USAWC STRATEGY RESEARCH PROJECT

ADAPTABILITY – A NEW PRINCIPLE OF WAR

by

Lt Col BRIAN D. DICKERSON
United States Air Force

Colonel David L. Connors
Project Advisor

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

1. REPORT DATE (DD-MM-YYYY) 07-04-2003	2. REPORT TYPE	3. DATES COVERED (FROM - TO) xx-xx-2002 to xx-xx-2003

4. TITLE AND SUBTITLE
Adaptability - A New Principle of War
Unclassified

5a. CONTRACT NUMBER
5b. GRANT NUMBER
5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
Dickerson, Brian D. ; Author

5d. PROJECT NUMBER
5e. TASK NUMBER
5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME AND ADDRESS
U.S. Army War College
Carlisle Barracks
Carlisle, PA17013-5050

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME AND ADDRESS
,

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
APUBLIC RELEASE
,

13. SUPPLEMENTARY NOTES

14. ABSTRACT
See attached file.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 51	19. NAME OF RESPONSIBLE PERSON Rife, Dave RifeD@awc.carlisle.army.mil
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER International Area Code Area Code Telephone Number - DSN -

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39.18

ABSTRACT

AUTHOR: BRIAN D. DICKERSON

TITLE: Adaptability – A New Principle of War

FORMAT: Strategy Research Project

DATE: 07 April 2003   PAGES: 51   CLASSIFICATION: Unclassified

The Principles of War are an accepted tool to assist warfighters. They attempt to model those aspects of war the U.S. military feels are important to consider when planning for war or executing a campaign. The Principles also consciously and unconsciously influence the U.S. military establishment across a wide spectrum outside of war. These include, but are by no means limited to visioning the future military, weapons development and acquisition, and education of American military leadership.

The military has always respected adaptability as a hallmark of its warriors. It has identified adaptabilities value in axioms like "no plan survives first contact with the enemy" or called it by other names such as "initiative" or "ingenuity." But the ability to take the commander's intent and plans and then adapt them to the current situation and environment in order to accomplish the mission is one of the traits of U.S. military fighting men and women and is arguably a trademark of American culture. Incorporating Adaptability in the Principles will emphasize an attitude, mental ability, and physical characteristic that is already valued by all of the military services on the battlefield.

The goal is a military, joint in nature, proficient in the application of power across the spectrum of conflict, educated in military history and doctrine, well led with technologically advanced tools, and the ability to adapt to the Combatant Commander's unique requirements. With the continuing complexity of the battlefield, the blurring of lines between strategic, operational, and tactical events and outcomes, and the increased range of military operations, the adoption of adaptability as a Principle of War is an extraordinary opportunity to influence the continuation of U.S. military dominance.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF TABLES

x

ADAPTABILITY – A NEW PRINCIPLE OF WAR

> Preparing for the future will require us to think differently and develop the kinds of forces and capabilities that can adapt quickly to new challenges and to unexpected circumstances. An ability to adapt will be critical in a world where surprise and uncertainty are the defining characteristics of our new security environment. A culture of change, flexibility and adaptability is more important to transforming the military than simply having new hardware.
>
> —Secretary of Defense Donald H. Rumsfeld

"The ultimate goal of our military force is to accomplish the objectives directed by the National Command Authorities."[1] Supporting the National Security Strategy and the National Military Strategy, these objectives delineate a spectrum of military operations from a major war to military operations other than war. Joint Vision 2020 (JV 2020) provides a guide for the transformation of America's Armed Forces in areas as diverse as experimentation, technologies, leadership, military education, operational concepts, and organizations.

It is clear that the United States aims at pursuing its global interests and responsibilities along a wide front. The U.S. military must win wars and contribute to peace.[2] Its forces will routinely shape the international security environment. "The joint force, because of its flexibility and responsiveness, will remain the key to operational success in the future."[3] That future force will need to be integrated intellectually, operationally, organizationally, doctrinally, and technically.

JV 2020 highlights the requirement for a force that can adapt to changes in the strategic environment, leverage new technologies, and confront potential enemies, who will eventually adapt to U.S. strengths and weaknesses.[4] A key attribute of future American war-fighting competence, leadership, and attitude is an ability to deal with uncertainty and change, defining characteristic of future environments.

The American military organization, its individual services and the individual military members do not change quickly or easily. But the confluence transformation, the rise in the threat of terrorism, exponential rates of technological change, a complex and unknown future, an adaptable and asymmetric threat, a continuing move towards jointness and diverse missions compels the U.S. military to reevaluate itself. Any of these external forces individually would have brought about significant new challenges in their wake. Together, their impact is significant. Dogmas and paradigms, from service culture to operational concepts, from weapon systems acquisition to organizations, from strategy to tactics demand a new look. Many areas will require modification to maximize capability and efficiency in a world of fiscal constraints. No

sacred cows should escape re-assessment, including the Principles of War. There are nine traditional principles of war: The Objective, The Offensive, Mass, Economy of Force, Maneuver, Unity of Command, Security, Surprise, and Simplicity.[5] Nevertheless, the U.S. military should add one more - Adaptability.

This paper will not examine the standing principles as appropriate, necessary nor even correct[6]. Instead, the current nine Joint principles are used as a base from which to depart. It will seek to show that the principle of adaptability is a valuable guide at the tactical, operational, and strategic levels of war and that it will aid the U.S. military across a wide spectrum of other activities. Finally, that the principle of Adaptability will positively change the military strategic culture.

Adaptability, in the past, has been a largely unacknowledged component of military effectiveness. It also has been a prized competency of great military leaders. In the future environment, adaptability will become a more significant keystone to the future successful military operations. It has affected in the past and continues to affect American doctrine, strategies, deliberate and contingency planning, the acquisition process, operational concepts, training, and much more.

A look at the history of the Principles of War and how they have influenced military organizations, strategic culture, doctrine, and strategy provides background information. Next, this paper will turn to a definition of Adaptability and differentiate it from flexibility, which is a key component in the definition of 'maneuver'. An examination of the major external forces acting upon the U.S. military, including transformation will provide evidence as to why Adaptability needs to be a principle of war. The litmus test of any principle is the applicability of that principle to the conduct of war. Finally, this paper will provide a definition for Adaptability.

HISTORY OF THE PRINCIPLES[7]

> principle: 1. beginning, original or initial state; 2. that from which something takes its rise, originates or is derived; a source; the root; 3. a fundamental truth or proposition on which many others depend; 4. a comprehensive and fundamental law, doctrine, or assumption.

> —The Oxford English Dictionary, Second Edition

WHAT ARE PRINCIPLES

What are the Principles of War? In short, they represent neither a recipe nor a checklist for success. One cannot use them in isolation, and they demand a healthy dose of historical perspective.[8] They are, in essence, a theory of war, a model that attempts to bring some order

to the chaos of war. However, they are much more than just a theory; they provide a bridge between theory and application. They "guide warfighting at the strategic, operational, and tactical levels" and are the "enduring bedrock of US military doctrine."[9] They are time-tested principles that guide the employment of forces and shape the way the U.S. Armed Forces think about the use and employment of military power.[10] They are "guidelines that commanders can use to form and select a course of action."[11] The wisdom gained from study of the basic principles of war underscores that war is not a business for managers with checklists; it is the art of leaders.[12] "The principles of war guide and instruct commanders as they combine the elements of combat power. The principles reflect the distillation of [Army] experience into a set of time-tested guidelines."[13] They are part and parcel to a unique American military strategic culture, which is the lens through which the U.S. military sees the world, its adversaries, and itself. They are the foundations for the way the American military fights.

The search for comprehensive and fundamental laws to understand war are at least as old as Sun Tzu. In their current Joint form, they evolved from the 1921 US Army Field Training Regulation No 10-5. The modern U.S. military has come to accept the current Principles of War, not as laws that guarantee victory, but as considerations for the actions involved in the application of military power.

There have been innumerable examinations, modifications, additions, and deletions over the years; such changes are often associated with technological improvements.[14] Constantly examining the applicability of these principles is a healthy and necessary activity, encourages intellectual discussion, and ensures that military organizations do not become bogged down in past dogma. Air Marshal David Evans, Chief of the Air Staff, Royal Australian Air Force noted in his book *War: A Matter of Principles*; "[A]s with all other areas of conventional wisdom, of past values, past doctrine, the principles of war are to be questioned, to be tested and their continuing relevance verified."[15]

In their own ways, each of the great theorists of war has wrestled with the concept of principles. The U.S. Principles of War in their present form have been the exception in the history of principles versus the norm. Other terms for these have been used in the past (law, rule, maxim, and axiom to name a few) and have generally been long a drawn out, not short aphorisms. However, the basic premise of "a comprehensive and fundamental law, doctrine, or assumption" is present in most of great theoretical works about war.[16]

DEAD GUYS AND PRINCIPLES

In the opening of his *The Art of War*, Sun Tzu states "[W]ar is a matter of vital importance to the State; the province of life or death; the road to survival or ruin. Therefore, appraise it in terms of the five fundamental factors and make comparisons of the seven elements." Sun Tzu recommended keeping only those generals who follow his strategy and firing those who do not. He believed he could predict the winners and losers of any war based on who followed his precepts.[17] These five fundamental factors and seven elements became the basis for his version for the path to success in war.

During his writing of *Arte della Guerra* (The Art of War), published in 1521, Niccolo Machiavelli discovered that there were certain fundamentals common and unchanging in previous writings on war. He included a set of general rules to guide a commander's actions in his work.[18] Many of the current nine principles can be seen in his rules and one in particular, implying the value of adaptability, suggests "nothing is of greater importance in time of war, then to know how to make the best use of a fair opportunity when it is offered."[19]

Historians most often associate the modern concept of principles of war with Antoine-Henri Jomini. The Swiss theorist argued that there were a relatively few in number, but nonetheless, identifiable principles, which commanders should use to guide their warfighting actions.[20] In December 1807, Jomini published a paper bringing together a list of ten paragraphs of "general truths whose application contributes to success in war." John Algers', in his book *The Quest for Victory: The History of the Principles of War*, states that Jomini's list are the prototype of the modern principles of war.[21]

Carl von Clausewitz is also often associated with the modern concept of principles,[22] but many experts point out that "he specifically rejected the notion that there could be any well-defined body of particular rules or principles that universally dictated one form of behavior rather than another."[23] Nonetheless, he did write a memorandum to the Prussian Crown Prince titled *The Most Important Principles for the Conduct of War*; nevertheless, he starts the memorandum with a qualifier:

> These principles, though the result of long thought and continuous study of the history of war, have none the less been drawn up hastily, and thus will not stand severe criticism in regard to form. In addition, only the most important subjects have been picked from a great number, since a certain brevity was necessary. These principles, therefore, will not so much give complete instruction to Your Royal Highness, as they will stimulate and serve as a guide for your own reflections.[24]

The memorandum does list general, offensive, and defensive principles. In spite of Clausewitz's own warning, it is not difficult to find all nine of the modern Principles of War in his memorandum and in *On War*. Again, despite his warnings, some insight can be gained when looking at how Clausewitz defines a principle. In fact, it is very similar to how the modern U.S. military uses the term[25]:

> Principle is also a law for action, but not in its formal, definitive meaning; it represents only the spirit and the sense of the law; in cases where the diversity of the real world cannot be contained within the rigid form of law, the application of principle allows for a greater latitude of judgment. Cases to which principle cannot be applied must be settled by judgment; principle thus becomes essentially a support, or lodestar, to the man responsible for the action.[26]

He goes on to argue that principles are indispensable concepts for that portion of a theory of war that leads to positive doctrines.[27]

MODERN TIMES AND PRINCIPLES

There have been a number of modern theorists and writers both for and against the Principles of War, in the 20th Century. They include Marshal Foch, A.T. Mahan, B.H. Liddell Hart, J.F.C. Fuller, and Bernard Brodie. But, the first official acceptance of principles and the first official U.S. publication with the term 'Principles of War' appeared in the 1921 U.S. Army Field Training Regulation 10-5. The list is surprisingly similar to the current official list over eighty years later (Table 1). The list disappeared entirely from the next version of the regulation. Although not officially listed as the principles, they were included in subsequent

1921 US Army Field Training Regulation 10-5	2002 Joint Publication 3-0
The Principle of the Objective	Objective
The Principle of the Offensive	Offensive
The Principle of Mass	Mass
The Principle of Economy of Force	Economy of Force
The Principle of Movement	Maneuver
The Principle of Surprise	Surprise
The Principle of Security	Security
The Principle of Simplicity	Simplicity
The Principle of Cooperation	Unity of Command

TABLE 1. U.S. PRINCIPLES OF WAR, 1921 VERSUS 2002

regulations, modified by additions and deletions, over the next twenty-eight years. In 1949, the list was again published and has remained roughly the same through today.

Between 1921 and 1949, a debate broke out among military theorists centered on the format, value, number, and absoluteness of a set of principles of war.[28] The 1923 Field Training Regulation version that deleted the principles, nonetheless, continued to reference them and did speak of the 'concept' of principles.

> While the fundamental principles of war are neither very numerous nor complex, their application may be difficult and must not be limited by set rules. Departure from prescribed methods is at times necessary. A thorough knowledge of the principles of war and their application enables the leader to decide when such departures should be made and determine what methods should bring success.[29]

In 1934, Major E.S. Johnson of the U.S. Army Command and General Staff College noted "[T]he importance of evolving for our professional use a set of correct, simple, practical basic principles of war can hardly be exaggerated at this time. We live in a critical transitory stage. Great war seems to loom on the horizon – wars perhaps much different, as to form and appearance, from our last war."[30] Johnson also highlighted the "[J]ustification for principles of war as an inventory system … for the baggage of experience and professional study each warrior has."[31]

The debate over the past eighty years is both healthy and necessary. Each of the U.S. services eventually doctrinally accepted the same Principles of War. The actual principles each service listed have had minor variations over the last three decades. While there have been some differences in definitions, the current joint and service basic doctrine manuals each present the same nine principles.

PRINCIPLES IMPACT ON U.S. MILITARY

> The principles of war guide warfighting at the strategic, operational, and tactical levels. They are the enduring bedrock of U.S. military doctrine.
>
> —Joint Pub 3-0

The influence of the Principles of War on the American military is pervasive. Their effects are both obvious and subtle. The Principles are obvious when officers talk about doctrine, plan operational campaigns, or execute tactical maneuvers. There effects are not as readily apparent in discussions about strategy or visioning a future military force. The Principles are a large part of the American military's strategic culture. From the beginning to the end of an officer's career, the Principles are present through formal and informal education and training. The Officer Corps makes choices and influences decisions which have significant impact in

areas such as tactics and operations development, theater strategic and operational planning, visioning the future military capabilities and concepts, technology research and development, organizing the military, training warriors, educating leaders, identification of requirements, allocation of resources, acquisition of material and much more.

PRINCIPLES AND STRATEGIC CULTURE

Sun Tzu commented, "Know the enemy and know yourself; in a hundred battles you will never be in peril."[32] To know itself, the American military must know the existence and impacts of strategic culture. Strategic culture is complex. The nation's geography, history, traditions, values, attitudes, patterns of behavior, habits, achievements, particular ways of adapting to the environment, and solving problems with respect to the threat or use of force are the ingredients of strategic culture.[33] Each element combines to create or modify the American strategic culture. Strategic culture is the why, when, and how the nation and its military fight wars. It is a reflection of the nation's moral and idealistic values, traditions of exploration, and seeking technological solutions. The Principles of War represent an important element in the American strategic culture. It is not easy to find something military that strategic culture, and through it the Principles of War, do not influence.

Military officers receive mission objectives. They formulate plans to accomplishment those objectives. They use their experiences of past successes and failures, recommendations from others based on their experiences, their education, their professional background, service and joint doctrine, and the Principles of War to develop a plan of attack. Each input can be clouded by strategic culture.[34] The American strategic culture has a tendency to superimpose its values on other cultures … Americans assume the things important to them are important to others, and that the rest of the world sees the problems, solutions and benefits in the same way. One commentator has noted that it is "dangerous for the West in general, and for Americans in particular, to believe that others view strategy and the nature and uses of force through an Anglo-American lens"[35]

The Principles of War represent more than just the foundation of doctrine or a tie between theory and application. They are the lessons from conflicts past deserve consideration in the when examining war. They become the basis of how the American military employs force. They are an important part of the American strategic culture. Moreover, through strategic culture, the Principles become the basis, whether conscious or subconscious, for many of the decisions the American military makes. Strategic culture and the Principles affect and will continue to influence the purchase of combat equipment. The military buys tanks, aircraft and

7

ships because they support the belief that these weapons are the most successful way to accomplish war as expressed in the Principles. Stealth aircraft embody the principles of Maneuver, Surprise, and maintaining the Offensive. Such aircraft reflect take advantage of the unique air environment to surprise, out-maneuver, and attack the enemy.

Strategic culture and the Principles even filter future operational concepts and visioning. Joint Vision 2020 lists four operational concepts for the military; Dominant maneuver, Precision Engagement, Focused Logistics, and Full Dimensional Protection, all supporting an overarching concept of Full Spectrum Dominance.[36] The descriptions of these concepts contain numerous references to the Principles of War. The operational concept of dominant maneuver uses "unmatched speed and agility in positioning and repositioning tailored forces from widely dispersed locations to achieve operational objectives quickly and decisively."[37] Within that relatively short statement are at least five of the Principles of War; maneuver, surprise, security, objective, and offensive. Thus, the U.S. military sees the future (and everything else) through filters the past.

PRINCIPLES AND STRATEGY AND DOCTRINE

The Principles of War influence military strategy through filters developed by strategic culture and historical experience. In the introduction to *The Making of Strategy: Rulers, States, and War*, Williamson Murray and Mark Grimsley describe the strategy process and "it's constant adaptation to shifting conditions and circumstances in a world where chance, uncertainty, and ambiguity dominate."[38]

> Historical experience creates preconceptions about the nature of war and politics and may generate irresistible strategic imperatives. And ideology and culture shape the course of decision-makers and their societies in both conscious and unconscious ways. Not only may ideology and culture generate threats where a different perspective would see none, but their influence usually shapes perceptions about alternatives.[39]

The Principles also influence doctrine. "Military doctrine presents fundamental principles that guide the employment of forces."[40] It represents an accumulation of knowledge, reflecting combat and training experiences, experimentation, and analysis of theory. It is basically a guide to the best way to prepare and employ U.S. military forces.[41] The Principles provided the basics of joint warfare and the foundation of joint and individual service doctrine.

Clausewitz tells us that the nature of war is universal. But the application of war is a cultural phenomenon and therefore heavily influenced by strategic culture. The application of force is affected by geography, politics, historical context, and social norms. The Roman empire

and its warrior state, Mao Tse-Tung's support of a guerrilla style of warfare, and the American dependence on power projection and technology all reflect unique sets of circumstances and very different strategic cultures.

The historical basis of the Principles of War supports the Clausewitzian ideal of developing theory, strategy, and doctrine by examining the historical record.[42] Lieutenant Commander Dudley W. Knox, USN, identified the relationship between the Principles of War and doctrine when he wrote in 1915 that "military doctrine are beliefs or teachings which have been reasoned from principles; that is they flow from principles as a source. They are intended to be general *guides to the application* (emphasis in original) of mutually accepted principles, and thus furnish a practical basis for coordination under the extremely difficult conditions governing contact between hostile forces."[43] He continues on to discuss the increased number of possible solutions to situations involving the application of several different principles and doctrines, which implies the value of the concept of adaptability as a principle and as a means to avoid inflexibility and dogma.[44]

PRINCIPLES AND JOINT WARFARE

Joint warfare is mandated by Goldwater-Nichols. At the basic of level, joint warfare is, or should be, one of the core competencies of the United States armed forces. Fighting the joint fight is the wave of the now and the future. Regardless of the nature of the battle or the composition of the force, the military will fight a joint fight … "the days of single Service warfare are gone forever."[45] The nature of war has not changed. It is still an interaction between living, thinking, reacting humans. However, the increased quantity of information and the complexity of the battlefield place a greater weight on the value of adaptability.

> War is a human undertaking that does not respond to deterministic rules. Indeed, the rapid advance of technology and the diversity of threats to national interests have accelerated and amplified the effects of the traditional obstacles to military operations of friction chance, and uncertainty. The cumulative effect of these obstacles is often described as "the fog of war" and places a burden on the commander to remain responsive, versatile, and able to adjust in real time to seize opportunities and reduce vulnerabilities. This is the art of war.[46]

The Principles influence in Joint Warfare is crucial. They are universally accepted by all of the services. The Principles provide a common starting point for war fighting discussions. The Principles also form the launching platform for the planning of the military's future. Table 2 depicts a common joint warfighting perspective approved by the Joint Requirements Oversight

Council. These evolving fundamentals are used to guide the emerging American way of joint

warfare and crisis resolution. They provide direction and are the continuity needed for future

Current Joint Doctrine Principles of War, Principles for MOOTW, and Fundamentals of Joint Warfare			Evolving Fundamentals of 21st Century Joint Warfare and Crisis Resolution
Principles of War (JP 1-0 & 3-0)	Principles for MOOTW (JP 3-0 & 3-07)	Fundamentals of Joint Warfare (JP 1-0)	
• Objective	• Objective		• End State
• Offensive		• Initiative	• Initiative
		• Freedom of Action	
• Mass		• Concentration	• Application of Combat Power
• Economy of Force	• Restraint	• Extension	
• Maneuver			• Joint Maneuver
			• Tempo
• Unity of Command	• Unity of Effort	• Unity of Effort	• Unity of Effort
• Security	• Security		• Safeguarding the Force
• Surprise			• Shock
• Simplicity		• Clarity	• Understanding
		• Knowledge	
	• Perseverance		• Will
	• Legitimacy		• Legitimacy
		• Sustainment	• Sustainability
		• Agility	• Adaptability

TABLE 2. EVOLVING JOINT WARFARE AND CRISIS RESOLUTION FUNDAMENTALS[47]

fighting force development.[48] These 13 'new' aphorisms may eventually replace the current

Principles of War.[49]

DEFINITION OF ADAPTABILITY VERSUS FLEXIBILITY

Adapt: 1. To fit (a person or thing to another, to or for a purpose), to suit or make suitable; 2. To alter or modify so as to fit for a new use. 3. To undergo modification so as to fit for a new use.

—The Oxford English Dictionary, Second Edition

Flexible: 1. Capable of being bent, admitting of change in figure without breaking; yielding to pressure, pliable, pliant; 2. Willing or disposed to yield to influence or persuasion; capable of being guided, easily led, impressionable, manageable, tractable.

—The Oxford English Dictionary, Second Edition

Adaptability is fundamentally different from flexibility.[50] Flexibility is reactive or defensive by its very nature. From the definition, flexible suggests bending, but not breaking to an enemy or external force. However, the implication is that the enemy is driving the change (i.e., yielding to pressure). Conversely, adaptability has an active or offensive perception, which the U.S. Marines emphasize in their Fleet Marine Field Manual 1-0, *Leading Marines*.

> Adaptability has long been our key to overcoming the effects of frictions and its components. Although it is synonymous with flexibility, adaptability also embraces the spirit of innovation. Marines constantly seek to adapt new tactics, organization, and procedures to the realities of the environment. Deficiencies in existing practices are identified, outdated structure discarded, and modifications made to maintain function and utility. The ability to adapt enables Marines to be comfortable within an environment dominated by friction. Experience, common sense, and the critical application of judgment all help marine leaders persevered.[51]

Adaptability is associated with initiative, ingenuity, imagination, agility, and innovation. Lieutenant General Victor H. Krulak, USMC (Ret) said, "most often, the ingredients of victory are initiative, resourcefulness, adroitness, and improvisation … another way of describing adaptability, long a way of life for Marines."[52] Adaptability implies multiplicity in uses for the basic framework of doctrine, equipment, or personnel all of which should be adaptable to multiple situations, threats, or environments. This is important considering the uncertainty of the future threat and environment, the expansion of missions, the long lead times for hardware solutions and the increasing expense of weapons systems.

WHY ADAPTABILITY? … WHY NOW? … WHAT HAS CHANGED?

> Our challenge in this new century is a difficult one. It's really to prepare to defend our nation against the unknown, the uncertain and what we have to understand will be the unexpected. That may seem on the face of it an impossible task, but it is not. But to accomplish it, we have to put aside the comfortable ways of thinking and planning, take risks and try new things so that we can prepare our forces to deter and defeat adversaries that have not yet emerged to challenges.
>
> —Secretary of Defense Donald H. Rumsfeld

The convergence of several factors now and in the near term stresses the need to include Adaptability as a Principle of War. First is the uncertainty of the future environment. Increasing operations tempo and diversity of missions, a rapid and increasing rate of change in technologies, especially information technologies, and adaptable adversaries will blur future force requirements. Next is the significant rise in the nature and scope of the terrorism threat. Last is transformation and the continuing move towards jointness.

> [T]he focus … is the third element of our strategic approach – the need to prepare for an uncertain future.
>
> —U.S. Joint Chiefs of Staff, Joint Vision 2020

The future environment is a major element in determining the shape, size, and capabilities of the U.S. military. Three *Joint Vision 2020* factors guide the American military force-planning effort. First, the United States will continue to be globally engaged with various world and regional actors. Security and economic interests and political and social values will drive U.S. engagement policy. The military instrument will continue to remain a viable element of national power. There is no indication that war or the threat of war will cease to exist in the future. An ever-widening transportation and communications net and rapidly expanding information technologies will increase world inter-dependence and provide the inertia to continued globalization.[53]

Next, the expanding availability of the Internet and other information technologies will tend to 'level the playing field' with respect to access to new and developing technologies at relatively low costs. Globalization will spread access to a commercial industrial database. This will give potential adversaries access to much of the same technology as the U.S. military.[54] Finally, America's adversaries will modify their strategies and operational and tactical capabilities in an attempt to reduce U.S. technological advantages. Other state and non-state actors will challenge current U.S. military dominance in variety of innovative and asymmetric ways.[55] They will not remain static in the face of American capabilities. They will adapt.[56]

The future environment requires the current military to transform. A key challenge to successful transformation is the pace of technological change and its impact on the strategic environment. The U.S. military must "place a premium on our ability to foster innovation in our people and organizations across the entire range of joint operations."[57] In the context of a military organization that is resistant to change, adaptability is the key to success in an uncertain future. Adaptability as a Principle of War and thus part of strategic culture will link the American military current and future forces. Strong core capabilities derived from current force structure and legacy systems will continue to deter conflict and when that fails, win wars. Transformation will combine developing technologies with new doctrine and concepts implemented through new organizations that maximize the future American military's capabilities. Adaptability is the bridge that allows us to modify existing core competencies to meet the future mid-term strategic realities.[58]

> In the few months it took to topple the Taliban regime, U.S. forces proved highly adaptable. They went to war in Afghanistan without an on-the-shelf plan in a very difficult environment. They showed ingenuity in tackling the challenges of operating half way around the world in some of the most forbidding terrain on the planet. And the fact that a key breakthrough at Mazar-i Sharif was secured by the first American cavalry charge of the 21st century merely underscores the point. This capacity for adaptation is a precious commodity. It will be essential not only in the ensuing phases of the war against terrorism but also in transforming the Armed Forces to cope with the very different challenges that will emerge in the future.

—Secretary of Defense Donald H. Rumsfeld

September 11, 2001 … the attack on the United States changed the focus of the American government, people, and military. Terrorism is not new. It has been around for centuries. It has not been a driving factor in military planning or thought. Terrorism is a "tool of the weak" with potential dramatic strategic effects.[59] Terrorism is now a major feature in the future environment. It is a major factor driving the requirement for adaptability in the military.

Terrorism is defined in the U.S. by the Code of Federal Regulations as: "..the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives."[60] The term terrorism and terrorist were popularized in the early 1790's in France and Great Britain. But taking a broader definition of the terms and actual 'acts of terror', terrorism goes back much further.

Terrorism can be traced back to the Ancient Greek and Roman Republics. According to the U.S. Code definition, the assassination of Julius Caesar on the Ides of March in 44 B.C. was an act of terrorism.[61] In the first century, Jewish religious nationalists known as The Zealots-Sicarii (dagger-wielders) "carried out terrorist attacks on Roman officials and Jews considered to be Roman collaborators."[62] For over 200 years between 1047 and 1296 the Hashishim (the Assassins) prosecuted a campaign of terrorism in northern Iran.[63] And one of the best-known illustrations of the impact terrorism can have was the assassination of the Austrian Archduke Ferdinand in 1914 that precipitated over four years of world war.[64]

A modern view of future terrorism divides terrorists and their organizations into four different categories; individual terrorists, national liberation movements, state sponsored terrorists and millenarian terrorists. The millenarian terrorist presents the greatest danger to the United States. The millenarian terrorist's vision of the future does not include anything Americans would call civilization. They would be "willing to use any means of violence,

13

including weapons of mass destruction"[65] in the pursuit of those goals. Stealthy movements across international boarders, secure operations, and extreme procedures against penetration from outsiders will characterize their organizations. They will plan and coordinate operations by combining old fashion couriers and new technology communications systems. Increasing globalization provides the cover from which they will operate.[66] "But above all, the terrorist of the 21st Century will prove adaptable to the environment in which they chose to fight."[67]

This opponent is not greatly affected by diplomacy or the traditional use of the military instrument of power. Nevertheless, the military will be called and must prevail in this war. This fight is for the survival of the United States and its ideals and freedoms.[68] "The key is to adapt with changing times and a different enemy."[69] Adaptability, ingenuity, innovation ... these are the attributes of the military that will face and defeat terrorism.

TRANSFORMATION

> One of the things that we don't want to leave behind as we move toward tomorrow is the ability to think, the ability to adapt, the ability to do things that the Soviet Union was not able to do and is no more.
>
> —General Tom Franks

Transformation in the military is the most important reason to add Adaptability to the Principles of War. On the future battlefield, Adaptability provides another guide to the conduct of war. As part of the strategic culture, Adaptability will allow the military to excel in the uncertain future. Transformation requires adaptability and innovation to get to the future. The U.S. Department of Defense defines transformation as:

> Transformation is a process of change that involves developing new operational concepts, experimenting to determine which ones work and which do not, and implementing those that do. Transformation deals with changes in the way military forces are organized, trained, and equipped; changes in the doctrine, tactics, techniques, and procedures that determine how they are employed; changes in the way they are led; and changes in the way they interact with one another to produce effects in battles and campaigns. The objective of the transformation process is to realize military capabilities that can deal effectively with the new demands of a changing security environment. Transformation involves preserving current US strengths, meeting new threats and environments, and exploiting new opportunities. To some extent, transformation means accelerating the development and fielding of capabilities that we know we need. But it also means exploring capabilities that are less well understood, and correcting the course we are on, as necessary, to ensure that those needed new capabilities are realized.[70]

Large organizations have a difficult time with major changes of direction.[71] But for the American military, transformation is needed. In his 2002 report to President Bush and the Congress, Secretary Rumsfeld reported "transforming the U.S. Armed Forces is necessary because the challenges presented by this new century are vastly different from those of the last century."[72]

Transformation has three dimensions; conceptual, cultural, and technological. Technology alone has never been the answer to transformation.[73] It is only a small part of the answer. Technology is an enabler that allows the military to explore new ways of fighting.[74] Transformational gains in the U.S. military require changes in how war is conceptualized, in how the military is organized, and in its strategic culture. The attack on Mazar-i Sharif, Afghanistan provided the first cavalry attack of the 21st century and showed "that a revolution in military affairs is about more than building new high tech weapons … it's also about new ways of thinking, and new ways of fighting."[75]

The most significant of the three dimensions of transformation is strategic culture. "Values and culture are a vital institutional counterweight to the innate conservatism of military hierarchies and the inertia of large bureaucracies."[76] For successful transformation, the most important cultural characteristic is adaptability. Identifying Adaptability as a Principle of War provides impetus to change the American military strategic culture.

Four factors influence innovation and transformation; development of a balanced and operationally realistic vision, bureaucratic acceptance, institutionally processes for testing and refining concepts, and chance.[77] Strategic culture can affect each of these factors. A strategic culture that encourages innovation and adaptation is essential to successful transformation. The culture must encourage leaders and subordinates to critically assess and re-assess situations and adapt if necessary to the current circumstances. "Preparing for the future will require us to think differently and develop the kinds of forces and capabilities that can adapt quickly to new challenges and to unexpected circumstances. An ability to adapt will be critical in a world where surprise and uncertainty are the defining characteristics of our new security environment."[78]

ADAPTABILITY IN WAR

> Its [war's] violence is not of the kind that explodes in a single discharge, but is the effect of forces that do not always develop in exactly the same manner or to the same degree. At times they will expand sufficiently to overcome the resistance of inertia or friction; at others they are too weak to have any effect. War is a pulsation of violence, variable in strength and therefore variable in the speed with

which it explodes and discharges its energy. War moves on its goal with varying speeds; but it always lasts long enough for influence to be exerted on the goal and of its own course to be changed in one way or another⸺long enough, in other words, to remain subject to the action of a superior intelligence.

Carl von Clausewitz, On War

Clausewitz refers to military warriors and leaders who not only must survive in the chaos of war but also must successfully operate and accomplish American missions in support of the bigger picture. His concept is that the very nature of war changes war itself, as it occurs, and that these changes are unpredictable prior to their happening. The events in war are non-linear interactions between living, thinking, reacting humans. Clausewitz's chance, fog, and friction combine to make war unpredictable and in a constant state of change. The continuous interaction and feedback process, fundamental to war, are themselves an agent forcing uncertainty and change in the character of any war … in other words war changes itself. Such an environment demands adaptability to account for unplanned, unpredictable, and unforeseeable opportunities and setbacks.

Fog, friction, and chance permeate the battlefield. The complexity found in war is a reflection of its nonlinear nature. This nonlinear phenomenon guarantees no two wars are ever the same and that even within the same war, the structure may be unstable. War is so complex that imperceptibly small events can lead to significant and massive changes in the system. The production of unchanging laws or principles can lead to defeat. "Adaptability is as important in doctrine as on the battlefield."[79]

IN WAR AND PLANNING

Military planning has long known the value of adaptability. The United States Army anticipates that operations "never proceed exactly as planned"[80] and places a premium on adaptability in plans. Using branches and sequels to account for contingencies, unanticipated events, opportunities, successes, failures, and stalemates, Army planning reflects the American military's value of adaptability.[81] B.H. Liddell Hart argued for adaptable plans when he said "[T]o be practical, any plan must take account of the enemy's power to frustrate it; the best chance of overcoming such obstruction is to have a plan that can be easily varied to fit the circumstances met; to keep such adaptability, while still keeping the initiative, the best way to operate is along a line which offers alternative objectives."[82] Field Marshal Helmuth Graf von Moltke described war's complex environment and argues for commanders to use genius, experience, education, and adaptability.

16

The material and moral consequences of any larger encounter are, however, so far-reaching that through them a completely different situation is created, which then becomes the basis for new measures. *No plan of operations can look with any certainty beyond the first meeting with the major forces of the enemy.* (emphasis added) The commander is compelled during the whole campaign to reach decisions on the basis of situations which cannot be predicted. All consecutive acts of war are, therefore, not executions of a premeditated plan, but spontaneous actions, directed by military tact. The problem is to grasp, in innumerable special cases, the actual situation which is covered by the mist of uncertainty, to appraise the facts correctly and to guess the unknown elements, to reach a decision quickly and then to carry it out forcefully and relentlessly . . . . It is obvious that theoretical knowledge will not suffice, but that here the qualities of mind and character come to a free, practical and artistic expression, although schooled by military training and led by experiences from military history or from life itself.[83]

The campaign against Iraqi ballistic missile forces during the Persian Gulf War provides a glimpse at how pre-war expectations did not match actual wartime conditions and the how American military forces attempted to adapt. The Desert Storm air plan contained four key phases; the strategic air campaign, air supremacy in the Kuwaiti theater of operations, battlefield preparation and support of the ground offensive.[84] In August 1990, Central Command planners did not include any of the Iraqi ballistic missile capability in their target sets, but by December 1990, thirteen SCUD facilities were on the strategic air campaign target list. Planners knew that some number of mobile launchers would escape destruction. The leaders and planners regarded the missiles "chiefly as nuisance weapons that might cause political difficulties" and "as posing little tactical or operational threat to the Coalition."[85] Their plan reduced the offensive threat by attacking "fixed launch sites, support bases, production facilities, potential hide sites, and support facilities for mobile launchers, but not the launchers themselves."[86] The planners mirror-imaged the Soviet employment doctrine on the Iraqi military. This resulted in over-confidence in the American's ability to find, fix, target, and destroy the ballistic missile threat. No one in Central Command "devised, before the war, a search-and-destroy scheme for dealing with them [mobile SCUD launchers]."[87]

SCUD launches into Israel and Saudi Arabia highlighted failures in initial planning. Sorties dedicated to SCUD hunting were increased as the planners adapted to the current realities. However, more telling than the increase in dedicated sorties is the scope of the overall search for a solution to a problem that would not be solved by the wars end.[88] The search for an answer included previously untried uses and combinations of American military power. Space-based assets, Intelligence annalists, Patriot surface to air missiles, ATACMS, E-8 Joint STARS, F-15E, Tornado, F-16C, B-52, F-117, A-10, Tomahawks, and American and British SOF all

contributed to the attempt to solve the SCUD problem. The continuous adaptation and efforts in operations and tactics was strategically significant in keeping Israel from engaging with its own military.[89]

IN POLICIES AND STRATEGIES

The interactions of conflict change even the highest levels of war. The political aim and the strategies to attain it are not exempt from the effects of war. "It [the political aim] must adapt itself to its chosen means, a process which can radically change it.[90] Therefore, strategies must adapt if the political aim changes. History shows that strategic assessment and re-assessment is a common theme in victory. Changes in the nature of the conflict caused by a thinking and reactive adversary drove strategic adaptation. Failure to adapt can be fatal. "The great failure of the generation of military leaders in World War 1 was their refusal (with notable exceptions) to adapt quickly to change."[91]

In the Peloponnesian War, the Spartans were able to adapt their strategies better than the Athenians over the course of 20+ years of war. Eventually, the Spartans, a traditional land power, learned how to fight the Athenians, a traditional naval power, "on the sea well enough to win"[92]. The Corinthians described the Athenians as "swift, aggressive, and innovative" to the Spartans before the war. However, in the end the "slow, traditional, unimaginative Spartans"[93] were more able to adjust and adapt to the different ways of fighting encountered during the war.

One hundred and fifty years later, the near fatal disasters of the Second Punic War would precede the rise of the Roman Empire. Hannibal's victories forced the Romans to adapt their strategies. A brutal warrior state, Roman war making was primarily one that went for the kill; it was ruthless and free of any competing political demands. A retreating, defensive, attrition strategy[94] would not fit into this paradigm. Nevertheless, when Hannibal's operational military genius and his victories at Trebbia, Trasimene, Cannae, threatened the very existence of the Republic, the Roman dictator Fabius, was forced to modify his strategy.[95] The adapted strategy refused battle and harassed the enemy's army.[96] It substituted "practical discretion for traditional valor and retreat before the enemy in order to avoid a fourth, possibly fatal defeat.[97] Rome was able to modify and adapt its previously successful military strategy to survive. A century later, Polybius would highlight one of the Roman's strengths as the ability to adapt customs, weapons, tactics to "emulate what they see is better done by others."[98]

IN OPERATIONAL ART

One of the turning points and key battles of the American Civil War was Vicksburg campaign.[99] Ulysses S. Grant adapted his operational plans to reflect the reality of his army's situation. The strategic context, battle failures and successes, terrain, logistics, resources, and the threat's actions and reactions all forced changes in the six-month campaign. However, Grant always kept the strategic context of the campaign as a primary and unwavering factor in his plans.[100]

Grant's initial plan attacked along traditional lines of communications from his bases in Tennessee south towards Vicksburg.[101] He used railroads and roads to maintain lines of supply. The plan failed when Confederate cavalry attacked his supply depots and "demonstrated the impossibility of maintaining so long a line of road over which to draw supplies for an army moving in an enemy's country."[102] Grant abandoned this plan of attack.

Next, Grant started adapting his plans. He used the previous attack routes as a deception to support the primary attack from the Chickasaw Bayou.[103] The plan called for the use of the Union controlled Mississippi River as the "line over which to draw supplies."[104] Although, the Mississippi River would provide Grant a secure line of supply, the Confederate defenses along the Vicksburg cliffs would prove insurmountable obstacles to Union attacks. Again, Grant looked for another way.

Still using the Mississippi River as the primary supply route, Grant changed his plans. In an attempt to bypass the Chickasaw Bayou, Grant's forces maneuvered through the secondary creeks, rivers, and bayous to arrive north of Vicksburg.[105] This plan also failed. Continuing to look for a solution to the problem of defeating the Confederate forces, Grant modifies his plans once again. The resulting plan used an indirect approach and would eventually lead to victory.

Grant would adapt the final version of his campaign in March 1863. An amphibious landing near Grand Gulf established a beachhead south of Vicksburg while major diversions held the enemy's attention. Grant planned to use Grand Gulf as a base of supply. The west bank of the Mississippi River provided a secure, albeit long, supply route. A change in the status of Union forces finalized Grant's last and most radical adaptation to his plan.[106] In order to continue to maneuver and maintain pressure on the enemy, Grant decided to "cut loose from my base" and supply the entire Army off the land.[107] This was a risky move since "it had not been demonstrated that an army could operate in an enemy's territory depending upon the country for supplies."[108] Ultimately, this allowed Grant to position his army for the successful siege of Vicksburg.

ADAPTABILITY IN THE MILITARY

> Victory smiles upon those who anticipate the changes in the character of war, not upon those who wait to adapt themselves after they occur.

<div align="right">General Giulio Douhet</div>

THE INDIVIDUAL SERVICES

The American military values adaptability as a warfighting attribute. Through out recorded history, theorists have argued for adaptability. Sun Tzu declares the need for armies and leaders to adapt to the current environment. He said, "(A)s water has no constant form, there are in war no constant conditions. And as water shapes its flow in accordance with the ground, so an army manages its victory in accordance with the situation of the enemy."[109]

The U.S. Army values doctrine that is "rooted in time-tested principles but is forward-looking and adaptable to changing technologies, threats, and missions. Army doctrine is detailed enough to guide operations, yet flexible enough to allow commanders to exercise initiative when dealing with specific tactical and operational situations."[110] The Army recognizes

> (T)he ambiguous nature of the operational environment requires Army leaders who are self-aware and adaptive. Self-aware leaders understand their operational environment, can assess their own capabilities, determine their own strengths and weaknesses, and actively learn to overcome their weaknesses. Adaptive leaders must first be self-aware—then have the additional ability to recognize change in their operating environment, identify those changes, and learn how to adapt to succeed in their new environment."[111]

The Army has successfully adapted to changing conditions, new technologies and emerging threats in the past. The American soldier's ingenuity and innovation will continue to serve America during this period of transformation.[112]

The U.S. Navy identifies five core competencies and four key attributes of its sea-based, expeditionary force. The first on the list of competencies and attributes is adaptability. Naval forces are "capable of adapting to a variety of situations … and can support the many challenges facing our theater Combatant Commanders."[113] Their forward-deployed naval forces provide the nation with an organically supported, combined arms force that "can adapt at a moment's notice to emergent needs."[114] Those forward deployed forces require exceptional leaders. The "unique and unforgiving nature of the sea has demanded that naval forces and their leaders have not only a clear sense of purpose and extensive levels of training, but the flexibility to adapt to a changing enemy/environment in order to be victorious."[115]

The U.S. Marines are the epitome of adaptability. They even describe war as a "process of continuous mutual adaptation, of give and take, move and countermove."[116] They argue that success follows the ability to adapt, to proactively shape the environment as well as react to changing conditions. Proactive shaping includes the identification and creation of opportunities instead of "adhering insistently to predetermined plans."[117] They embrace what adaptability brings to the acknowledged chaos and uncertainty that characterize the battlefield. Marines believe that adaptability is a key to overcoming the effects of friction and its components and that the ability to adapt enables Marines to be comfortable in this environment.[118]

'Flexibility is the Key to Air Power' has been associated with the beliefs of the U.S. Air Force long before it became a separate service. It remains a tenet of airpower today. The Combat Air Forces organize themselves by Aerospace Expeditionary Forces. This adaptable concept allows the Air Force to provide tailor-made air power packages to fit the Combatant Commander's requirements. The Air Force's approach to transformation is through innovation and adaptation. Airmen "were born of change and it remains a part of their character."[119]

THE FUTURE JOINT FORCE

The future of the U.S. military is joint. The creation of the future joint force and the capabilities needed to achieve full spectrum dominance will require adaptation and flexibility. The transformation of the current force to a force more joint in nature will require common frames of reference for concepts, capabilities, requirements, modularization, and service unique core capabilities. The joint perspective envisions a future joint war fighting force able to use an "adaptive blend of attrition and maneuver warfare"[120] in the ever-changing strategic and operational environments the American military will face. The joint force will combine adaptive service capabilities to accomplish assigned missions (see Figure 1). This synergistic approach will apply the right force at the right time in the right place. These adaptive capabilities, leaders, warriors, and systems are foundational to the future joint force. "Having the ability to recognize, adapt and tailor the inherent 'multi-use' capabilities of the future joint force across the range of military operations will permit exploitation of those resources to resolve a crisis situation."[121]

Adapt Warfighting Capabilities Relative to Desired US Strategic Objective

Adapt based on desired operational objective or outcome

US Joint Expeditionary Warfighting Capabilities

Provide U.S. Civil/ Domestic Support

Defeat Any Adversary

Control Any Situation

Desired US strategic objective across the Range of Military Operations

Adapt based on desired operational objective or outcome

US Joint Expeditionary Warfighting 'multi-use' combat capabilities will have their application adapted & tailored in order to achieve the desired US strategic objective
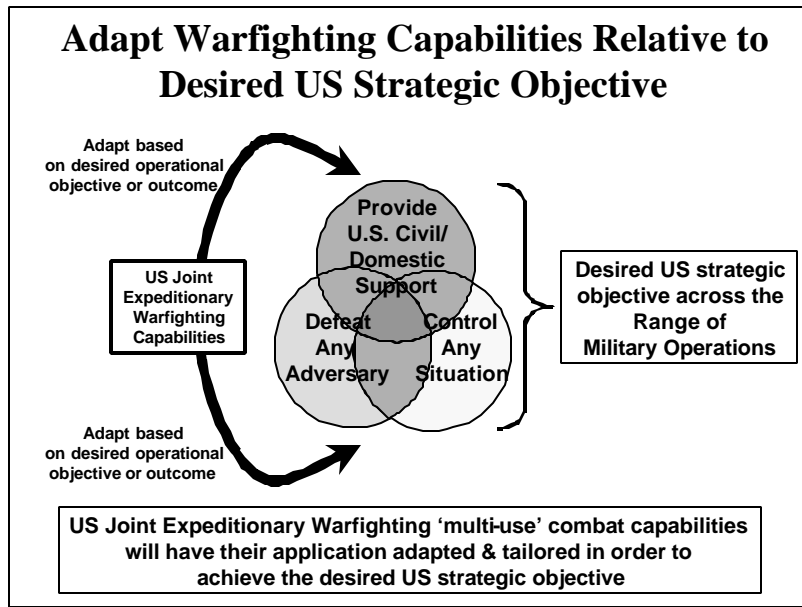
FIGURE 1. JOINT REQUIREMENTS OVERSIGHT COUNCIL ADAPTABILITY CONTEXT[122]

An adaptive joint force will find it easier to integrate new technologies, overcome challenges from adapting adversaries, and succeed in the chaotic battlefield than today's military. Information technology will continue to grow and be a major enabler of the future joint force. "During the last two decades of the twentieth century, previously unimaginable tools for handling and using information have become widespread … these tools bring great potential advantages, but they also bring a need for both cultural adaptation and perhaps for more insightful leadership practices."[123]

The applicability and effectiveness of the U.S. military in future roles will depend on unique combinations of organizations, capabilities, equipment, and people. Adaptability in multiple situations comes for combining the core competencies of the services into a joint team. These teams will depend on "well-educated, motivated and competent people who can adapt to the many demands of future joint missions.[124]

The crucial element in the future force will always be the people. "The emerging capabilities required for future joint operations calls for a new culture that emphasizes adaptability in its personnel."[125] This joint force will require a cultural change that openly emphasizes an expeditionary and joint team mindset. Individual energy, innovation, imagination, and diversity must be merged with traditional military standards of motivation, discipline, dedication, integrity, teamwork, and professionalism. In the future environments

22

"U.S. joint forces must be capable of adapting their warfighting capabilities to crisis resolution situations without loss of operational effectiveness."[126]

Developing and educating people who embrace adaptability and who can effectively apply the joint forces across the entire range of military operations is crucial, but the joint team will also require global power projection capabilities. The starting point is expeditionary forces that are modular in nature. Joint Commanders will be able to tailor forces to the immediate needs of the mission. These service elements will have a common basis from which to operate - joint concepts, known capabilities, and integrated architectures. They will be able to immediately integrate into the joint command structure, provide operational and tactical competences to the fight and do so regardless of the make up of the rest of the joint force.[127]

Transformation to this future joint force will bring new challenges to all areas of the military. Dogmas from individual service prejudices to joint 'everybody must play' mentalities, from weapon systems acquisition to peacetime and wartime organizations, from strategy to tactics should be examined and modified to maximize the benefits of transformation. The road to transformation and the future joint force is through adaptability. It is time to include adaptability in the Principles of War where it will positively influence American warfighting capability, future joint forces, and the military's cultures.

PROPOSED JOINT DEFINITION

The following is proposed joint definition of Adaptability is presented in the format of the current Joint Publication 1, Joint Warfare of the Armed Forces of the United States for Principles of War.[128]

Adaptability

   a. The purpose of adaptability is to actively endorse necessary altering or modifying combat operations, which aggressively find, force, and/or exploit opportunities, in reaction to localized conditions, at all levels on the battlefield.

   b. Adaptability requires that military personnel at all levels understand the strategic, operational, and tactical objectives supporting commander's intent. Adaptability acknowledges the nature of war, characterized by chaos, volatility, violence, chance, friction, and fog, on achieving those goals. It encourages alteration and modification of planned actions in light of the current combat situations in order to efficiently and effectively accomplish the mission and support the commander's intent. Adaptability is applicable to all other Principles of War except the Objective. Adaptability is ingenuity, resourcefulness, innovation, and imagination on an individual and group level. Adaptability is both mental and physical. It is the mental ability to

find, identify, and exploit non-linear patterns in the strategic, operational, or tactical environment. It the physical ability to act upon those patterns or force new ones more rapidly than the enemy and to do this with only the forces and capabilities on hand. Adaptability is a culture, a state of mind, and a characteristic of the American joint fighting force.

CONCLUSION

The Principles of War are an accepted tool to assist warfighters. They attempt to model those aspects of war the U.S. military feels are important to consider when planning for war or executing a campaign. The Principles also consciously and unconsciously influence the U.S. military establishment across a wide spectrum outside of war. These include, but are by no means limited to visioning the future military, weapons development and acquisition, and education of American military leadership.

The military has always respected adaptability as a hallmark of its warriors.

> There are numerous self-aware and adaptive leaders in our history—Lieutenant Colonel Hal Moore in the Ia Drang Valley; General of the Army Douglas MacArthur at Inchon; General Matthew Ridgeway taking command of Eighth Army in Korea; Major General William Sherman in the March to the Sea; and Lieutenant General Ulysses Grant's relentless assault on the Army of Northern Virginia. [129]

It has identified adaptabilities value in axioms like "no plan survives first contact with the enemy" or called it by other names such as "initiative" or "ingenuity." But the ability to take the commander's intent and plans and then adapt them to the current situation and environment in order to accomplish the mission is one of the traits of U.S. military fighting men and women and is arguably a trademark of American culture.

The Principles of War influence American military officers at every level of professional military education and throughout their careers. They are doctrinal foundations from which the American military builds unmatched global military capabilities in order to defend the nation, her people, and her interests. Incorporating Adaptability in the Principles will emphasize an attitude, mental ability, and physical characteristic that is already valued by all of the military services on the battlefield.

Service and Joint writings (publications, manuals, memorandums, etc) are full of references to the value of adaptability as a leadership and warrior attribute. They argue for the value of adaptability in the effective integration of joint, multinational, and interagency organizations. Adaptability ensures future warfighting capabilities are maximized to fit crisis resolution situations without a loss of operational effectiveness. [130] The U.S. military designates

adaptability as an asset for the future enemy. This enemy seeks to defeat the United States by adapting to avoid U.S. military strengths.

The goal is a military, joint in nature, proficient in the application of power across the spectrum of conflict, educated in military history and doctrine, well led with technologically advanced tools, and the ability to adapt to the Combatant Commander's unique requirements. With the continuing complexity of the battlefield, the blurring of lines between strategic, operational, and tactical events and outcomes, and the increased range of military operations, the adoption of adaptability as a Principle of War is an extraordinary opportunity to influence the continuation of U.S. military dominance.

Adding Adaptability to the Principles of War will encourage a strategic culture that allows exploration and experimentation. When combined with critical thinking, a solid historical foundation, and technical competence, adaptability will provide the continuing basis for a military able to meet and defeat any threat it faces. It will create an environment in which 'out of the box' thinking officers can grow. Adaptability is an imperative when matched with the uncertainty of the future, diverse and adaptive threats, joint warfare, and the expanding use of the military. The United States military sees the value of adaptability in history, uses it in current operations, seeks it out, and encourages it. It is needed for the future warfighting force. Raise adaptability to its proper place, codified it and make it a Principles of War!

Word Count = 9,977

ENDNOTES

[1] U.S. Joint Chiefs of Staff, <u>Joint Vision 2020</u> (Washington, D.C.: U.S. Government Printing Office, June 2000), 6.

[2] Ibid., 1.

[3] Ibid., 2.

[4] Ibid., 3.

[5] U.S. Joint Chiefs of Staff, <u>Joint Warfare of the Armed Forces of the United States</u>, Joint Publication 1 (Washington, D.C.: U.S. Government Printing Office, 14 November 2000), viii.

[6] Since the United States Air Force, Army, Navy and Marines all accept not only the same nine Principles of War, but also the concept that there are principles as a concept, I will not question their acceptance in the Armed Services here. This does not mean that the current nine Principles should not be examined and questioned …. but just that it is beyond the scope of the issue in question. In fact to maintain relevancy, the Principles should be the subject of continuous re-assessment and in particular should be examined under the light of technology, its rapid changes and the applicability of those new technologies on warfare. The bad guys have already shown they are willing to adapt to our strengths and weaknesses and then employ our technology in innovative and asymmetric ways against us.

[7] John Algers, <u>The Quest for Victory: The History of the Principles of War</u> (Westport, CN: Greenwood Press, 1982). John Algers book provides a complete history of the Principles of War. His exploration of the history of principles of war starts Sun Tzu and continues through the 1978 version of the United States Army Principles of War published in FM 100-1, 29 September 1978 and includes international versions of principles from various countries (friend, foe and neutral) around the world. He also includes a list of 68 different lists of principles covering over 2500 years of warfare.

[8] Bernard Brodie, <u>Strategy in the Missile Age</u> (Princeton, NJ: Princeton University Press, 1959), 23-27.

[9] U.S. Joint Chiefs of Staff, <u>Joint Warfare of the Armed Forces of the United States</u>, B-1.

[10] Ibid., vi.

[11] U.S. Department of the Air Force, <u>Air Force Basic Doctrine</u>, Air Force Doctrine Document 1 (Washington, D.C.: U.S. Government Printing Office, September 1997), 12.

[12] U.S. Department of the Navy, <u>Navel Warfare</u>, Naval Doctrine Publication 1 (Washington, D.C.: U.S. Government Printing Office, 28 March 1994), 43.

[13] U.S. Department of the Army, <u>Operations</u>, United States Army Field Manual 3-0 (Washington, D.C.: U.S. Government Printing Office, 14 June 2001), 4-2.

[14] Russell W. Glenn, "No More Principles of War", <u>Parameters</u> 28, no 1 (Spring 1998), 51-52.

[15] David Evans, <u>War: A Matter of Principles</u> (New York, NY: St. Martin's Press Inc., 1997), 2.

[16] Algers, <u>The Quest for Victory</u>, xvi – xxiii.

[17] Sun Tzu, <u>The Art of War</u>, trans Samuel B. Griffith (New York, NY: Oxford University Press, 1963), 63.

[18] Algers, <u>The Quest for Victory</u>, 6-7,

[19] Niccolo Machiavelli, <u>The Art of War</u>. trans. Ellis Farneworth, (Cambridge, MA: Da Capo Press, 2001), 270-272.

[20] Algers, <u>The Quest for Victory</u>, 18-19.

[21] Ibid., 21-23.

[22] Ibid., 28

[23] Bernard Brodie, <u>War and Politics</u> (New York, NY: Macmillian Publishing Co., Inc, 1973), 446.

[24] Carl von Clausewitz, <u>Principles of War</u>, trans Hans W. Gatzke (Harrisburg, PA: The Telegraph Press, 1942), 11.

[25] U.S. Department of the Air Force, <u>Air Force Basic Doctrine</u>, Air Force Doctrine Document 1, 12. As an example, USAF Basic Doctrine says the principles "serve as valuable guides to evaluate potential courses of action. These principles … provide a bsis for judgement in employing military forces." They are guides for planning, learning, evaluation, and actions and not to be used as absolutes.

[26] Carl von Clausewitz, <u>On War</u>, ed. and trans by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 151.

[27] Ibid., 152.

[28] Algers, <u>The Quest for Victory</u>, 160-170. It is interesting to note that no other military in the world has the exact same set of Principles as do the United States … not even our closest allies. Again, John Algers' book, The Quest for Victory, documents many of the lists of principles from ancient and modern countries.

[29] U.S. War Department, Field Service Regulations, United States Army Field Service Regulations, 1923, (Washington, D.C.: Government Printing Office, 1923), pg III.

[30] Edward S. Johnston, "A Science of War", <u>The Command General Staff School Quarterly</u> 14, no 53 (Jun 1934): 97-124, 140-141.

[31] Ibid., 97-124, 140-141.

[32] Sun Tzu, <u>The Art of War</u>, 84.

[33] Colin S. Gray, "Defense Planning for the Mystery Four Principles for Guidance in a Period of Nonlinear Change", <u>Airpower Journal</u> Volume V, No. 2 (Summer 1991): 24. Also see Ken Booth, <u>Strategy and Ethnocentrism</u> (New York, NY: Holmes & Meier Publishers, Inc., 1979), 121.

[34] For discussion, see Carl H. Builder, The Masks of War: American Military Styles in Strategy and Analysis, (Baltimore: Johns Hopkins University Press, 1989).

[35] Alvin H. Bernstein, "The Strategy of a Warrior-State: Rome and the Wars against Carthage, 264-201 B.C." in <u>The Making of Strategy: Rulers, States, and War</u>, ed. Williamson Murray, MacGregor Knox, and Alvin Bernstein (New York, NY: Cambridge University Press, 1994), 80-81.

[36] U.S. Joint Chiefs of Staff, Joint Vision 2020, June 2000, 20-30

[37] U.S. Joint Chiefs of Staff, Joint Vision 2020, June 2000, 20

[38] Williamson Murray and Mark Grimsley, "Introduction: On Strategy" in <u>The Making of Strategy: Rulers, States, and War</u>, ed. Williamson Murray, MacGregor Knox, and Alvin Bernstein (New York, NY: Cambridge University Press, 1994), 1.

[39] Ibid., 2.

[40] U.S. Joint Chiefs of Staff, <u>Joint Warfare of the Armed Forces of the United States</u>, I-8.

[41] U.S. Department of the Air Force, <u>Air Force Basic Doctrine</u>, 1-2.

[42] Clausewitz, <u>On War</u>, 170-174.

[43] Dudley W. Knox, "The Role of Doctrine in Navel Warfare", <u>Proceedings</u> 41, no 2 (March-April 1915), in <u>Art of War Colloquium</u>, ed Wallace P. Franz and Harry P. Summers, Jr., (Carlisle, PA: United States Army War College, November 1983), 49-50.

[44] Ibid., 50-51.

[45] David E. Jeremiah, quoted in U.S. Joint Chiefs of Staff, <u>Joint Warfare of the Armed Forces of the United States</u>, III-1.

[46] U.S. Joint Chiefs of Staff, <u>Joint Warfare of the Armed Forces of the United States</u>, III-4.

[47] U.S. Joint Staff, Directorate for Operational Plans and Joint Force Development, "An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century", 14.

[48] U.S. Joint Staff, Directorate for Operational Plans and Joint Force Development, "An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century", memorandum 022-03 for the Joint Requirements Oversight Council, 28 January 2003, 1.

[49] As noted earlier, Air Marshal David Evans said that the principles should always be questioned, tested and have their relevance verified. If the current Principles can no longer provide adequate guidance to our warriors on the battlefield, then they have lost their relevancy as the tool they are supposed to be. These Joint Evolving Fundamentals represent the foundations of the new American beliefs in what succeeds in war or what we would call the Principles of War.

[50] Robert S. Frost, The Growing Imperative to Adopt "Flexibility" as an American Principle of War, Strategic Research Project (Carlisle Barracks: U.S. Army War College, 15 October 1999). In this 1999 Army War College paper, Lt Col Robert S. Frost, USAF, argues for adopting flexibility as an American Principle of War. He uses the term flexibility and adaptability interchangeably.

[51] U.S. Department of the Navy, Leading Marines, Fleet Marine Field Manual 1-0 (Washington, D.C.: U.S. Government Printing Office, 3 January 1995), 66.

[52] Ibid.

[53] U.S. Department of Defense, Quadrennial Defense Review Report, 30 September 2001, (Washington, D.C.: U.S. Government Printing Office, 30 September 2001), 1-7.

[54] Matthew G. Devost, Brian K. Houghton, and Neal A. Pollard, Information Terrorism: Can You Trust Your Toaster?, available from http://www.ndu.edu/inss/siws/ch3.html. Internet. Accessed 12 December 2002. Also see Lt Col William R. Fast, USA, Knowledge Strategies: Balancing Ends, Ways, and Means in the Information Age, available from http://www.ndu.edu/inss/siws/ch1.html.

[55] Kenneth F. McKenzie, Jr. "The Rise of Asymmetric Threats: Priorities for Defense Planning," in QDR 2001; Strategy-Driven Choices For America's Security, ed Michele A. Flournoy (Washington, D.C.: National Defense University Press, 2001), 75-102.

[56] U.S. Joint Chiefs of Staff, Joint Vision 2020, 4.

[57] Ibid., 3.

[58] Hans Binnendijk and Richard L. Kugler, "Managing Change: Capability, Adaptability, and Transformation", Defense Horizons 1, (June 2001): 1-8.

[59] Douglas V. Johnson II and John R Martin, "Terrorism Viewed Historically", in Defeating Terrorism: Strategic Issue Analyses, ed. John R. Martin, January 2002; available from

http://www.carlisle.army.mil/ssi/pubs/2002/terror/terror.htm. Internet. Accessed 3 January 2003, 1-2.

[60] U.S. Code of Federal Regulations, 28 C.F.R. secs. 0.85 (1 July 2002), available from http://frwebgate6.access.gpo.gov/cgi-bin/waisgate.cgi?WAISdocID=779917500222+1+0+0&WAISaction=retrieve. Internet. Accessed 10 Dec 2002.

[61] Jessica Stern, The Ultimate Terrorists, (Cambridge, MA, Harvard University Press, 1999),15-17. Also see Robert A. Friedlander, Terror-Violence: Aspects of Social Control, (New York, NY: Oceana Publications, 1983), 7-19.

[62] Sean Anderson and Stephen Sloan, eds., Historical Dictionary of Terrorism (Metuchen, NJ: Scarecrow Press, 1995), 371-372.

[63] Johnson and Martin, "Terrorism Viewed Historically", 1.

[64] Larry H. Addington, The Patterns of War Since The Eighteenth Century, 2nd ed. (Bloomington, IN: Indiana University Press, 1994), 134.

[65] Brad Hosmer, Robert Scales, and Williamson Murray, "The Nature of Terrorism", Unpublished Defense Science Board Paper, September 2002, 18-19.

[66] Ibid.

[67] Ibid., 23.

[68] Ibid., 21.

[69] Richard B. Myers, "We Can Not Rest On Our Success", interview by Gerry J. Gilmore, Defense Link, 13 September 2002, available from http://www.defenselink.mil/news/Sep2002/n09132002_200209135.html; Internet; accessed 1 October 2002.

[70] Jim McCarthy, General, USAF (ret) et al, Transformational Study Report for Secretary of Defense (Washington, D.C.: U.S. Government Printing Office, 27 April 2001), 3.

[71] Dorn et al, American Military Culture in the Twenty-First Century, 49. Robert Killebrew, a CSIS conference participant pointed out that because culture is, among other things, the accumulated experience of the service, it tends to reinforce existing ways of doing business.

[72] Donald H. Rumsfeld, Annual Report to the President and Congress, 2002 (Washington, D.C.: U.S. Government Printing Office, 2002), 2.

[73] Ibid., 67-68.

[74] Barry Watts and Williamson Murray, "Military Innovation in Peacetime," in <u>Military Innovation in the Interwar Period</u>, ed. Williamson Murray and Allan R. Millett (New York, NY: Cambridge University Press, 1996), 371-372.

[75] Donald H. Rumsfeld, "21st Century Transformation of U.S. Armed Forces", speech, National Defense University, Ft McNair, Washington, D.C., 31 Jan 2002, available from http://www.defenselink.mil/speeches/2002/s20020131-secdef.html. Internet. Accessed 15 September, 2002.

[76] Dorn et al, <u>American Military Culture in the Twenty-First Century</u>, 42.

[77] Watts and Murray, "Military Innovation in Peacetime," 406-415.

[78] Rumsfeld, "21st Century Transformation of U.S. Armed Forces", speech.

[79] Alan D. Beyerchen, "Clausewitz, Nonlinearity and the Unpredictability of War", <u>International Security</u> 17, no 3 (Winter 1992), 59-90.

[80] U.S. Department of the Army, <u>Operations</u>, 6-5.

[81] Ibid., 6-5. United States Navy, Marine and Air Force doctrine all have references to similar concepts.

[82] B.H. Liddell Hart, quoted in Richard B. Myers, <u>Joint Doctrine for Campaign Planning</u>, Joint Publication 5-00.1 (Washington, D.C.: U.S. Government Printing Office, 25 January 2002), II-19.

[83] Helmuth Karl von Moltke, quoted in Edward Mead Earle, ed., <u>The Makers of Modern Strategy: Military Thought from Machiavelli to Hitler</u> (Princeton, NJ: Princeton University Press, 1943), 179.

[84] Thomas A. Keaney and Eliot A. Cohen, <u>Gulf War Air Power Survey Summary Report</u> (Washington, D.C.: U.S. Government Printing Office, 1993), 33-51.

[85] Ibid, 43.

[86] Ibid.

[87] Ibid.

[88] Ibid., 83. Approximately 1500 strikes were flown against SCUD targets. Richard P. Hallion, <u>Storm Over Iraq: Air Power and the Gulf War</u> (Washington, D.C., Smithsonian Institution Press, 1992) places the number at over 2500 sorties flown against the same target set. This number does not paint an accurate picture since it includes sorties that were launched on SCUD search and destroy missions, and then after not finding any mobile launchers, dropped ordinance against validated secondary targets.

[89] William Rosenau, Special Operation Forces and Elusive Enemy Ground Targets: Lessons from Vietnam and the Persian Gulf War, 2001, available from http://www.rand.org/publications/MR/MR1408/MR1408.ch3.pdf Internet. Accessed 10 October 2002, 29-44.

[90] Clausewitz, On War, 87.

[91] Robert R. Leonard, The Principles of War for the Information Age (Novato, CA: Presidio Press, 1998), 5.

[92] Donald Kagan, "Athenian Strategy in the Peloponnesian War" in The Making of Strategy: Rulers, States, and War, ed. Williamson Murray, MacGregor Knox, and Alvin Bernstein (New York, NY: Cambridge University Press, 1994), 55.

[93] Ibid.

[94] Alvin H. Bernstein, "The Strategy of a Warrior-State: Rome and the Wars against Carthage, 264-201 B.C.", 80-81.

[95] Polybius, The Rise of the Roman Empire, trans Ian Scott-Kilvert (New York, NY: Penguin Putnam Inc., 1979), 236-275.

[96] Bernstein, "The Strategy of a Warrior-State: Rome and the Wars against Carthage, 264-201 B.C", 68.

[97] Ibid., 84.

[98] Polybius, The Rise of the Roman Empire, 318-338.

[99] Leonard Fullenkamp, Stephen Bowman, and Jay Luvaas, eds, Guide to the Vicksburg Campaign (Lawrence, KS: University Press of Kansas, 1998). This book offers a complete account of the Vicksburg Campaign including accounts from General Grant's personal memoirs and other participants accounts in the many battles for the control of Vicksburg.

[100] Ulysses S. Grant,.Personal Memoirs of U.S. Grant, 2nd ed. (Cambridge, MA: Da Capo Press, 2001), 231. General U.S. Grant talks of the strategic nature of the success or failure of the Vicksburg Campaign by saying: "At this time the North had become very much discouraged. Many strong Union men believed that the war must prove a failure. The elections of 1862 had gone against the party which was for the prosecution of the war to save the Union if it took the last man and the last dollar. Voluntary enlistments had ceased throughout the greater part of the north, and the draft had been resorted to to fill up our ranks. It was my judgment at the time that to make a backward movement as long as that from Vicksburg to Memphis, would be interpreted, by many of those yet full of hope for the preservation of the Union, as a defeat, and that the draft would be resisted, desertions ensue and the power to capture and punish deserters lots. There was nothing left to be done but to *go forward to a decisive victory* (emphasis in original). This was in my mind from the moment I took command in person at Young's Point."

[101] Fullenkamp, Bowman, Luvaas, eds, <u>Guide to the Vicksburg Campaign</u>, 25-32.

[102] Grant, <u>Personal Memoirs of U.S. Grant</u>, 419-435.

[103] Fullenkamp, Bowman, Luvaas, eds, <u>Guide to the Vicksburg Campaign</u>, 39-74.

[104] Grant, <u>Personal Memoirs of U.S. Grant</u>, 419-435.

[105] Fullenkamp, Bowman, Luvaas, eds, <u>Guide to the Vicksburg Campaign</u>, 85-111.

[106] Ibid., 127-

[107] Grant, <u>Personal Memoirs of U.S. Grant</u>, 200-201.

[108] Grant, <u>Personal Memoirs of U.S. Grant</u>, 32.

[109] Sun Tzu, <u>The Art of War</u>, 101.

[110] U.S. Department of the Army, <u>Operations</u>, 1-14.

[111] U.S. Department of the Army, <u>The Army</u>, Field Manual 1, (Washington, D.C.: U.S. Government Printing Office, 14 June 2001), 12-13.

[112] Ibid., 14.

[113] U.S. Department of the Navy, Naval Warfare, Naval Doctrine Publication 1, (Washington, D.C.: U.S. Government Printing Office, 28 March 1994), 10-11.

[114] U.S. Department of the Navy, <u>Vision, Presence, Power</u>, (Washington, D.C.: U.S. Government Printing Office, 2002), 5-9.

[115] U.S. Department of the Navy, Naval Planning, Naval Doctrine Publication 5, (Washington, D.C.: U.S. Government Printing Office, 15 January 1996), 3-6.

[116] U.S. Department of the Navy, <u>Warfighting</u>, Marine Corps Doctrinal Publication 1, (Washington, D.C.: U.S. Government Printing Office, 20 June 1997), 3-4.

[117] Ibid., 80-81.

[118] U.S. Department of the Navy, <u>Marine Corps Operations</u>, Marine Corps Doctrine Publication 1-0, (Washington, D.C.: U.S. Government Printing Office, 27 September 2001), 6-2 – 6-40.

[119] U.S. Department of the Air Force, <u>America's Air Force; Vision 2020, Global Vigilance, Reach and Power</u>, (Washington, D.C.: U.S. Government Printing Office, 2002), 5-10.

[120] U.S. Joint Staff, Directorate for Operational Plans and Joint Force Development, "Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century", 7.

[121] Ibid., 10.

[122] Ibid.

[123] Dorn et al, <u>American Military Culture in the Twenty-First Century</u>, 69.

[124] U.S. Joint Chiefs of Staff, <u>Joint Vision 2020</u>, 7.

[125] U.S. Joint Staff, Directorate for Operational Plans and Joint Force Development, "Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century", 11.

[126] Ibid., 5-6.

[127] The JROC Memorandum 022-03 uses the term "plug and play".

[128] U.S. Joint Chiefs of Staff, <u>Joint Warfare of the Armed Forces of the United States</u>, B1-B2.

[129] U.S. Department of the Army, <u>The Army</u>, Field Manual 1, 12-13.

[130] Some examples can be found in FMFM 1-0, *Leading Marines*; Joint Pub 1, *Joint Warfare of the Armed Forces of the United States*; and JROC Memorandum 022-03, *An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century* to name just a few.

BIBLIOGRAPHY

Addington, Larry H. <u>The Patterns of War Since The Eighteenth Century</u>, 2nd ed. Bloomington, IN: Indiana University Press, 1994.

Alger, John I. <u>The Quest For Victory: The History of the Principles of War</u>. Westport, CN: Greenwood Press, 1982.

Anderson, Sean and Stephen Sloan, eds., <u>Historical Dictionary of Terrorism</u>. Metuchen, NJ: Scarecrow Press, 1995.

Barnett, Correlli. <u>The Swordbearers; Supreme Command In The First World War</u>. London: Cassell & Co, 2001.

Bernstein, Alvin H. "The Strategy of a Warrior-State: Rome and the Wars against Carthage, 264-201 B.C.". In <u>The Making of Strategy: Rulers, States, and War</u>, ed. Williamson Murray, MacGregor Knox, and Alvin Bernstein. New York, NY: Cambridge University Press, 1994.

Beyerchen, Alan D. "Clausewitz, Nonlinearity and the Unpredictability of War". <u>International Security</u> 17, no 3 (Winter 1992): 59-90.

Binnendijk, Hans and Richard L. Kugler. "Managing Change: Capability, Adaptability, and Transformation". <u>Defense Horizons</u> 1 (June 2001): 1-8.

Booth, Ken. <u>Strategy and Ethnocentrism</u>. New York, NY: Holmes & Meier Publishers, Inc., 1979.

Brodie, Bernard. <u>Strategy in the Missile Age.</u> Princeton, NJ: Princeton University Press, 1959.

Brodie, Bernard. <u>War and Politics.</u> New York, NY: Macmillian Publishing Co., Inc, 1973.

Builder, Carl H. <u>The Masks of War: American Military Styles in Strategy and Analysis</u> Baltimore, MD: Johns Hopkins University Press, 1989.

Clausewitz, Carl von. <u>On War</u>. Ed. and translated by Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1976.

Clausewitz, Carl von. <u>Principles of War</u>. Translated by Hans W. Gatzke. Harrisburg, PA: The Telegraph Press, 1942.

Devost, Matthew G., Brian K. Houghton, and Neal A. Pollard. <u>Information Terrorism: Can You Trust Your Toaster?</u>, 1 October 2002. Available from http://www.ndu.edu/inss/siws/ch3.html. Internet. Accessed 12 December 2002.

Dorn, Edwin, Howard D. Graves, Walter F. Ulmer, Jr., Joseph J. Collins, and T.O. Jacobs. <u>American Military Culture in the Twenty-First Century</u>. Washington, D.C.: The CSIS Press, February 2000.

Evans, David. <u>War: A Matter of Principles</u>. New York, NY: St. Martin's Press Inc., 1997.

Fast, William R., <u>Knowledge Strategies: Balancing Ends, Ways, and Means in the Information Age</u>, 1 October 2002. Available from http://www.ndu.edu/inss/siws/ch1.html. Accessed 12 December 2002.

Friedlander, Robert A. <u>Terror-Violence: Aspects of Social Control</u>. New York, NY: Oceana Publications, 1983.

Frost, Robert S. <u>The Growing Imperative to Adopt "Flexibility" as an American Principle of War</u>. Strategic Research Project. Carlisle Barracks: U.S. Army War College, 15 October 1999.

Fullenkamp, Leonard, Stephen Bowman, and Jay Luvaas, eds. <u>Guide to the Vicksburg Campaign</u>. Lawrence, KS: University Press of Kansas, 1998.

Glenn, Russell W. "No More Principles of War". <u>Parameters</u> 28, no 1 (Spring 1998): 48-66.

Grant, Ulysses S. <u>Personal Memoirs of U.S. Grant</u>, 2nd ed. Cambridge, MA: Da Capo Press, 2001.

Gray, Colin S. "Defense Planning for the Mystery Four Principles for Guidance in a Period of Nonlinear Change". <u>Airpower Journal</u> Volume V, No. 2 (Summer 1991): 18-26.

Hosmer, Brad, Robert Scales, and Williamson Murray, "The Nature of Terrorism", Unpublished Defense Science Board Paper, September 2002.

Hallion, Richard P. <u>Storm over Iraq</u>. Washington, D.C.: Smithsonian Institution Press, 1992.

Hart, B.H. Liddell. Quoted in Joint Chiefs of Staff. <u>Joint Doctrine for Campaign Planning</u>. Joint Publication 5-00.1. Washington, D.C.: U.S. Government Printing Office, 25 January 2002.

Johnson, Douglas V., II and John R Martin. "Terrorism Viewed Historically", in <u>Defeating Terrorism: Strategic Issue Analyses</u>. Ed. John R. Martin. January 2002. Available from http://www.carlisle.army.mil/ssi/pubs/2002/terror/terror.htm. Internet. Accessed 3 January 2003.

Johnston, Edward S. "A Science of War" <u>The Command General Staff School Quarterly</u> 14, no 53 (Jun 1934): 97-124, 140-141.

Jumper, John P. "Rising to the Challenge". Interview by Tom Philpott. <u>Military Officer</u>, 13 February 2003. Available from http://www.troa.org/Magazine/CurrentEdition/f_rising.asp. Internet. Accessed 14 February 2003.

Kagan, Donald. "Athenian Strategy in the Peloponnesian War" in <u>The Making of Strategy: Rulers, States, and War</u>, ed. Williamson Murray, MacGregor Knox, and Alvin Bernstein. New York, NY: Cambridge University Press, 1994.

Keaney, Thomas A. and Eliot A. Cohen, <u>Gulf War Air Power Survey Summary Report</u>. Washington, D.C.: U.S. Government Printing Office, 1993.

Knox, Dudley W. "The Role of Doctrine in Navel Warfare". <u>Proceedings</u> 41, no 2 (March-April 1915). In <u>Art of War Colloquium</u>, ed Wallace P. Franz and Harry P. Summers, Jr., 41-70. Carlisle, PA: United States Army War College, November 1983.

Kurzweil, Ray. "The Law of Accelerating Change". 7 March 2001. Available from http://www.kurzweilai.net/articles/art0134.html?printable=1. Internet. Accessed 15 Aug 2002.

Leonard, Robert R. The Principles of War for the Information Age. Novato, CA: Presidio Press, 1998.

Machiavelli, Niccolo. The Art of War. Translated by Ellis Farneworth. Cambridge, MA: Da Capo Press, 2001.

McCarthy, Jim, General, USAF (Ret), Admiral Stan Arthur, USN (Ret), Mr. Vic DeMarines, Dr. Ted Gold, Dr. Bill Graham, General Bill Hartzog, USA (Ret), Dr. Paul Kaminski, General Carl Mundy, USMC (Ret), Admiral Bill Studeman, USN (Ret), General Larry Welch, USAF (Ret). Transformational Study Report for Secretary of Defense. Washington D.C.: U.S. Government Printing Office, 27 April 2001.

McKenzie, Kenneth F., Jr. "The Rise of Asymmetric Threats: Priorities for Defense Planning." In QDR 2001; Strategy-Driven Choices For America's Security, ed Michele A. Flournoy, 75-102. Washington, D.C.: National Defense University Press, 2001.

Moltke, Helmuth Karl von. Quoted in Edward Mead Earle, ed., The Makers of Modern Strategy: Military Thought from Machiavelli to Hitler. Princeton, NJ: Princeton University Press, 1943.

Murray, Williamson, and Mark Grimsley. "Introduction: On Strategy" in The Making of Strategy: Rulers, States, and War, ed. Williamson Murray, MacGregor Knox, and Alvin Bernstein. New York, NY: Cambridge University Press, 1994.

Myers, Richard B. "We Can Not Rest On Our Success." Interview by Gerry J. Gilmore. Defense Link, 13 September 2002. Available from http://www.defenselink.mil/news/Sep2002/n09132002_200209135.html. Internet. Accessed 1 October 2002.

Polybius. The Rise of the Roman Empire. Translated by Ian Scott-Kilvert. New York, NY: Penguin Putnam Inc., 1979.

Rosenau, William. Special Operation Forces and Elusive Enemy Ground Targets: Lessons from Vietnam and the Persian Gulf War, November 2001. Available from http://www.rand.org/publications/MR/MR1408/MR1408.ch3.pdf. Internet. Accessed 10 October 2002.

Rumsfeld, Donald H. "21st Century Transformation of U.S. Armed Forces". Speech given at National Defense University, Ft McNair, Washington D.C., 31 Jan 2002. Available from http://www.defenselink.mil/speeches/2002/s20020131-secdef.html. Internet. Accessed 15 September, 2002.

Rumsfeld, Donald H. Annual Report to the President and Congress, 2002. Washington D.C.: U.S. Government Printing Office, 2002.

Stern, Jessica. The Ultimate Terrorists. Cambridge, MA: Harvard University Press, 1999.

Sun Tzu. The Art of War. Translated by Samuel B. Griffith. New York, NY: Oxford University Press, 1963.

U.S. Code of Federal Regulations 28 C.F.R. secs. 0.85. (1 July 2002). Available from http://frwebgate6.access.gpo.gov/cgi-bin/waisgate.cgi?WAISdocID=779917500222+1+0+0&WAISaction=retrieve. Internet. Accessed 10 Dec 2002.

U.S. Department of the Air Force. Air Force Basic Doctrine. Air Force Doctrine Document 1. Washington, D.C.: U.S. Government Printing Office, September 1997.

U.S. Department of the Air Force. America's Air Force; Vision 2020, Global Vigilance, Reach and Power. Washington, D.C.: U.S. Government Printing Office, 2002.

U.S. Department of the Army. The Army, Field Manual 1. Washington, D.C.: U.S. Government Printing Office, 14 June 2001.

U.S. Department of the Army. Operations. United States Army Field Manual 3-0. Washington, D.C.: U.S. Government Printing Office, 14 June 2001.

U.S. Department of Defense. Quadrennial Defense Review Report, 30 September 2001. Washington, D.C.: U.S. Government Printing Office, 30 September 2001.

U.S. Department of the Navy. Leading Marines. Fleet Marine Field Manual 1-0. Washington, D.C.: U.S. Government Printing Office, 3 January 1995.

U.S. Department of the Navy. Marine Corps Operations. Marine Corps Doctrine Publication 1-0. Washington, D.C.: U.S. Government Printing Office, 27 September 2001.

U.S. Department of the Navy. Navel Warfare. Naval Doctrine Publication 1. Washington, D.C.: U.S. Government Printing Office, 28 March 1994.

U.S. Department of the Navy. Naval Planning, Naval Doctrine Publication 5. Washington, D.C.: U.S. Government Printing Office, 15 January 1996.

U.S. Department of the Navy. Vision, Presence, Power. Washington, D.C.: U.S. Government Printing Office, 2002.

U.S. Department of the Navy. Warfighting. Marine Corps Doctrinal Publication 1. Washington, D.C.: U.S. Government Printing Office, 20 June 1997.

U.S. Joint Chiefs of Staff. Joint Vision 2020. Washington, D.C.: U.S. Government Printing Office, June 2000.

U.S. Joint Chiefs of Staff. Joint Warfare of the Armed Forces of the United States. Joint Publication 1. Washington, D.C.: U.S. Government Printing Office, 14 November 2000.

U.S. Joint Staff, Directorate for Operational Plans and Joint Force Development. "An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century". Memorandum 022-03 for the Joint Requirements Oversight Council. 28 January 2003.

Watts, Barry and Williamson Murray. "Military Innovation in Peacetime." In <u>Military Innovation in the Interwar Period</u>. Ed. Williamson Murray and Allan R. Millett. New York, NY: Cambridge University Press, 1996. 369-415.