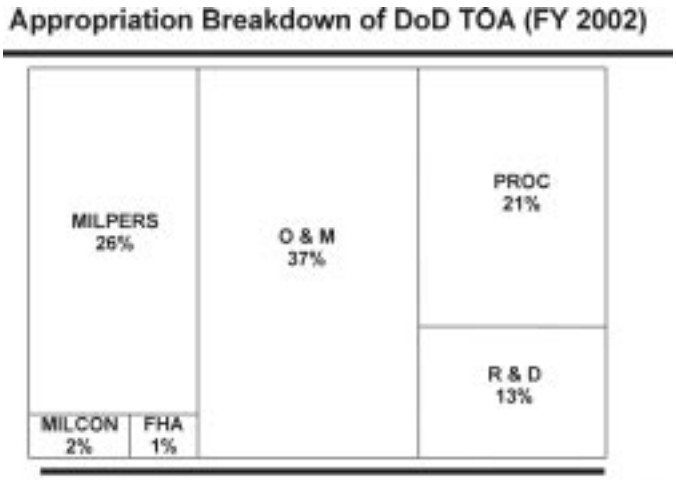

Figure 1. Appropriation Analysis.

Department budget.[16] While this gives some direct insights as to the general uses of the defense resources, further analysis is necessary to relate these appropriations to the resources that support major defense functional categories.[17]

We have chosen three sets of major functional categories often used as the targets for defense resource reductions for examination. These are Force Structure and Readiness, Modernization, and Infrastructure and Sustainment. Those familiar with defense activities will recognize the difficulties in further separating these categories into their constituent elements. Force structure provides little utility unless it is ready for use, and the services promote the highest readiness objectives for their mission forces; the result being that readiness is inexplicably linked to force structure. Similarly, service infrastructure is the foundation for their respective abilities to sustain capabilities, forces, and institutions. In the following figures we examine the magnitude and makeup of resources associated with each of these functional categories.

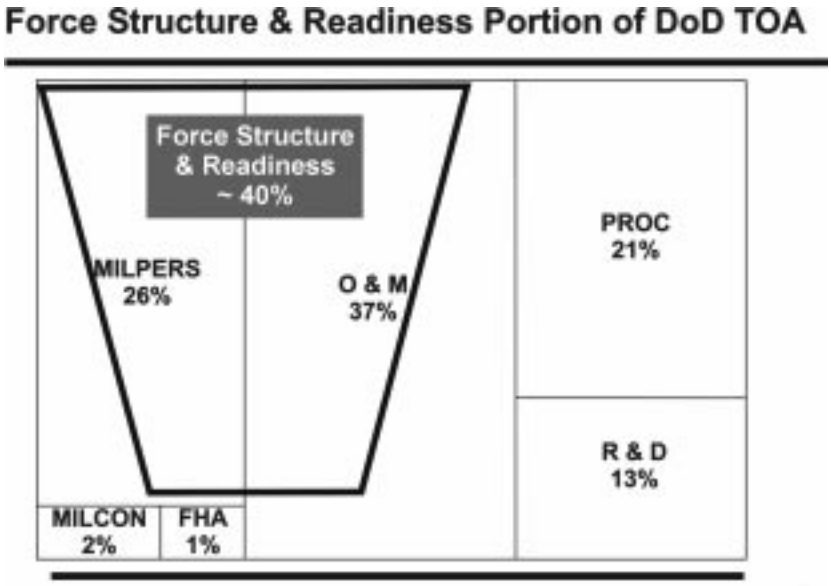

Figure 2. Force Structure and Readiness Overlay.

Figure 2 shows how force structure and readiness are funded principally in two of the major appropriations: Military Personnel and O&M.[18] This is due to the major components of those functions being tied to pay of military members assigned to units in the force structure (this component of resources is often referred to as military end strength but is more aptly represented by person-years) and the consumables, such as fuel and spare parts, that support unit operations and training. Savings from force structure reductions with their consequent cuts in military personnel are generally estimated to be on the order of $40,000-45,000 per person-year including pay, entitlements, and an apportionment of O&M for reduced training expenditures. Cuts in military personnel are useful in that they affect both the year of execution and all succeeding program years where the person-years are reduced. Since reductions in military personnel are usually effected by speeding up attrition through "early-out" programs and reductions in accessions, the initial year of any planned end strength reduction usually yields only about one half of the person-year savings that are achieved in the succeeding years. Large reductions in military personnel require several years to effect due to the need to assure appropriate skill mixes and experience levels are retained. Direct cuts in readiness resources, such as suggested by Senator John McCain in 1996 by implementing "tiered readiness" for major force elements, are difficult to achieve in practice since they would suggest that some of the active forces would not be ready for employment on short notice.[19] The Air Force with its Expeditionary Aerospace Force concept is moving in this direction; the Navy and Marine Corps have adopted this concept. Such readiness reductions traditionally have been strongly resisted by the Chairman of the Joint Chiefs of Staff, the service Chiefs, and the Commanders-in-Chief of the combatant commands. Historically, other efforts at direct reductions to readiness resources, which reduce training time and degrade unit effectiveness, have not been easily applied, especially by the Army. Hence, the only way to effectively gain large savings

from readiness is to eliminate the demand for readiness resources. This can be accomplished by eliminating major force elements, such as Army divisions, Air Force air wings, Navy ships, and Marine brigades, since units taken out of the force structure will not need to expend their training and operations resources. Reducing major force elements also provides an opportunity to take person-year reductions, which are generally of higher values than readiness reductions alone.

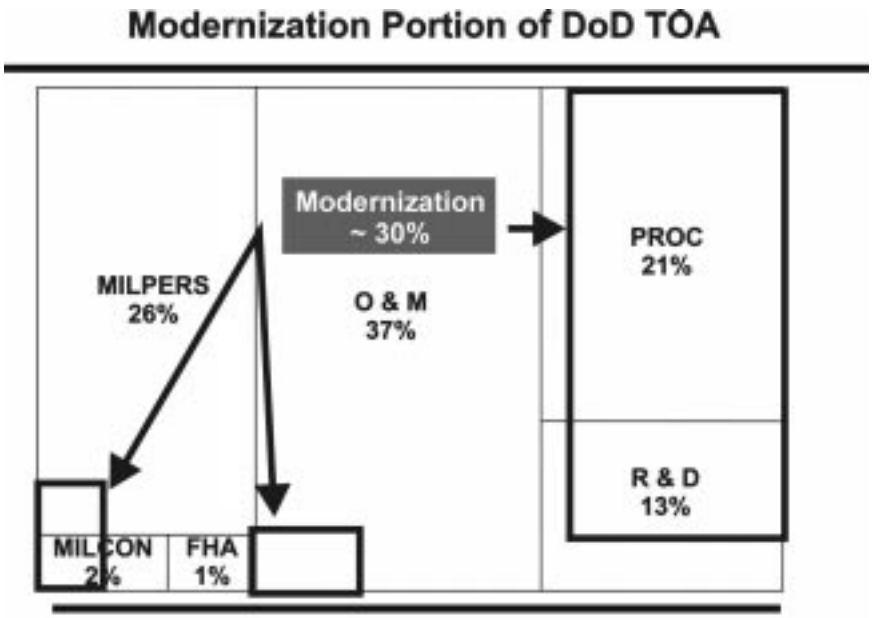

Figure 3. Modernization Overlay.

Figure 3 shows those appropriations associated with defense modernization activities. Modernization requires resources primarily from five of the appropriations. Procurement and R&D are the largest appropriations for this activity as they cover the development and production costs of new weapons systems. Few people realize that the

Military Personnel, Operations and Maintenance, and Military Construction appropriations also support service modernization. The MILPERS covers those individuals involved in acquisition; MILCON funds those facilities required to support the fielding of new modern weapons systems such as aircraft shelters, runways, and maintenance buildings; and the O&M resources support operational testing requirements, provision of spare parts, new equipment training teams that accompany fielding activities, and pay for civilians assigned to these activities. The cancellation, delay, or reductions in quantities produced or capabilities of major service weapons systems that are in development or just beginning production and fielding usually effect the largest long-term reductions in the defense program. In the 1997 QDR, the SecDef decided to reduce the total number of aircraft in the F-22 fighter program. This decision was a reduction taken at the end of the production program; hence the savings achieved were only in the out-years. To achieve savings in the near-term years in modernization, entire programs must be terminated. This can be achieved either by stopping a system during development or ending production of a fully developed system.

Modernization provides a direct contribution to the fielding of new and enhanced capabilities. Killing systems in development, delaying their development, slowing or ending production may result in the lack of needed capabilities that risk the loss of future advantages for our military forces. Hence, decisions to foreclose future capabilities are often difficult to effect with any finality; several systems have received new life in subsequent years after they were cancelled when new administrations or defense leaders become responsible for reconsidering these decisions. Program termination decisions have generally resulted in the requirement to pay termination costs that significantly reduce savings and eliminate all or a portion of a desired capability. Decisions to delay developments or reduce rates of production of weapons systems generally

increase the unit cost of each remaining system in the program. Hence, the savings from these types of decisions are usually of less overall value and not realized until later in the program out-years. Most decisions affecting modernization programs very often incur some level of resistance or wrath from the affected industries and their congressional sponsors and these reactions usually increase in intensity with a system cancellation. Another consideration in taking reductions from modernization is their effects on the defense industrial base. With the many consolidations of defense companies over the past decade, there are fewer companies to compete for defense contracts. The loss of on-going business through program kills, delays, or reductions may adversely affect future defense industrial capabilities. The lesson learned from reviewing recent history appears to be that new administrations should cancel modernization programs early in development and early within their terms of office to have some assurance that these decisions would have some lasting effect and yield the desired resource savings.

There is an intertemporal interplay between modernization and readiness spending. Modernization is long-term investment and its outputs—equipments and capabilities—have long lives (with usefulness often debated). Postponing investment does not reduce the existing stock of capital except through the depreciation associated with wear and tear, and ultimately, obsolescence. Readiness is annual consumption of a commodity; the consequences of buying or not buying readiness have different consequences on the DoD.

Our third examination is of infrastructure and sustainment. Figure 4 shows the appropriations that are affected by infrastructure and sustainment. It reveals that that, due to their inherent crosscutting nature, infrastructure and sustainment affect all six of the appropriations. This functional category has been one of the most difficult in which to take timely reductions and achieve defense savings. In the 1990s, the congressionally approved

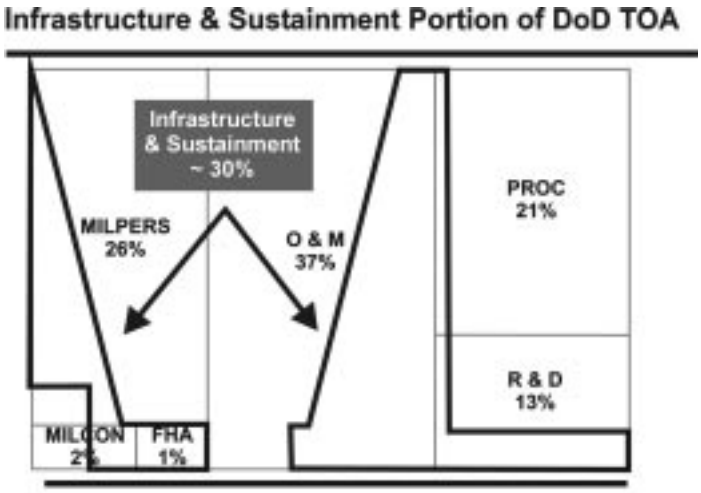

Figure 4. Infrastructure and Sustainment.

Base Realignment and Closure (BRAC) act was used to close excess or inefficient military bases and eliminate, consolidate, or transfer their related functions and military and civilian jobs. The BRAC process provided useful long-term reductions in military infrastructure while assuring needed sustainment capabilities and eliminated the potential for revisiting decisions in Congress once they were approved. Assuming congressional approval for additional rounds of BRAC authority, the primary difficulties of using this approach to achieve defense resource reductions are that there are high initial costs to close bases and assure necessary environmental clean-up, and the elimination of civilian jobs usually takes several years due to extensive protections for the civilian workforce. Thus BRAC savings are not generally achieved until 5 or more years after the closure is effected, and they are generally preceded by high up-front near-term costs. Another resource reduction area within infrastructure and sustainment is to reduce civilian jobs without the benefit of a BRAC to save the related costs from reduced civilian person-years. As mentioned earlier, reducing the civilian defense workforce seldom yields any saving until the second

or third year after a reduction decision is reached due to job protection laws and rules. The lengthy period to achieve such civilian reductions is another reason that such reductions need to be decided early in a new administration to assure they are fully effected.

Another area for potential savings in the infrastructure and sustainment category is to change the stock levels of sustainment items kept in the inventory, thus reducing the costs over time to care for items in supply and directly reducing costs for the replacement of supplies no longer stocked. This area of savings also takes several years to effect as the supplies already on hand must be lowered through consumption, and the costs of the supply inventory care and maintenance can be reduced only as efficiencies in storage can be achieved. The problem with using sustainment as a billpayer, at least for the Army and the Air Force, is that spares and depot reparables are already in low stock. These shortages are due to retention of legacy systems, increased use of equipment in operations, and the traditional use of these accounts by the services to pay other bills.[20]

Outsourcing or privatization of various logistics and installation functions, such as military family housing, has seen recent initiatives to reduce the infrastructure costs, but these have yielded only marginal benefits. Two other areas of infrastructure that may provide savings are reductions in recruiting and individual training that are strongly related to the size of the overall defense force structure, but reductions in force structure seldom produce commensurate reductions of the same proportion in training and recruiting infrastructure. Nearly the same institutional staffs and operating costs for these functions will be needed to handle reductions of throughput that are reduced by only 10-15 percent. Since the training base and recruiting structures must accommodate an interrelated seasonal personnel flow, direct cuts to either of these infrastructure areas will over time directly impact readiness of the forces. One area within recruiting that

some might suggest for reduction is the high cost of advertising, but few with any experience in accession management would consider such reductions effective since recruiting is and will remain a very competitive activity. Hence, one can expect to achieve significant savings from reductions in training base and recruiting infrastructures only with commensurate force structure reductions.

New Strategies and Additional Costs.

Although the defense strategic review is nearing completion, the new DoD roadmap remains to be fully defined. The Bush administration has already identified two objectives requiring increased expenditures: (1) increasing military pay, and (2) the development of a missile defense capability. The increase in military pay is also tied to improving housing and medical care for the active military. The President indicated that the military pay would increase about 5.3 percent (or 4.1 adjusted for inflation). The Congressisonal Budget Office (CBO) estimates of pay increases at a 1.5 percent increase per year over a 10-year period (adjusted from an actual percentage raise of 3.3 percent per year) would cost the DoD approximately $85 billion per year. The calculation is based on sustaining the force structure and end strength at approximately the same size.[21]

The administration has not been bashful about identifying a robust missile defense capability. As of this writing a missile defense architecture has yet to be identified; therefore, it is difficult to gage the exact costs. Many critics of missile defense argue that the technology necessary to support a full-scale missile defense does not exist yet. Currently there are three elements associated with missile defense:

1. The development and fielding of interoperable Theater Missile Defense (TMD) to protect U.S. forces and interests in theaters of operations;

2. The development of active defenses to protect the U.S. homeland against long-range missile threats—National Missile Defense (NMD); and,

3. The development of an advanced technology program.[22]

The TMD portion of the architecture consists of the higher and lower tiers and several interrelated systems. For example, the PATRIOT system (PAC-3) remains the foundational piece of the lower-tier theater missile defense. The system is currently being improved in the areas of interceptor performance and increased lethality. The PAC-3 improvements include the new PAC-3 hit-to-kill missile, enhanced remote launch, communications and computer/software improvements, and radar upgrades to improve tracking and targeting.[23] The upper-tier program is in competition between two systems: the Theater High Altitude Area Defense (THAAD) and the Navy Theater Wide (NTW). The goal is to achieve a quicker and more efficient capability. The architecture for the Upper Tier and an acquisition strategy have not been completely defined. Both the programs are being restructured to meet a 2007 date First Unit Equipped (FUE) and a phased capability approach. Another objective of the overall program is to reduce risk through phased funding.

The NMD portion of the program contains space and ground-based elements: sensors, interceptors, and associated Battle Management Command, Control and Communications capabilities. There has been no decision on when the system will be deployed, but much of it hinges on the technology and its reliability. Nonetheless, the NMD program is on a fast track because it is believed that there are sufficient threats from rogue nations to necessitate the development and deployment of the system. The goal is to deploy an initial NMD capability in fiscal year 2005. The DoD wants to include in this package approximately 20 interceptors. In 2007 the program plan calls for moving to an expanded-capability-one-architecture that consists of

approximately 100 interceptors. Estimated additional costs for these two phases (05 and 07) are approximately $6 billion dollars above the existing resources in the Future Year Defense Program.[24] Some defense analysts place the total costs of fielding a complete missile defense around $100 billion over the next 10 years; these estimates do not include sustainment costs.[25]

The issue facing the DoD is not only that the defense budget is not going to get substantially larger; it must also be able to pay for these new initiatives. Some analysts contend that another round of draconian cuts could provide sufficient monies to support the QOL and missile defense programs. Certainly another round of BRAC could provide about another $5.5 billion. However, the BRAC process takes about 2 years to complete, and savings would be garnered 3-4 years after the selected bases were closed, and all the up-front costs of closure were paid.[26]

Another way to assess where resources might be found to pay for new initiatives is to link investment to possible new strategies that might be adopted by the Bush administration. Four possible strategies have been identified that are worthy of examination: Transformation, Concurrent MTWs, SSC Focus, and Engagement. These strategies include ones that have been discussed at length within the national security community. For example, the NDU study looked at several of these strategies in their preparatory work for the QDR. Our examination of these strategies linked them to resources and forces, mission focus objectives, and transformation paths and their timing. Table 1 displays a short summary of each strategy.

Assumptions / Strategy	Resources & Forces	Mission Focus Objectives	Transformation Path & Timing
1 Transformation	Deemphasize Major Force Elmts Redistribute $ to Transformation	Homeland Defense Global Power Projection Force, Deemphasize MTWs	MMD, Leap-ahead Technology Transformation, Selective Mod., Power Projection
2 Concurrent MTWs	Flesh out current MTW Forces Obtain Additional Resources	Conduct MTWs & Homeland Defense Deemphasize SSCs	Continue Legacy Force Modernization, TMD, Slow Pace of Transformation
3 SSC Focus	Decrease Major Force Elements, Rely More on Allies, RC, Relocate Forces	One MTW coupled w/ multiple SSCs & Robust Forward Presence	Divest Heavy Combat Platforms Cyclical Readiness Silver Bullet PGMs Power Projection
4 Engagement	Modest Growth $ Decrease Major Force Elements, Rely More on Allies	Increased Global Engagement, More Forward Presence, Focus on SSCs	Transformation Focused on small regional conflicts Less Leap-aheads

Table 1. Major Assumptions for Strategies.

If the *Transformation Strategy* were adopted, several areas of divestiture could be readily identified. The first is that there would be a deemphasis on the major force elements with the savings redistributed to transformation. The transformation would include improving the quality of life of the current force, development of a missile defense capability and improvement of the U.S. ability to globally project power. If the United States decided to maintain its current course, force structure and modernization would continue at about the same rates as now. This strategy is called the *Concurrent MTWs Strategy*. In this strategy, there would be greater emphasis on ensuring that current forces are capable of supporting identified MTWs, while Smaller-Scale Contingencies (SSCs) would be deemphasized. Investment dollars could be spent on legacy force sustainment and modernization, TMD, and a very slow transformation that is only loosely defined. Table 1 summarizes the other strategies and their associated assumptions.

Few assessments of different strategies have examined resource impacts. Therefore, within the context of the defense appropriations we assessed what the implications

would be for on each of these four strategies. For example, if the *Transformation Strategy* were adopted, the force structure and readiness accounts would decrease. The DoD would divest itself of force structure in order to pay for modernization to support global power projection and the homeland defense mission. The reductions in force structure would also impact infrastructure and sustainment because less recruitment, individual training, housing, base support, and sustainment would be required of a smaller force. The *Concurrent MTWs Strategy* presents some anomalies. For example, if the Bush administration were truly interested in sustaining a two MTW capability, then there would have to be new concepts of operation that would improve the effectiveness of current force with near-term capability enhancements or some increases in force structure, the assumption being that the United States would need a larger force structure to fight two simultaneous wars. Investment would have to be reoriented towards ensuring that there is sufficient strategic lift for these missions and lethality for such a force. This implies that the United States would divest itself of many of the capabilities required for peacekeeping and humanitarian operations and eliminate those legacy capabilities not essential for the conduct of MTWs. The consolidation of the force around the MTW missions could also lead to the requirement for some unidentified decreases in infrastructure and sustainment resources.

Summary and Conclusions.

This brief examination suggests that early in a new administration's term, it must make fundamental decisions on the level of resources it will provide for national defense. The SecDef must also decide early in his term where reductions and efficiencies are to be taken from the existing forces, capabilities, and programs if there is to be any assurance that these savings can be realized. Lastly, with the interrelationship of many of the major functional categories discussed above, expectations for savings in the

initial years after decisions for reductions are likely to be only marginal. The fragmentation over time of the direct relationship between such things as force structure and infrastructure makes taking reductions and the realization of their immediate financial benefits extremely difficult.

This assessment begins to provide a basis for trade-offs and divestiture. The goals of investment and divestment must be structured within the strategy. The question that remains to be answered is affordability of any of the possible courses that the Bush administration might choose. It appears that regardless of what strategy is chosen, one needs a set of common resource "topline" assumptions for all alternative strategies. And it appears that regardless of the strategy there will have to be increases in overall defense expenditure to support new initiatives such as missile defense. Importantly, as one moves through the different strategies there is a need to relate characteristics and objectives of each alternative strategy to the resource drivers—force structure and readiness, modernization, and infrastructure and sustainment. Some examples of these characteristics and their interrelated nature are modernized legacy forces, advanced technology capabilities, and slow transformation. One common element integral to any strategy will be additional rounds of BRAC to reduce infrastructure and reductions in sustainment through new concepts that will assure very lean logistics. Another common area that will need to be explored for reductions is the role and size of the strategic nuclear forces and heavy conventional land forces. Depending on the strategy, these force elements provide some potential areas for reorientation and potential divestiture, but one must be clear on what is needed to assure a feasible strategy. For example, will lighter or medium forces replace heavy conventional land force? Will the costs associated with that force transformation be affordable in concert with other demands of the strategy?

The costs associated with defense will be further clarified through the priorities set for the missions in any

strategy that is adopted. The strategy must explicitly identify the required capabilities to support the missions and their relative priorities. Also there needs to be a clear identification of the resource priorities associated with a particular strategy. Once these decisions are made, transformation should be addressed within two contexts: relative priority of the required future capabilities and the schedule for their availability. This information will facilitate the identification of the resources necessary to achieve operational readiness and ultimately decide the feasibility of the strategy.

The strong link that we are suggesting between strategy and resources argues that alternative strategies can only be explored through a very systematic assessment of strategy, resource drivers, and identification of capability alternatives. The constant iteration of these elements provides defense strategists and resource planners a realistic way to evaluate current and future requirements. Some might argue that such an approach would hinder the ability to develop a pure strategy; we argue that the feasibility of the strategy depends upon its affordability and maintainability that can only be assured through such an approach. Some of the fundamental building blocks that might be used to develop a fiscally informed strategy are Major Joint Military Capabilities, Key Service Capabilities, and Enabling Capabilities. Some examples of the subareas under these building blocks would include:

- **Major Joint Military Capabilities**
  - Conventional Precision Strike
  - Forced Regional Access or Entry
  - Focused Regional Reconnaissance, Intelligence, Surveillance, and Target Acquisition
- **Key Service Capabilities**

- Air Supremacy or Superiority
- Sea Supremacy or Superiority
- Territory and population control and occupation

- **Enabling Capabilities**
  - Network Centric Distributed Command, Control, Communications, Computers and Intelligence
  - On-call Assured Logistics Support

Once these capability sets have been identified, the inter-relationships among the resource drivers and their subelements can be identified and assessed.

The Bush administration has a major challenge to develop a strategy that will provide the necessary capabilities for the near-term and assure the transformation of capabilities into the future that will protect our national interests in an environment of evolving globalization and the possibility of a future multipolar international structure. To accommodate the President's announced initiatives and assure his principal objective of a premier defense establishment, the selection of the defense strategy will definitely be driven by equally important decisions affecting resource elements that will define and shape its content. As we discussed earlier, these decisions will not be easily reached or sustained without the full support of the new administration, the military services, and Congress. Once these decisions are made, the transformation could be slower than desired because of the complexities associated with capturing the inter-relationships and dependencies of the defense budget. This further suggests that rather than a sweeping restructuring of defense, the administration should focus on a few critical areas that will generate forcing functions to have the services develop options for their realignment and divestiture that will support DoD's transformation plan.

The Office of the Secretary of Defense could then evaluate the options for responsiveness, relevance, affordability, and feasibility. This allows an interactive and iterative process that recognizes the external forces that will impact the defense program throughout the tenure of this administration and could accommodate mid-course corrections.

ENDNOTES - CHAPTER 5

1. This chapter reflects only the views of the authors and not those of RAND or its clients.

2. U.S. Department of Defense, *Joint Staff Quadrennial Defense Review* working papers, Washington, DC: December 2000. If the current FY 2001 budget is sustained, the respective service budget shares are: Army, 24.3 percent; Navy, 31.5 percent; Air Force, 29.3 percent. The OSD retains the rest for department-wide spending. Congressional Budget Office, *Budgeting for Defense: Maintaining Today's Forces,* The Congress of the United States, September 2000.

3. To give some scope to the dollars associated with some of these programs, we looked at the fighter programs. A revamped fighter program that includes the F-22, F/A-18E and F, and the Joint Strike Fighter (JSF) will cost approximately $300 billion dollars over the next 20 years. To further illustrate these potential future aircraft costs, note that the unit cost of an F-22 high capability stealthy fighter is currently projected to be approximately $185 million per aircraft. See Department of Defense, *Department of Defense Budget Overview: Fiscal Year 2002*, Washington, DC: 2001.

4. Joint Staff Internal Working Papers, January 2001; Interviews with Service programmers, February 2001.

5. John Isaacs, "Military Budget Continues Increasing to About $324 Billion," Washington, DC: Council for a Livable World, February 9, 2001.

6. Michael O'Hanlon, *The Defense Budget*, Issue Paper No. 8, Washington, DC: Brookings Institute, July 17, 2000, p. 2.

7. *Ibid*., p. 4.

8. Michael O'Hanlon, *How to be a Cheap Hawk: The 1999 and 2000 Defense Budgets*, Washington, DC: Brookings Institute Press, 1998.

9. Daniel Goure and Jeffrey Ranney, “Averting the Defense Train Wreck in the New Millennium," Significant Issue Series, Washington, DC: Center for Strategic and International Studies, November 1999.

10. American Institute of Physics, “The FY 2002 Bush Administration Budget Blueprint: In Context,” *FYI: The American Institute of Physics Bulletin of Science Policy News*, No. 25, March 6, 2001.

11. U.S. General Accounting Office, *Bottom-Up Review: Analysis of DoD War Game to Test Key Assumptions*, GAO/NSAID-96-170, Washington, DC, June 1996.

12. Another recent article that summarizes these problems is Eliot A. Cohen, “Defending America in the Twenty-first Century,” *Foreign Affairs*, Vol. 79, No. 6, November/December 2000.

13. The defense strategy drives many sizing and allocation rules within DoD operational planning. For example, although we now know that contingency operations do not adhere to the rigid assumptions identified in the Joint Strategic Planning Guidance (JSPG), the Joint Capabilities Plan (JCP), and the Contingency Planning Guidance (CPG), the strategy still shapes most of what resources are used and the allocation rules. The assumptions also indicate that most operations can be handled unilaterally, but in reality few U.S. contingencies are done without the assistance of coalition partners, allies and international organizations.

14. Michele A. Flournoy, *Report of the National Defense University Quadrennial Defense Review 2001 Working Group*, Washington, DC, November 2000.

15. National Defense Panel, *Transforming Defense: National Security in the 21st Century* and *Report of the Defense Science Board Taskforce on DoD Warfighting Transformation*, Washington, DC: U.S. Department of Defense, December 1, 1997.

16. William S. Cohen, *2001 Secretary of Defense Annual Report to the President and Congress*, Washington, DC: U.S. Department of Defense, 2001.

17. *Ibid*.

18. One other resource aspect of readiness, intentionally not captured here for simplicity, is the ammunition consumed in training that is a procurement expenditure. While this component of readiness is

worth some two billion dollars per annum, historically it has been only a very marginal source of budget savings during past reductions.

19. John McCain (U.S. Senator, R-AZ), *Ready Tomorrow: Defending American Interests in the 21st Century*, White Paper, Washington, DC: March 19, 1996.

20. Fixing this problem is more complex than adding funds to these accounts. In the Air Force sustainment accounts are complex systems that include the management of the Working Capital Fund, Major Commands' individual management styles, and trade-offs against modernization and other accounts. Funding the current Air Force sustainment bills causes major turbulence in the year of execution and impacts readiness. See Air Force Sustainment Campaign Plan Working Group, Working Papers, April 2-12, 2001.

21. Congressional Budget Office, pp. 15-16.

22. Ballistic Missile Defense Organization: *FY 2001 President's Budget Submission*, Washington, DC: U.S. Department of Defense, 2000, p. 1.

23. *Ibid.*, p. 3.

24. Summary of DoD Budget FY2001.

25. Ballistic Missile Defense Organization Budget, p. B01.

26. It has been estimated that approximately 23 percent of the bases are excess capacity. These include 60 functioning bases: 10 Army, 3 National Guard, 29 Navy, 6 Marine, and 12 Air Force. About 50 percent of the 500 bases nationwide are considered major. The first two rounds of base closure saved about $20 billion after the closure costs were paid.

PART III: EXTERNAL VIEWS OF TRANSFORMATION

There are many interested, and some disinterested, outside observers of the transformation of the American defense establishment. Unfortunately most of the American public falls into the latter category, according to Richard Friedman of the National Strategy Forum, another speaker. They have little interest in foreign affairs except to make sure that no instability affects their domestic tranquility. Though civilian elites tend to hold the military in high regard, most civilians have little understanding of military culture, and their apparently high level of support for the armed forces is shaky and shallow, according to Friedman. He asserted that the term "transformation" has no resonance with the public, and that a more accurate and understandable title for the conference would be "Adaptation of the Department of Stability in a Period of Relative Peace (and We're Really Not Sure About the Prosperity)." He argued that it is essential for the military to maintain its credibility in order to make its case for transformation with the public, and predicted a resurgence of interest in foreign affairs when there is a significant terrorist incident at home or Americans realize that the process of globalization will affect their jobs. Recent events will certainly test this hypothesis.

Agencies and allies who must work with the Department of Defense (DoD) are much more focused on the progress and results of transformation programs. Dr. John Finney of the Bureau of Political-Military Affairs, Department of State, assured the attendees of his organization's support for DoD's efforts, and asserted they needed to be part of a wider undertaking to reform the whole U.S. Government to conduct a strategy of global engagement better. Colonel Richard Wilson of the Australian Army described his own country's plans for continuous force modernization as it prepares for a future of increasing Operations Other Than

War. The Australians share American concerns about casualties, collateral damage, and leveraging new technology, and will monitor the course of American defense transformation with great interest.

The two chapters in this section are also from allies or potential coalition partners, and they reflect some other concerns brought up by Colonel Wilson. Colonel W. H. Moore is responsible for the conceptual and force development work for the future army of the United Kingdom. He emphasizes possible problems in interoperability, fearing that the pace or direction of American military reform will produce a force that will have great difficulty working with armed services from other nations. Colonel (retired) Leonid Polyakov, Director of Military Programs at the Ukrainian Razumkov Centre for Economic and Political Studies, is more concerned that the transformed American force will be too dependent on technology and underestimate the importance of human factors in warfare. He also wants to publicize current Ukrainian contributions to combined operations with U.S. forces. Their observations merit serious consideration as the U.S. DoD embarks on its ambitious transformation program.

CHAPTER 6

THE UNITED KINGDOM'S VIEW OF U.S. ARMY TRANSFORMATION

W. H. Moore

From the United Kingdom's (UK) perspective, the U.S. Army Transformation process is one of the more adventurous and exciting military programs in the world today. Emanating from General Eric Shinseki's vision as he took office as Chief of Staff of the Army, it has moved ahead with breathtaking pace. Indeed, it is very hard to keep up with this rate in America, let alone 4,000 miles away in the UK. I have therefore had to draw a line in the sand on which to base my lecture, and have taken the situation as presented at the Association of the United States Army (AUSA) in March 2001 in Fort Lauderdale, Florida, as my benchmark. My chapter will focus on what the UK Army is doing to meet the new challenges of the future operating environment, and then draw out the similarities and differences with the U.S. Army. Let me say at the start, though, that I find the transformation process an entirely logical program, that, if successful, will focus America's Army on the key aspects of rapid effect and deployability, thus making it an appropriate force for the 21st century. The process would appear to have minimal risk in that it does improve the Legacy Forces—thus maintaining a strong warfighting capability—at the same time as it is developing both its Interim and Objective Forces. I have no doubt that transformation will be successful, provided that the money is available for all three strands.

The UK Ministry of Defence differs from its U.S. counterpart in that it is more closely integrated; it has to be—the UK has smaller Armed Forces and therefore has to make the most economical use of all its scarce assets. The UK Army, for example, does not have its own budget, and procurement of equipment is a truly Joint affair, and this brings me to my first observation about transformation. Despite the rhetoric from AUSA, I am not yet convinced that U.S. Army transformation has the full support of the other services, and despite the ongoing Rumsfeld review, I am not sure how much Defense support it has (in terms of dollars). While I realize that I may be on sticky ground in this respect, this is just a perception. I hope that I am wrong. But this does lead me to the next point, that of perception itself. U.S. Army transformation, to the outside world, seems very focused on equipment and a Revolution in Military Affairs (RMA). And yet this is not the case, as any discussion with somebody from your Training and Doctrine Command or a U.S. Army senior leader will tell me. In fact, the U.S. Army is taking a holistic view of what they are currently doing, but this is not the picture that is often portrayed outside of the United States. You may not consider that such an observation is valid, but if your allies do not have a real grasp of what you are up to, they will find it difficult to work out how we might best work together. I will return to this point.

The UK took a close look at its future in the Strategic Defence Review of 1998, a year after the Labour Government came to power. It was clear that the UK faced no clearly identifiable strategic threat, and while its first priority was to ensure the defense of the UK, the Armed Forces were to pursue a more expeditionary role. But how were they to be configured for such a mission?

A look at how they might operate in the future would see a battlespace that has many more players than it had during the Cold War. In the UK Army, we would see ourselves operating more closely with the maritime and air components to project power to where it was truly most

needed. More, and very different, allies would be involved in coalitions of the willing. In addition, there would be many more interested parties in theatre than hitherto. Contractors, other governmental departments, nongovernmental organizations like the Red Cross and charities, the United Nations, bodies like the Organization for Security and Cooperation in Europe (OSCE), and multinational cartels—all of whom would be in theatre before us, and would remain behind long after the Armed Forces had left. People—possibly the neutrals—who would either be dependent upon armed forces, supportive of their actions, or downright hostile to their mere presence, would also complicate the issue. This is a very convoluted picture indeed.

To conduct a successful campaign, a totally integrated approach by all those parties would be required in order to bring the crisis to a satisfactory conclusion. This is the environment in which the UK sees itself operating in the future. Allies are key to us—we cannot go it alone, and therefore we have defined our developmental priorities accordingly: first and most importantly, the ability to conduct alliance and coalition warfighting; second, using those same capabilities, to conduct national-only warfighting (a re-run of the Falklands, for example); and third, using the same set of capabilities again, other operations. Therefore we heavily depend on our allies, and this brings me to the one major concern that I have about the U.S. transformation process.

The UK and other allies need to operate alongside the United States if we are to create that effect to which I alluded previously. Equipment interfaces will be key, and our way of doing business together should be broadly recognizable, as should our way of thinking—interoperability of the mind is probably the key factor. You are running ahead so fast, that we may not be able to keep pace, or even to catch up when you have attained your goals. This may be our problem, and why should you wait for us? But the bottom line is that we will need to fight together,

and this may require some accommodation now. Thus the most important criteria for the UK is to stay engaged, to understand what you are doing, and for both our nations to have a dialogue to ensure that we can continue to conduct operations effectively and together. We need to understand your concepts of operations and your capabilities before we get to the line of departure if we are to achieve that integrated effect I mentioned earlier.

Any developmental process has to take cognizance of the trends and challenges that are likely to be faced by its armed forces. While any prediction of the future is fraught with danger—as many of our compatriots have discovered to their cost—there are, nonetheless, some enduring trends and challenges that we will all face. One such challenge is to get into theatre more quickly and with more effect in order to deter, coerce or ultimately defeat an enemy before he has got himself set—an attempt to nip a crisis in the bud. We are therefore extremely supportive of the concept behind the U.S. transformation process. Indeed, we have defined a similar idea and have termed it Rapid and Early Effect—the rapid part being the military contribution to early effect, where the emphasis is not on the speed of deployment, but rather the operational and tactical impact once deployed. The UK Army is currently only capable of conducting rapid effect in low-risk or small other operations—in fact, we are rather good at it. Witness the highly successful operation by the 1st Battalion of the Parachute Regiment to rescue the hostages from the West Side Boys in Sierra Leone late last year. But we need to do better—we need to develop our forces to conduct rapid effect in more intense other operations. The only difference that the UK has with the United States is that we do not believe that we will be able to develop a rapid effect force capable of warfighting against a matched enemy until about 2025. We do not believe that the step change in technology will occur in the timeframe that the United States is planning for the objective force. We hope it does because it would allow the more rapid

transformation of some of our forces as well, but the revolution has yet to occur.

The UK is therefore looking at improving the capability of its light forces, developing what we term "Medium Forces," and the necessary rebalancing of our heavier forces. Medium forces will be configured under present tentative plans to fit the C130 envelope, and we are currently deciding the effect that this concept might have on our equipment programme. The Future Rapid Effect System (FRES) is in a very early stage, embryonic when compared to what the United States is doing with its interim brigade combat teams (IBCTs). Nonetheless, because we do not believe in a short-term technology fix, our approach is more incremental in nature. The UK is aiming to identify the technologies it would wish to insert downstream, and then introduce them incrementally as the various constituents become proven. By taking such a modular approach, there is less technical risk, and a more level funding profile is maintained throughout. This latter point is most important owing to the joint nature of our procurement process to which I alluded earlier. A very expensive project with high technical risk is vulnerable in times when defense budgets are being squeezed. Our process is therefore one of evolution, not revolution—incremental rather than Big Bang.

Our Medium Forces are also unlikely to be hard-wired, and their peacetime structure is therefore different from your IBCTs. The UK envisages force packaging from our heavy, medium, and light forces to achieve the necessary effect. In a simple warfighting scenario, the light forces would effect entry, the medium forces might stabilize the situation, and the heavy forces would produce the decisive action. Medium forces, for the UK, must, however, have utility around the spectrum of conflict—we are too small to develop niche capabilities. Until this step change in technology occurs they will have utility:

- In support of Heavy Forces in warfighting (rear area operations, flank operations, complex terrain)
- For the more intense Other Operations (short of warfighting)
- For achieving Rapid Effect (in operations short of warfighting).

We have yet to decide on how these might evolve in structural terms, but one solution might be to develop medium forces from our current mechanized and light forces to provide an intervention and utility force. This recognizes that full spectrum ground maneuver using medium forces can only take place in around 2025. In summary then, our medium forces, when developed, must have the widest possible utility in the future operating environment. In this concept, we are completely on board with the U.S. Army—the ends are the same, it is just the ways and the means that differ.

Before closing, there are one or two other minor observations to be made about the U.S. Army transformation. I hesitate to raise them because they are not just pertinent to the United States and are prevalent among the corridor conversations in our own ministry. I am increasingly worried by the over-reliance on technology to produce solutions for warfare. In the final act, the resolution of a conflict invariably centers on issues of people and territory, tasks which demand the deployment of land forces: uniquely and inescapably so. The concept of killing at a distance, using high tech sensors linked to long-range weapon systems from all the services against a matched enemy in a warfighting operation, is an entirely logical solution. But many enemies, even sophisticated ones, will not wish to present themselves for such high technology destruction and defeat, and technology may not have the effect that we might hope on other less sophisticated adversaries, as the Russians discovered on the streets of Grozny. I may be a skeptic, but I hope I do not have my head

buried in the sand, when I say that I am wary of analysts who say that we can always win at a distance. History does not bear out their contentions, and there must be an injection of reality into this debate, and the inevitable balance must be found.

Perhaps I can leave you with some thoughts about how the UK—a strong ally and supporter of the United States—views your exciting and fast-paced transformation process. I will use the analogy of a set of stop (traffic) lights. The red represents major concerns, the amber depicts current worries that I would expect to be resolved over time, and the green is the light top left of the exit door on a C130—i.e., that you are heading in the right direction. Table 1 shows my assessment of Army transformation using this traffic light metaphor.

The way in which the U.S. Army is transforming itself to meet the challenges of this century is logical and, provided the money holds out, will result in a highly effective intervention force that can also win its nation's wars. We in the UK would wish to remain closely engaged in what you are doing.

Concerns (Red)	Short Term Worries (Amber)	Strong Support (Green)
Interoperability with Allies could be a problem in terms of equipment and the way in which the U.S. will fight	The perceived lack of a Joint/Defense approach could undermine what the Army is trying to achieve	A logical process that is required to adapt forces to the new operating environment
	The perceived lack of marketing, especially to allies, will not aid interoperability	The Objective Force will improve operoperational effectiveness
	A potential over-reliance on technology and stand-off attack could lead to problems among less sophisticated enemies	The Objective Force will stand a better chance of preventing crisis escalation
	There is potential for competing interests among the Legacy, Objective and Interim Forces, especially for money	The maintenance of the Legacy Force ensures minimal operational risk while the Interim and Objective Forces are developed
	The timeframe for a step change in technology required to deliver the Objective Force is unrealistic	The holistic process pursued will result in the realization of true capability
		The proactive validation and experimentation program will allow incremental and iterative development

Table 1.

CHAPTER 7

AMERICAN DEFENSE TRANSFORMATION: A VIEW FROM UKRAINE[1]

Leonid I. Polyakov

I want to present a Ukrainian perspective on U.S. defense transformation. I can suggest two reasons why such a perspective might be of interest. The first reason is that the past decade of experience in U.S./Ukrainian military cooperation within the framework of American "peacetime engagement" programs has shown that our nations share a converging interest in both parties having a robust defense. The United States has consistently been the most active foreign advocate and supporter of Ukraine's independence.

So, we think that you care about us, and we care about your strength. We consider your defense capabilities as one of the cornerstones of continued American support to Ukraine. In other words, we care about your future as a kind of guarantee of our own future.

The second reason is that experience in recent years (NATO implementation forces [IFOR], stabilization forces [SFOR], and Kosovo forces [KFOR]) also demonstrates that Ukrainian troops have been and continue to be a potential coalition partner with the U.S. Army in future contingencies. Therefore, it is not unthinkable that the success of our future combined operations to some extent could depend on how we shape our interoperability now.

My chapter is divided into two parts. First, I will cover some considerations concerning the general operational dimensions of American defense transformation in an era of

peace and prosperity. Then I will discuss some aspects of interoperability between the United States Army, a "high-tech info age force," and the Ukrainian Army, a "low-tech industrial age force."

An Example from History.

To illustrate the possible effects of transformation on U.S. military forces and to highlight potential dangers, I offer this example from 2,000 years ago.

In the year 9 AD, the Roman General Varus led three Roman Legions (a force equivalent to a U.S. Army Corps today) on an expedition to punish rebelling native tribes in Germany. The Romans had the best military technology, the best doctrine, and the best training available in the whole world at that time. Their army had not been defeated in battle in 100 years. The Romans were led on their march by friendly German troops who knew the region, allies who had sworn allegiance to Rome forever and were interoperable within the framework of the Roman military system. The allied scouting party was led by Arminius, a German prince who had been made a Roman officer and citizen because of his demonstrated intense loyalty to Rome. Arminius led the three Roman legions into the dense forests and swamps of the Teutoberger Wald. When the Roman legions were deep into the woods, their German allies suddenly disappeared. Then other German warriors attacked the Romans on three sides. The Romans were not able to deploy into their normally deadly combat formations because of the thick forest and swampy ground. They were faced with an asymmetric battle that they had not been trained for, and they could not adequately adapt to the unfamiliar conditions. All three legions were destroyed.

On a larger scale, the German victory in this battle changed all of European history. Afterwards, the Romans withdrew behind the Rhine and never again colonized much of Germany except below the Danube. Initially they did launch a punishing strike against the German tribes in

revenge for the loss of their legions, but the Romans soon had to withdraw because they now had too few troops to occupy the area. Their response resembled a modern Tomahawk cruise missile attack against Iraq, or terrorists, today. Such actions hurt your enemy for a few days or months, but if you do not occupy the ground, you get only some momentary satisfaction and never solve the problem. Because Rome failed to occupy Germany, the modern world was faced with one of the great rivalries of our day—France versus Germany. Had Rome occupied both areas, perhaps they could have developed in ways that would have prevented World War I and World War II.

So what is my point? We need to examine if this Roman defeat after an era of continuous victories and expansion was a matter of accidental coincidence, or the result of systemic factors. I think that it was certainly the latter.

In this illustration, there are both operational and interoperability issues. First, among the former is the fact that the Romans were too devoted to old, proven doctrine that had worked for hundreds of years. Once denied the use of familiar battle techniques, Roman soldiers could not adapt. They had no contingency plans to deviate from their accepted practices. Long reliance on victorious doctrine led to inflexibility and a neglect of alternative approaches.

There were other operational reasons the legions failed in the Teutoberger Wald. Continuous victorious wars with vague aims and mediocre enemies, where national survival was not at stake, led to a "dulling" of the aggressiveness of the Roman soldiers. They were not enthusiastic about tackling another peacekeeping mission.

Their leadership also failed them. Varus did not make a proper reconnaissance of the unfamiliar route of advance, neglected to organize security on the march, was overconfident, and had no plan for counterintelligence. His ignorance of basic security procedures suggests that Roman generals had begun to believe too much in their own

invincibility, and too little in the ability of an enemy ever to challenge them seriously.

Despite having materiel interoperability with their German guides, Roman ignorance of human factors negated that advantage. Due to overconfidence, the Romans never questioned the loyalty of their allies. The Romans had faith in their technology and doctrine, assuming that no one could beat them. They also assumed that their allies had no other motive but to support Rome. Instead of shaping relations with an ally to create an effective force multiplier, the Romans ended up being guided by traitors.

The Dominance Trap.

We can draw many useful insights from the Roman disaster in the Teutoberger Wald. The name of this Strategy Conference—Transforming Defense in an Era of Peace and Prosperity—itself suggests parallels between 9 AD and the possible future of the U.S. Army in 2030-50. In my judgment, this current "Era of Peace and Prosperity" presents the same dangers for America as 100 years of victory did for the Romans. Let's call this similarity the "dominance trap."

History teaches that every military superpower at the peak of its strength appears to be forever unbeatable to its citizens and many outsiders. Yet sooner or later, its power declines. This usually occurs not principally because of technological backwardness, but mainly because of a decline in the morale and determination of the army and the people, as well as a deterioration in the quality of national and military leadership. There is evidence, I believe, which suggests that the consequences of U.S. Army transformation might in the worst case make technological superiority irrelevant. I don't think that your future adversaries will try to match U.S. arms. They will work to undermine American combat potential in asymmetric ways. Operationally and tactically, for example, the U.S. plan in the Gulf War was brilliant. But the Iraqis fought

symmetrically. What if you are fighting an infantry-based, highly motivated Army of a very large and populous nation instead? What if that enemy simply issues each man a rock and tells him to hit the nearest American on the head? Even if your intelligence and information superiority is so good that you know where each man and each rock is located, can you kill enough of them fast enough to avoid heavy casualties? I wonder whether the transformation envisioned increases the vulnerabilities of U.S. military forces to asymmetric enemies and if it risks ignoring human (or other than "materiel") factors.

The Army is a product of its nation-state, but the fundamental strengths of nation-states are under attack from many sources. Drugs and corruption can undermine morality and leadership. Casualty sensitivity might lower soldiers' morale and reduce the support of the population, which can be influenced more quickly in the Information Age. I would suggest that peace and prosperity are in themselves a kind of threat to American and Ukrainian defense. From a defense perspective, there are disadvantages to living in such a quiet period, since there is a risk of losing the support of the people for defense transformation if they see no immediate threat.

In the next 20-30 years, the United States will probably enjoy unchallenged dominance in military affairs. However, this could lead to a situation where, despite unparalleled high-tech capabilities, the absence of a real peer competitor could make the human dimensions of U.S. military strength vulnerable.

Issues of Interoperability.

The Roman story suggests that American military contact programs and peacetime engagement may be a very good way for the United States to understand its friends and allies and determine whether they are "really on your side," as well as to shape interoperability in terms of human and materiel factors.

U.S. doctrine recognizes that there are other-than-materiel aspects to warfighting. *Joint Vision 2020* includes such factors as doctrine, organization, training, and personnel, for example. There may be some materiel solutions to interoperability (such as the United States giving or selling radios to an ally so they can communicate, for example). However, it may make better sense to provide the ally with American liaison officers who have the proper radios to talk to the U.S. force. But if you must rely on liaison officers, other factors grow in importance. Those selected for this important duty must be properly trained to work with foreign forces, and educated in their language and culture.

Trying to "put the shoe on the other foot" raises a host of questions. Could the allied nation provide liaison officers with the right qualities to the U.S. force? Should nations considering operating with American forces be training these kinds of liaison officers now, rather than waiting for the United States to provide them when there is a crisis? If such a capability existed with a potential partner, would it make the United States more willing or more able to help? Would this be a "force multiplier" and perhaps a deterrent for the partner country versus an adversary nation? Could this idea be linked to the use of current American military contact/engagement programs and language training offered to other countries, to build such a capability starting today? Should this be a higher priority for U.S. military cooperation and engagement with potential partners?

U.S.-Ukrainian Relations.

Now let's look at how current U.S./Ukrainian military cooperation falls into the framework described above.

Ukrainians always were regarded as good soldiers and good fighters on the tactical level, but they were not always properly led and motivated. This was evident in the last days of the Soviet Army, when Ukrainians comprised the largest proportion of field grade and senior officers as well

as noncommissioned officers (NCOs). The troops of an independent Ukraine inherited the reputation for being a capable force, and they have maintained it. For example, the Ukrainian engineer battalion performing peacekeeping in Lebanon disarmed several thousand explosive devices in less than 1 year, while during the 22 previous years of the U.N. Interim Force in Lebanon (UNIFIL) mission in that country, only 56 devices had been destroyed.

In the area of international military cooperation, Ukraine interacts especially actively and fruitfully with the United States. We highly appreciate the American financial contribution to this relationship. Since 1994, Ukraine's military has obtained over $30 million from the United States under international military cooperation programs to fund bilateral events, Ukraine's participation in the NATO Partnership for Peace Program, and the maintenance of Ukrainian peacekeepers in Kosovo. With U.S. assistance, Ukraine has commissioned several military English language training facilities. The United States has worked with us to create a program to train professional NCOs for Ukraine's armed forces. More than $8 million has been allocated for the training of some 300 Ukrainian officers, NCOs, and civilians in the United States under the International Military Education and Training Program. In terms of the amount of financing and the number of events, Ukraine's cooperation program with the United States matches its participation with all other partners combined.

As a result of this cooperation, U.S.-Ukraine interoperability for exercises or contingency operations improved. Ukrainian troops are working directly with U.S. forces in Kosovo today. Ukraine's military is now more familiar with U.S. and Western doctrine because of exercises, exchanges, and cooperation in the Balkans.

I will tell you another story which happened on February 13, 2001, in Kosovo. Ukrainian peacekeepers escorted a convoy of Serbian civilians through the mountains to the

municipal center of Strpce. A sniper (allegedly Albanian) opened fire, apparently aiming at one of the bus drivers, but shot an elderly Serb instead. Ukrainian peacekeepers immediately deployed and searched the nearby slopes, where they found several Albanian males and detained them. Later in the evening a Serbian crowd of up to 1000 gathered around the local U.N. police station as a "spontaneous protest against the killing of the elderly Serb." The situation became tense as Ukrainian peacekeepers formed a circle around the station, with the U.N. police contingent (including U.S. military police) inside, while the crowd tried to break in. At some point the U.N. police station chief started firing in the air and aiming his gun at the crowd. This move ignited the mob—molotov cocktails were thrown at the station, stones were hurled at Ukrainian peacekeepers, and five police cars were burned or destroyed.

The crowd was growing when the Ukrainian company commander, Captain Brezgounov, entered the station with four soldiers and suggested the policemen evacuate. They hesitated when they learned that the Ukrainians were in small numbers. When the policemen were finally in Ukrainian vehicles, the crowd blocked their movement. Then suddenly support came from outside—American vehicles rammed through hastily erected Serbian barricades on the outskirts of Strpce and raced to the aid of the Ukrainians. The senior American officer present decided to address the crowd. As he approached, the crowd seized him. God knows what could have happened to him if the Ukrainian peacekeepers led by the same Captain Brezgounov had not pulled the U.S. officer out and saved his life. Within 24 hours, the KFOR Brigade East commander, a U.S. brigadier general, awarded Captain Brezgounov with a medal for "outstanding performance."

This is how the Ukrainian media reported the incident. I hoped to find some more details from NATO and the Americans, but have failed so far. The *Stars and Stripes* of February 21 touched on the incident, but said nothing about the role of Ukrainian peacekeepers that day, except

mentioning someone's proposal to assign U.S. troops as convoy escorts instead of "unnamed KFOR troops." I could find no other references to the event in American newspapers.

This absence of coverage in the West might have to do with American political leadership not wishing to publicize a danger to their troops, even though the U.S. forces on the scene recognized the action for what it was. This could be an example of trying to avoid the "CNN factor"—the story of U.S. soldiers being surrounded and having to be rescued by *anybody* could produce public or political backlash. I must say, however, that this lack of publicity is perceived by some Ukrainians as a reluctance to note their important role.

Additionally, there was evidently a reluctance on the part of the U.N. police to cooperate with the Ukrainian KFOR troops, and some evidence of the lack of coordination between the U.S. and Ukrainian troops once the action began.

Was this due to the American troops failing to appreciate the possible contribution of their Ukrainian ally, or a lack of trust in their capability? Or was it simply a lack of advanced planning? I will leave the first possibility open to speculation. But if there was a failure to plan ahead of time as a multinational unit for possible courses of action, that raises a new set of questions. We might ask whether the troops (and the U.N. police) involved simply lacked a common doctrine? This could contribute to the failure to plan properly. A lack of leadership appreciation for each other's doctrine and culture could also lead to misunderstandings of intent.

Again, I think that doctrine (and training in that doctrine) is a more important "glue" to hold different types of forces together than "bringing them both to the same level" in material-technical terms. In this regard, NATO efforts to build a "hierarchy" of Allied Joint Doctrine are important. I am told, however, that one major gap in the NATO doctrine so far approved is in Peace Support

Operations. If it had been available before the incident I just described, it might have improved the KFOR response.

Conclusion.

To conclude, I want to emphasize that America should not become complacent about or too dependent upon either superior technology or "victorious doctrine" as it faces the challenge of transformation. The ability of the United States to maintain a technological edge over potential adversaries appears assured at the moment, but whether it can continue to do so will depend upon how future leaders, allies, doctrine, and training will evolve. These factors should be constantly harmonized with materiel factors, which is a much more difficult process than merely constructing a continual series of new and better weapons systems.

We in Ukraine hope that the United States does not lose its perspective on other-than-materiel factors as it transforms its military. Otherwise, there are risks for your future forces and for our potential interoperability. We should work together now to identify interoperability problems, in the human as well as the technical dimension, in order to maximize both our capabilities in the future.

ENDNOTES - CHAPTER 7

1. The author would like to acknowledge the contribution of my former instructors at the U.S. Army War College during my study there during 1994-95: Professors Douglas Lovelace, David Jablonsky, Douglas Johnson, Stephen Blank, and Earl Tilford, along with Colonel Jeffrey McCausland. Special thanks for providing valuable insights to my classmates goes to Colonel (retired) Harry Simmeth.

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