An Evolving Joint Perspective:

US Joint Warfare and Crisis Resolution

In the 21st Century

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MEMORANDUM FOR THE JOINT REQUIREMENTS OVERSIGHT COUNCIL

Subject: An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century

The Joint Requirements Oversight Council concurs with the white paper entitled An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century and endorses its publication as a common frame of reference for future joint concept development. This document provides a credible, intellectual perspective of key joint characteristics and desired joint capabilities that are envisioned to transform the joint force and ensure our continued dominance across the range of military operations.

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A. Purpose

The President and Secretary of Defense have directed the Department of Defense (DOD) to transform in order to meet an uncertain future and the unfolding challenges of the 21st Century domestic and international security environments. As the Armed Forces of the United States transform, they must develop a common frame of reference to define and develop future joint force concepts, capabilities, requirements, and Service-provided forces. The existing frames of reference for the joint force are joint doctrine and Joint Vision. Joint doctrine only provides a common frame of reference for the current joint force. It does not, however, address the development or experimentation of future concepts and capabilities that could improve joint force operations. The Joint Vision provides a broad future vision and construct for military transformation. However, it contains little actionable detail for joint force planning and development. Joint doctrine and Joint Vision together will provide a baseline to help focus the development and comparative analysis of emerging concepts, capabilities, requirements, and Service-provided forces that will be employed within future joint warfare and crisis resolution.[1]

At the focal point of US military transformation and implementation is the Joint Requirements Oversight Council (JROC). The role of the JROC has evolved from a strictly materiel focus to a strategic integration role in the co-evolution of joint doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) critical force considerations. As the crossroads for joint vision related requirements generation and development, the JROC currently must evaluate concepts, capabilities, architectures and requirements from each Service. What is missing for the JROC's use is a common perspective on joint warfare and crisis resolution in the 21st Century from which the JROC can review, integrate and compare emerging joint concepts, capabilities, architecture and requirements.

To provide the missing common joint perspective for the JROC and address the Chairman's future joint vision in actionable detail, the Joint Staff's Directorate for Operational Plans and Joint Force Development (J-7) has worked on a JROC-sponsored project in collaboration with the Services, combatant commands, Joint Staff and defense agencies to develop *An Evolving Joint Perspective: US Joint Warfare and Crisis Resolution In the 21st Century*.

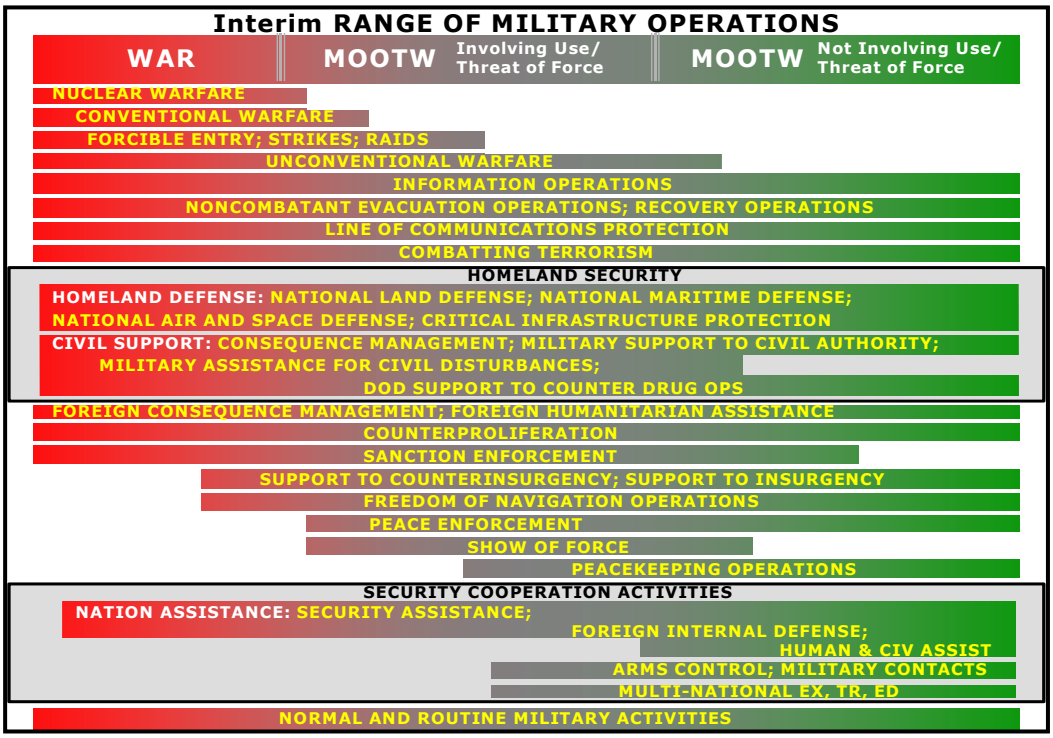
This document provides a **common joint warfighting perspective** intended to identify and describe the key elements and desired capabilities that comprise the evolving and emerging American way of joint warfare and crisis resolution for the foreseeable future. This joint perspective grows from an understanding of the current environment, focuses on Joint Vision as the azimuth, and serves as the foundation for transformation. It captures and defines emerging consensus on the desired shifts in the characteristics and conduct of joint warfare and crisis resolution as well as the evolving joint fundamentals that will help to achieve the desired goals[2] of military transformation. It provides an essential complement to Service transformation and warfighting perspectives

and an integrating context for joint concept and architecture development, the Requirements Generation System (RGS), and Force Planning and development efforts.

B. The Strategic and Operational Environment of the 21st Century

The most recent acts of terror against the US homeland exemplify the dangerous and uncertain strategic environment that will likely confront the United States in the future. Increasing political, economic, ethnic, and religious divisions, the diffusion of power among hostile state and non-state actors, population growth and a scarcity of natural resources, and the proliferation of dangerous technologies and weaponry are dramatically increasing the range of threats to the US homeland and the nation's global interests. These conditions are likely to endure and will both challenge and help shape the future joint force as it transforms. Evolving trends within the strategic and operational environments can be identified that both underscore the need for change and form the backdrop against which the Armed Forces of the United States will undergo transformation while conducting a broad range of military operations in the 21st Century (see Figure 1).[3]

Figure 1. Interim Range of Military Operations (JROCM 023-03)



Within the strategic environment:

- The United States will continue to have global interests and commitments requiring military power to protect and advance them.
- The joint force battlespace will be global and extend from the US homeland to include cyberspace and space.

- The United States will face external asymmetric threats that will require renewed vigilance and a focus on homeland security.
- The speed and scale of the proliferation of missile technology and the spread of CBRNE weapons and their means of delivery will increase, posing a fast growing challenge to land, maritime, air, and space capabilities at home and abroad.[4]
- The joint force will continue to rely heavily upon coordination and synchronization with interagency and multinational partners.
- The United States will retain the capacity to intervene unilaterally, but will usually operate within a coalition of like-minded powers and actors. Such coalitions may be relatively short lived and involve temporary arrangements rather than long term, pre-existing relationships.
- Religious extremism and intolerance, failing states, competition over natural resources and greater economic disparity among populations will all be growing problems.
- Potential adversaries will have greater access to a global commercial, industrial, and informational[5] base, providing them with niche capabilities intended to impede or defeat the capabilities or will of the US.
- Potential adversaries will adapt as our joint capabilities evolve.
- The appeal of asymmetric approaches that avoid US strengths and attack US vulnerabilities will continue to increase.
- Rapid urbanization and population concentration will continue to change the physical and political makeup of nations.

Within the operational environment:

- Successful future military operations will continue to require highly qualified personnel, trained to exacting standards and educated to function within a joint force context.
- Potential for major war, with overlapping regional conflicts or crises, will continue.
- A blending and compression of the levels of warfare[6] will increasingly result in tactical actions with strategic consequences.
- Information operations with responsive supporting knowledge management processes will be key to enabling decision superiority and increasing overall joint force operational effectiveness.
- Capabilities-based forces, possessing a broad array of resources that leverage existing and emerging air, land, maritime, cyber, and space strengths, will become a reality.

- Future joint command and control, supported by a common networked joint C4ISR architecture, will overcome joint, multinational and interagency interoperability challenges.
- Despite an increase in the sophistication of adversary anti-access and area denial strategies, US military capabilities will become more rapidly deployable, immediately employable, and increasingly lethal with extended operational reach.
- Future joint forces will increasingly be expected to conduct combat or crisis resolution operations within urban areas or across densely populated complex terrain.

C. The American Way of Joint Warfare and Crisis Resolution

As the Armed Forces of the United States conduct military operations in the 21st century there will continue to be a uniquely American philosophical and cultural approach to joint warfare. The evolution of US joint warfare and crisis resolution reflects the cumulative historical experience, values, traditions and character of the American people, their individual Military Services, and the unique institutions and governmental processes of the United States of America. **Joint warfare is team warfare** that requires the synchronized and integrated application of appropriate capabilities.[7] The US joint force in the 21st Century will:

- Emphasize synergistic[8] total joint force employment of active duty forces and the Reserve Components;
- Preserve the operational-level as the integrating joint force focal point;
- Leverage Service core competencies and capabilities for **unified action*;[9]
- Incorporate necessary capability redundancy with minimal duplication[10] in Service-provided forces and capabilities;
- Operate in synchronization with Interagency partners at the strategic and operational levels of warfare and crisis resolution;
- Enhance liaison capabilities and share appropriate DOTMLPF change recommendations[11] to achieve unity of effort and operational integration in multinational operations.

D. Operational Themes

The defense strategy of the United States guides the evolution of US joint warfare and crisis resolution by identifying several operational themes[12] to maintain US military preeminence in the 21st Century. These themes envision a Service-provided joint force transformed along the lines shown below. The themes should be woven into joint and Service requirements generation and Service force planning processes. The operational themes are:

- A shift from the capability to project a large portion of continental US-based forces over a relatively long time period to the ability to project a smaller but more capable joint force over a relatively short time period;
- Tailored combat forces that are joint and expeditionary[13] in character, rapidly deployable and immediately employable from a forward posture to assure US allies and partners, or dissuade, deter, or defeat an adversary when necessary, and include:
  - Global strike capabilities and Special Operations Forces to augment regional combat forces;
  - Continental US and forward based combat forces to augment forward deployed and initial expeditionary forces as required;
- The conduct of scaleable joint maneuver and precision strikes will be at varying depths, in all weather and terrain, to deny sanctuary, attack critical vulnerabilities, or defeat the efforts of an adversary even within distant anti-access and area-denial operational environments;
- The orchestration of the planning and execution of network-centric, effects-based[14] expeditionary warfare on a global scale;
- An increased emphasis on global joint C4ISR;
- Enhanced space operations and Information Operations (IO) capabilities as asymmetric core competencies;[15] and
- A missile defense capability to protect the US homeland and forward deployed forces, as well as US friends and allies.

E. Changing the Characteristics and Conduct[16] of US Joint Warfare and Crisis Resolution

In addition to the operational themes above, there are continual changes and evolving shifts in the characteristics and conduct of joint warfare and crisis resolution as the Armed Forces of the United States transforms from a 20th to a 21st Century joint force. These shifts in the characteristics and conduct of warfare identify and articulate the broad and pervasive operational changes the joint force will embody and employ for the achievement of national political and military objectives.

While the nature of war will continue to be characterized as the violent clash of wills between nations or armed groups to pursue advantageous political ends, the conduct of joint warfare will include both violent and non-violent means. Clearly, US joint forces must be prepared to fight and win the nation's wars. However, history has shown that the US military is a tool of statecraft that leaders use in roles beyond the mission of fighting and winning the nation's wars. Indeed, the US military has been and will continue to be employed in crisis resolution[17] situations across the globe and across the range of military operations. Therefore, US joint forces must be capable of adapting their warfighting capabilities to crisis resolution situations without loss of

operational effectiveness. In the 21st Century, the nature and purpose of crisis resolution will be characterized as follows:

Nature – Deteriorating situations involving natural or man-made catastrophes leading to potential humanitarian, societal or state instability, and the increased likelihood of conflict.

Purpose – Alleviate the conditions or consequences of the crisis, consistent with US national interests.

Figure 2. Evolving Shifts in Characteristics and Conduct of US Joint Warfare and Crisis Resolution in the 21st Century

Enduring **Nature**	Enduring **Purpose**	Changing the **Characteristics** of US Joint Warfare & Crisis Resolution in the 21st Century **(Distinctive Mark)**		Changing the **Conduct** of US Joint Warfare & Crisis Resolution in the 21st Century **(How)**	
		20th CENTURY	**21st CENTURY**	**20th CENTURY**	**21st CENTURY**
Of WAR • Violent clash of opposing wills	**Of WAR** • Impose will upon an adversary • Politics by another means • A better peace	Service-Based Maneuver Warfare	Joint Expeditionary Warfare	De-Conflicted Operations	Fully Integrated Joint Operations
				Regional Battlespace Perspective	Global Battlespace Perspective
		Interagency Coordination	Integrated Agency Actions	Interagency Coordination	Interagency Synchronization
		Synchronized & Integrated Military Forces	Self-Synchronized & Integrated Military Forces	Service-Based Interoperability	Joint-Based Interoperability
				Complementary Multinational Operations	Integrated Multinational Operations
Of CRISIS RESOLUTION Deteriorating situations: • Involving natural or manmade catastrophe • Leading to potential humanitarian, societal or nation-state instability • Leading to increased likelihood of conflict	**Of CRISIS RESOLUTION** Alleviate the conditions or consequences of the crisis, consistent with US national interests	Information-Based Operations	Situation Knowledge-Based Operations	Continuous Information & Data Generation	Continuous Knowledge Generation and Management
		Firepower Provides the Effects of Massed Forces	Knowledge, Maneuver and Precision Engagement Provide the Effect of Massed Forces	Target Effects-Aware	Effects-Based Targeting
				Platform-Centric Operations	Network-Centric Operations
		Pulsating Pressure	Continuous Pressure	Precise Force Application	Adaptive Force Application
				Engagement-Centric	Effects-Centric
				Sequential and Segmented Operations	Simultaneous, Distributed, & Parallel Operations
		Primarily Linear	Primarily Non-Linear	Contiguous Operations	Non-Contiguous Operations
				Supply-Based Logistics	Network Centric & Distribution-Based Log
				Combat Focus Threat-Based	Combat Focus on Capabilities-Based System of Systems
		US Homeland Perceived Secure	US Homeland Threatened	Strategic Deterrence as Homeland Defense	Proactive / Preemptive Homeland Security

To ensure coherency in the development of the joint force, transformational changes must be linked to the evolving or desired shifts in the characteristics and conduct of US joint warfare and crisis resolution. Figure 2 summarizes evolving shifts in the characteristics and conduct of US joint warfare and crisis resolution for the expanded range of military operations depicted in Figure 1. This evolution does not imply the shedding of past characteristics and conduct of US joint warfare. As an example, the shift from "Sequential and Segmented Operations" to "Simultaneous, Distributed and Parallel Operations" does not imply that sequential operations cannot be employed if required by the situation. Understanding this potential continuum, the matrix therefore describes the broadening role that the Armed Forces of the United States play in addressing the nation's security issues, and the ways that the US joint force is adapting to its growing role in a changed strategic environment. Identifying these evolving shifts will assist the JROC in its strategic integration role.

Enclosure 1 provides the next level of detail of the identified characteristic and conduct shifts for use as a comparative baseline with which the JROC can review and analyze new joint concepts, architectures, and DOTMLPF change recommendations.

F. An Evolving Joint Perspective for Full Spectrum Dominance Through *Unified Action and the Conduct of Joint Decisive Operations

Joint Warfare and Crisis Resolution is a joint force warfighting perspective that adapts and extends current US military theory and doctrine to accommodate these evolving shifts in the characteristics and conduct of joint warfare and crisis resolution in the 21st Century. This joint perspective is focused at the strategic and operational levels of warfare to integrate the joint force from Service-provided core competencies, concepts, capabilities and force structures. The perspective captures existing, new and transformational characteristics, capabilities, joint fundamentals, and imperatives[18] for further joint force development. The key feature threaded throughout this common joint warfighting perspective, is the overall capability for the joint force to successfully and effectively conduct operations to achieve ***full spectrum dominance*** across the range of military operations, inclusive of robust support for US Homeland Security efforts as directed.

> **Joint Warfare and Crisis Resolution**
> Operations executed by a scalable joint force capable of timely global projection, assured access, and immediate employment for desired strategic and operational level objectives in joint decisive operations; and sustainable even in an austere environment for extended periods or in an area-denial environment.

> **Full Spectrum Dominance**
> The decisive defeat of any adversary or control of any situation across the full range of military operations.

G. A New Synthesis in the US Approach to Warfighting

21st Century Joint Warfare will leverage US asymmetric advantages[19] in the ever-changing, strategic and operational environments US forces will face. It is the next progressive step in the maturation of joint warfare and a more adaptive blend of attrition and maneuver warfare. As a result, the US approach to joint warfighting will take on new meaning in the 21st Century.

The evolution of warfare has sometimes been academically described by styles (i.e. Attrition or Maneuver). These categorizations are predominantly methods for comparative historical analysis, especially prominent in the institutional education and development of the next generation of warriors and students of war. A brief historical treatment of the concepts of attrition warfare and maneuver warfare is particularly useful in understanding how the evolving US approach to joint warfare encompasses a synthesis of some of their more salient features.

Attrition Warfare has traditionally sought victory by applying firepower and massed forces to wear away an adversary's ability and will to resist through the wholesale destruction of his human and materiel means, usually requiring an extended period of time to accomplish. The aim is to exhaust the adversary before friendly forces become exhausted. In the past, it has pitted strength against strength and achieved success with a high cost in casualties for both sides. On the ground, attrition warfare has traditionally been primarily linear, firepower intensive, costly, and insensitive to issues such as collateral damage and displaced populations. Attrition warfare has seldom been the preferred approach. It has usually resulted when forces have been unable, often unexpectedly, to achieve a military decision rapidly. In such situations, the only alternative was to terminate the war on less than optimum terms or to attempt to wear down one's opponent over an extended period. In the latter part of the 20th Century, the development and employment, on a large-scale, of new capabilities in maneuver, Intelligence-Surveillance-Reconnaissance (ISR), and precision weapon systems fundamentally altered the utility and applicability of attrition warfare at the operational level. Superior technologies and the precise employment of the full range of military capabilities, linked by a fully integrated, networked joint C4ISR architecture, will increasingly permit the US to attain overwhelming advantages in the application of combat power. This will enable US joint forces to diminish a conventional adversary's critical warfighting resources rapidly and decisively through selective and precision-based attrition across the global battlespace.[20] Taking the next step and applying new attrition warfare techniques can progressively reduce unnecessary destruction and unacceptable collateral damage.

Maneuver Warfare in the 20th Century, from the American perspective, traditionally focused on a style of warfare that sought to pit strength against adversary weaknesses and center(s) of gravity. Maneuver warfare seeks to attack adversary vulnerabilities from a position of advantage through the synchronized application of movement and fires. In its current and future application, maneuver warfare requires centralized command and decentralized control and execution. Though it had attritional characteristics, particularly at critical times and places, "maneuver" was traditionally understood to mean, "movement in combination with fires to gain positional advantage." However, maneuver warfare now means much more: maneuver in time and space to **control the entire tempo** of an operation by exploiting or attacking adversary critical vulnerabilities that are the pathways to affecting adversary center(s) of gravity.

US joint forces are increasingly capable of blending the desirable features of both traditional attrition and maneuver warfare in a new way to achieve success. US joint forces can simultaneously apply joint combat power precisely at numerous points across the global battlespace. Such application can cause the effects of massive attrition in selected adversary capabilities while achieving rapid and decisive results in a manner traditionally associated

with maneuver warfare. Key to achieving these results is controlling the tempo of the operation.

Tempo refers to the cycle of operational activity in time that facilitates the continuous application of military force to achieve desired and synergistic effects against an adversary. It does not necessarily mean more action or faster activity. Its essence is to seize and retain the initiative and thus, gain freedom of action. Advantage in tempo may be achieved by aggressive action in terms of movement and fires, or it may be achieved by "slowing" activity, just as a sports team slows the pace by controlling the ball in order to "run out the clock" or set up a play. Tempo should be thought of in relative terms. The new paradigm of maneuver warfare is to control the tempo[21] in order to achieve the desired effect of continuous pressure[22] in multiple dimensions against adversary critical vulnerabilities and center(s) of gravity with the most appropriate means available.

Joint warfare and crisis resolution emphasizes proactive, precise decisions and effective execution. It elevates the joint operational art beyond the former characterization of the styles of warfare as either maneuver or attrition warfare. Instead, joint warfare will integrate the two styles of warfare into a single approach that is synergistic in its overall application. The joint force will view an adversary as a complex, adaptive system. It will attack critical vulnerabilities asymmetrically with joint force strengths, thereby controlling both the situation and tempo to achieve decisive results. In the combat application of 21st Century Joint Warfare, the future joint force will be able to tailor its force application so that the right force is used at the right time, and in the right place against multiple adversarial nodes and systems within the global battlespace. Networked joint forces, with continuous knowledge management, will conduct simultaneous, distributed and parallel operations synergistically across the levels of warfare, in depth. These operations will include the appropriate capabilities designed to shock, dislocate, disrupt or paralyze an adversary's political and military cohesion, will and capacity for continued resistance. The joint force will conduct these operations quickly, decisively and with the least cost in lives and other resources.

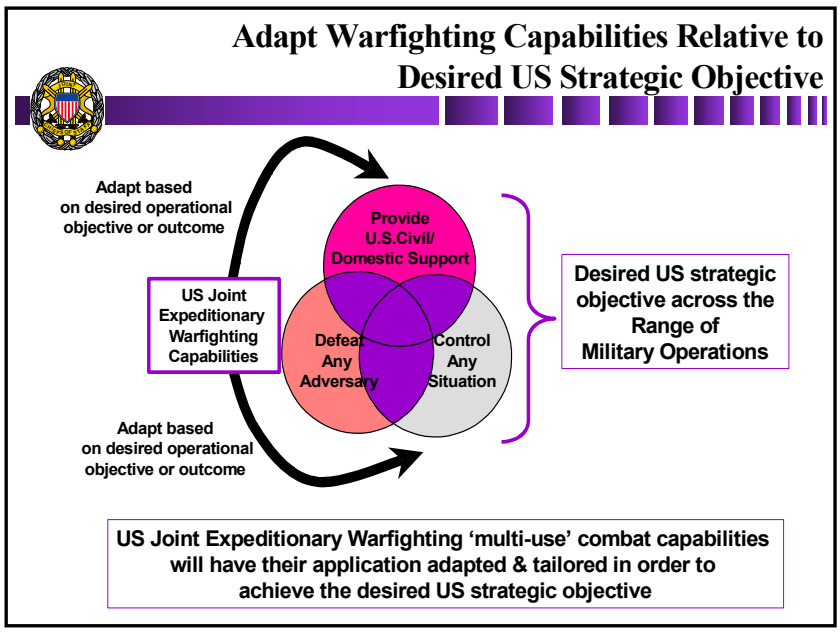
Joint warfare and crisis resolution favors the conduct of simultaneous, parallel and distributed operations across the levels of warfare throughout the global battlespace that control the operational tempo to ensure an adversary cannot effectively respond. Depending upon the desired operational-level objectives and outcomes, the joint force commander will control the tempo of action by employing an appropriate mix of capabilities (combat and non-combat, kinetic and non-kinetic, and lethal and non-lethal).

H. Adapting Warfighting Capabilities to Crisis Resolution[23]

A 21st Century capabilities-based joint force will remain principally focused on fighting and winning the nation's wars. Against adversaries, the successful conduct of joint operations will continue to involve global force projection, force employment, and sustainment capabilities. However, when dealing with crisis

resolution across the range of military operations, joint force warfighting capabilities must be adaptable to accomplish assigned missions (Figure 3). The intent is to either control or facilitate the control of the situation through the application of military capabilities in concert with other instruments of national and international power.

Figure 3. Adapting Warfighting Capabilities to Crisis Resolution



Having the ability to recognize, adapt and tailor the inherent 'multi-use' capabilities[24] of the future joint force across the range of military operations will permit exploitation of those resources to resolve a crisis situation. Moreover, a joint force's ability to operate within an austere environment or under area denial / anti-access conditions increases its usefulness in both combat and non-combat operations. In all situations, the joint force will seek Full Spectrum Dominance through **unified action* as a supporting or supported element of a larger national or multinational effort designed to achieve strategic and operational objectives, and outcomes.

21st Century Joint Warfare and Crisis Resolution requires certain defining expeditionary and joint team capabilities (Figure 4).

Figure 4. Expeditionary and Joint Team Capabilities of Joint Warfare and Crisis Resolution

- Timely global projection of a tailored joint force;
- Forcible entry into a joint operations area, when necessary;
- Immediate and synchronized employment of scaleable joint forces tailored to conduct simultaneously a broad range of joint military operations utilizing **unified action*;
- Sustainment for extended periods in an austere environment or under anti-access /area denial conditions; and
- Focused and continuous joint C4ISR employment and knowledge generation fusion.

Each of these capabilities is vital to the overall operational success of a joint force and provides critical considerations for joint concept development, joint requirements generation, and Service-based force planning.

The institutionalization of a pervasive "expeditionary and joint team mindset" in the Services is essential to the successful implementation of Joint Warfare and Crisis Resolution in the 21st Century. This mindset must permeate all aspects of future joint and Service force design, doctrine, capabilities, organization, training, equipment, deployment, employment, and sustainment. This amounts to nothing less than a cultural change that is essential to a more effective and coherent joint force. Dedicated, competent people who embody the spirit of the nation and the warrior ethos form the foundation for this cultural change. The joint force must fuse traditional military values – motivation, discipline, dedication, integrity, teamwork, and professionalism – with the energy, innovation, imagination and diversity of its individuals. The emerging capabilities required for future joint operations calls for a new culture that emphasizes adaptability in its personnel. To institutionalize this change the Armed Forces of the United States must develop common and comprehensive education, training and exercises across the range of military operations that reinforce the expeditionary and joint team approach to joint warfare.

I. Joint Decisive Operations

The implementation of Joint Warfare and Crisis Resolution in the 21st Century also requires the development of joint concepts, associated capabilities, and integrated architectures for the conduct of ***joint decisive operations*** across the range of military operations.

Joint decisive operations require joint force commanders to orchestrate synergistically

Joint Decisive Operations
The synergistic orchestration of joint force capabilities to achieve Full Spectrum Dominance. It is the US military component of **unified action*.

the core competencies and warfighting capabilities of Service-provided forces to achieve full spectrum dominance, including the provision of timely and effective US civil support. A key to successfully executing ***joint decisive operations*** is a joint force with a common networked joint C4ISR architecture and modular[25] forces tailored for immediate integration and interoperability--often called "plug and play"[26] forces.

Joint Vision is the azimuth for military transformation. It envisions an integrated joint force with Service-provided components that can conduct distributed and synergistic parallel warfare across the levels of warfare to isolate, disrupt, shock, or paralyze an adversary's complex adaptive system. Joint decisive operations further support the Joint Vision by expressly linking strategic outcomes to operational and tactical actions against an adversary's vital points, critical vulnerabilities, and center(s) of gravity. Ultimately, the future joint force must be able to conduct large-scale and sustained military operations at a controlled tempo throughout the global battlespace, including the US homeland. The future joint force must also be able to adapt its warfighting capabilities across the range of military operations and seek unity of effort and purpose through **unified action*.

J. Imperatives[27] for Capability and Force Planning and Development

To institutionalize and implement the proposed common joint warfighting perspective, the following imperatives were derived[28] from an analysis of the evolving shifts in the characteristics and conduct of joint warfare and crisis resolution. These imperatives will help guide the JROC in its analysis and comparison of new concepts, capabilities and architectures. They will also be useful guides for joint and Service force planning and the operational employment of joint forces.

- **Ingrain an expeditionary and "joint team" mindset into the Total Force,** to ensure a more globally deployable and interoperable joint force.**Develop, train and educate leaders,** to think strategically and to successfully apply the joint operational art across the range of military operations.**Develop versatile, adaptive joint expeditionary power projection forces with capabilities focused on warfare,** to enable sustained joint decisive operations across the full range of military operations.**Project globally "plug and play" expeditionary joint forces,** to enable immediate interagency and multinational collaboration and operational- level employment.
- **Conduct joint decisive operations in depth, simultaneously and in parallel across the levels of warfare,** to maximize friendly asymmetrical advantages, seize and maintain the initiative, achieve freedom of action, and apply overwhelming and precise force against adversaries.
- **Use effects-based *unified action*** to achieve objectives designed to shatter an adversary's political and military cohesion, will, and capacity

for resistance quickly, decisively, and at lowest cost in lives and other resources.

- **Secure US homeland and key strategic nodes,** to reduce the effectiveness of enemy asymmetric approaches while maintaining relentless, forward operational pressure to preempt enemy efforts.
- **Maintain continuous operational pressure against the adversary,** to control the operational tempo and momentum across the levels of warfare.
- **Seek full spectrum dominance through **unified action* and the conduct of joint decisive operations,** to synchronize all instruments of national and multinational power and apply appropriate military capabilities to help supported or supporting agencies assess, contain, stabilize, manage, and resolve any situation to achieve the desired strategic and operational objectives and outcomes.
- **Use the global battlespace,** to reach from the US homeland and forward positions to the area of conflict or crisis to conduct operational level, joint decisive operations.
- **Achieve greater precision and more relative situational knowledge in force and capability employment,** through focused and continuous ISR and information operations (i.e., deception, psychological operations, etc.) simultaneously across the levels of warfare.
- **Replace joint massed forces with superior situational knowledge, joint precision fires, self-synchronized[29] operational maneuver, and control of operational tempo,** to achieve or greatly exceed the comparable effect of massed forces.
- **Provide interagency and multinational partners with critical DOTMLPF change recommendations,** to enable **unified action* and to facilitate unity of effort under all circumstances.

K. The Application of the Principles of War and Principles for Military Operations Other Than War (MOOTW) to US Joint Warfare and Crisis Resolution in the 21st Century

The envisioned common joint warfighting perspective requires the inclusion of a discussion of how the future joint force might apply the current joint doctrine accepted principles of war[30] and principles for MOOTW[31] in its intention to wage joint warfare and resolve crises in the 21st Century. As the principles of war are "the enduring bedrock of US military doctrine,"[32] there is a necessity to describe the circumstances of their impact, as well as the impact of the principles for MOOTW, on employing the future joint force. In addition, there are two unique fundamentals of joint warfare (Sustainment[33] and Agility[34]) that are not adequately captured by the current principles of war and

MOOTW. Therefore, Sustainment and Agility must also be reviewed to describe the specifics of their impact on the employment of the future joint force.

Figure 5. Linking the Current Joint Doctrine Principles of War, Principles for MOOTW and Fundamentals of Joint Warfare to the Evolving Fundamentals of 21st Century Joint Warfare and Crisis Resolution

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

In order to achieve full spectrum dominance, the future joint force must be agile, versatile and resilient in its thinking, processes, and employment. As such, taking the steps to identify the themes and patterns of applying the current principles of war and MOOTW to meet the future complex environment across the range of military operations is essential to increase our advantage in the 21st Century. The descriptions in enclosure 2 clarify how the current principles may be interpreted and applied in response to the evolving shifts in the characteristics and conduct of US joint warfare and crisis resolution. The descriptions help frame the philosophical construct of this common joint warfighting perspective and reflect an evolution of the fundamentals of joint warfare, as shown in figure 7, to a proposed set of evolving fundamentals of 21st Century joint warfare and crisis resolution. As the current fundamentals of joint warfare are anchored in the application of the time tested principles of war,[35] these proposed evolving fundamentals of the 21st Century should be further evaluated in academic institutions as well as against the joint and service lessons learned. Ultimately, the proposed applications will need to be experimented upon and further tested to prove their validity.

L. Summary

The common joint warfighting perspective of ***Joint Warfare and Crisis Resolution in the 21st Century*** is focused upon achieving the Joint Vision effect of **full spectrum dominance** through ****unified action*** and the conduct of ***joint decisive operations*** across the **range of military operations**. It will be exemplified by the conduct of expeditionary power projection and joint decisive operations within the context of a robust US Homeland Security umbrella. The described shifts in the characteristics and conduct of joint warfare and crisis resolution from the 20th to the 21st Century provide a necessary construct and common joint warfighting perspective from which to view evolving joint and Service force planning, concept development and requirements generation. This common joint warfighting perspective, an essential complement to Service perspectives, more fully integrates Service core competent forces and capabilities into effective joint forces. It brings cohesiveness to the development of an integrated, effective and networked "plug and play" joint force. It also focuses the development of supporting joint concepts, capabilities, integrated architectures and transformation related metrics so that future joint forces, across the levels of warfare, will successfully achieve strategic and operational objectives and outcomes.

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ENCLOSURE (1)

The Evolving Shifts in the Characteristics and Conduct of Joint Warfare and Crisis Resolution

Changing the Characteristics and Conduct of Joint Warfare and Crisis Resolution in the 21st Century

While the nature of war will continue to be characterized as the violent clash of wills between nations or armed groups in the pursuit of advantageous political ends, the conduct of joint warfare includes both violent and non-violent means. Clearly, the Armed Forces of the United States must be prepared to fight and win the nation's wars. However, history has shown that the US military is a tool of statecraft that leaders use in roles beyond the mission of fighting and winning the nation's wars. Indeed, the US military has been and will continue to be employed in crisis resolution situations across the globe and across the range of military operations. Therefore, US joint forces must be capable of adapting their warfighting capabilities to crisis resolution situations without loss of operational effectiveness.

Crises are characterized by deteriorating 'situations' involving natural or man-made catastrophes leading to potential humanitarian, societal or state instability and the increased likelihood of conflict. Assigned missions associated with crisis resolution often require a joint force to alleviate the conditions or consequences of the crisis, consistent with US national interests.

Although the nature of war remains constant, the dynamic security environment has produced uncertainties regarding the focus and overall goal of US military transformation. For several years, the Military Services, combatant commands, and defense agencies have pursued separate but parallel transformation initiatives with varying degrees of success. The military knowledge and experience of senior leadership – civilian, military, and academic – has been focused on identifying and pursuing transformational shifts in the concepts, technologies, and capabilities that would constitute the achievement of a revolution in military affairs. Taken together, these parallel, independent, and analytical efforts represent a conscious and methodical effort to meet an uncertain future by deliberately changing both *the characteristics and the conduct* of US joint warfare and crisis resolution across all DOTMLPF critical force considerations.

Descriptions of the characteristics of joint warfare and crisis resolution capture the broad, distinctive attributes or features that define the comparative differences between the current doctrine and styles of warfare and crisis resolution to the future goals and expectations. Descriptions of the conduct of joint warfare and crisis resolution capture the comparative 'how' of the US military's execution of warfare and crisis resolution currently and in the future.

An examination of enduring US national interests and strategic concepts and the dynamic domestic and international security environments provide a

view of the challenges a future joint force must meet. In order to meet those challenges, the Armed Forces of the United States must broaden their capabilities. Without shedding its current strengths, it will need to undergo transformational change that embraces evolving shifts in the characteristics and conduct of US joint warfare and crisis resolution. Identifying these evolving shifts provides the overarching and guiding answer to the fundamental transformation question: "What are we transforming into?" These evolving shifts include the:

- Requirement to respond to multiple overlapping crises across the range of military operations in diverse (including urban and littoral) operational environments;
- Expansion of the battlespace perspective from the region of conflict to a more global perspective including the US homeland, space and cyberspace to capture a continuum of action, various operational dimensions and greater operational reach;
- Sustained joint maneuver and precision engagement (to include on a large-scale), enabled by greater, more persistent, and more responsive joint C4ISR;
- Shifts in joint operational employment from:
  - Sequential and pulsating pressure shifts to simultaneous and continuous pressure in parallel and distributed operations across the levels of warfare;

Parallel Operations
Operations conducted simultaneously across the levels of warfare. Implication is higher level of integration.

Distributed Operations
Operations conducted from dispersed locations across time and space to achieve the effects desired.

  - Sequential top-down planning and execution shifts to top-down guidance with bottom-up collaborative planning and execution;
  - De-conflicted and synchronized force application shifts to jointly integrated and self-synchronized force application at the operational-level of warfare;
  - Effects-aware shifts to effects-based targeting; and
  - Platform-centric shifts to network-centric operations;

- Combination of pervasive and timely knowledge management processes, and decision superiority as the basis for leveraging joint fires and maneuver;

Decision Superiority
State at which better decisions are arrived at and implemented faster than an opponent can react, or in a non-combat situation, at a tempo that allows the force to shape the situation or react to changes and accomplish its mission.

- Integration and synchronization of joint, interagency, and multinational actions explicitly linked to achieve strategic and operational-level objectives and outcomes;
- Blending and compression of the levels of warfare in which tactical-level actions against critical vulnerabilities that neutralize an adversary system of systems will be more directly linked to strategic and operational objectives and outcomes;
- Compelling, disproportionate and more positive impact on campaign objectives through compressed decision cycles and increased control of the operational tempo allowing the joint force to apply more precise fires, maneuver and capabilities earlier in a crisis; and
- Leaders trained, educated and developed to think strategically and apply the operational art.

Identification of unfolding trends and evolving or desired shifts in the characteristics and conduct of US joint warfare and crisis resolution are required to capture, align, and compare the desired changes in US joint force capabilities sought through transformation. To ensure coherency in the development of the joint force, transformational changes must be linked to these shifts in US joint warfare and crisis resolution.

The matrix depicted in Figure 6 summarizes the evolving shifts or anticipated changes in the characteristics and conduct of US joint warfare and crisis resolution. This evolution does not imply the shedding of past characteristics and conduct of US joint warfare. As an example, the shift from "Sequential and Segmented Operations" to "Simultaneous, Distributed and Parallel Operations" does not imply that sequential operations cannot be employed if required by the situation. Therefore, the matrix reflects an expansion of the joint force perspective beyond traditional 20th century paradigms to encompass the broadening role that the Armed Forces of the United States will play in addressing the nation's security issues. It also describes the ways the US joint force is adapting to its growing role in a changed strategic environment. Identifying these evolving shifts will assist the JROC in its strategic integration role. By taking the next step to develop the detail of the evolving shifts, the identified capabilities can potentially then be

converted into battlespace metrics[36] that could translate into documented performance measures for evaluating the future joint force.

Figure 6. Evolving Shifts in Characteristics and Conduct of US Joint Warfare and Crisis Resolution in the 21st Century

Enduring **Nature**	Enduring **Purpose**	Changing the **Characteristics** of US Joint Warfare & Crisis Resolution in the 21st Century **(Distinctive Mark)**		Changing the **Conduct** of US Joint Warfare & Crisis Resolution in the 21st Century **(How)**	
		20th CENTURY	**21st CENTURY**	**20th CENTURY**	**21st CENTURY**
Of WAR • Violent clash of opposing wills	**Of WAR** • Impose will upon an adversary • Politics by another means • A better peace	Service-Based Maneuver Warfare	Joint Expeditionary Warfare	De-Conflicted Operations	Fully Integrated Joint Operations
				Regional Battlespace Perspective	Global Battlespace Perspective
		Interagency Coordination	Integrated Agency Actions	Interagency Coordination	Interagency Synchronization
		Synchronized & Integrated Military Forces	Self-Synchronized & Integrated Military Forces	Service-Based Interoperability	Joint-Based Interoperability
				Complementary Multinational Operations	Integrated Multinational Operations
Of CRISIS RESOLUTION Deteriorating situations: • Involving natural or manmade catastrophe • Leading to potential humanitarian, societal or nation-state instability • Leading to increased likelihood of conflict	**Of CRISIS RESOLUTION** Alleviate the conditions or consequences of the crisis, consistent with US national interests	Information-Based Operations	Situation Knowledge-Based Operations	Continuous Information & Data Generation	Continuous Knowledge Generation and Management
		Firepower Provides the Effects of Massed Forces	Knowledge, Maneuver and Precision Engagement Provide the Effect of Massed Forces	Target Effects-Aware	Effects-Based Targeting
				Platform-Centric Operations	Network-Centric Operations
		Pulsating Pressure	Continuous Pressure	Precise Force Application	Adaptive Force Application
				Engagement-Centric	Effects-Centric
				Sequential and Segmented Operations	Simultaneous, Distributed, & Parallel Operations
		Primarily Linear	Primarily Non-Linear	Contiguous Operations	Non-Contiguous Operations
				Supply-Based Logistics	Network Centric & Distribution-Based Log
				Combat Focus Threat-Based	Combat Focus on Capabilities-Based System of Systems
		US Homeland Perceived Secure	US Homeland Threatened	Strategic Deterrence as Homeland Defense	Proactive / Preemptive Homeland Security

The matrices documented in this enclosure provide the next level of detail to the identified evolving shifts in the characteristics and conduct of US joint warfare and crisis resolution. It is expected that they will be used as a comparative baseline with which the JROC will review and analyze new joint concepts, architectures and DOTMLPF change recommendations.

EVOLVING SHIFTS IN CHARACTERISTICS OF US JOINT WARFARE AND CRISIS RESOLUTION FROM SERVICE-BASED MANEUVER TO JOINT EXPEDITIONARY WARFARE

20th CENTURY	21st CENTURY
SERVICE-BASED MANEUVER[37] WARFARE[38] Where each military service in their own dimensional arena employs maneuver to gain positional advantage relative to enemy centers of gravity[39] and/or critical vulnerabilities[40] in order to render opponents incapable of resisting by shattering their moral and physical cohesion rather than to destroy them physically through attrition.	**JOINT EXPEDITIONARY WARFARE** Fully integrated joint force warfighting capabilities exploited to shape[41] or shatter any potential adversary's political and military cohesion, will, and capacity for resistance through the conduct of multiple, parallel and distributed operations across the range of military operations.[42]
ATTRIBUTES	**ATTRIBUTES**
• Synchronized military forces applying Service capabilities, in a joint context, to achieve a cumulative effect based upon training to a set of Service core competencies	• Self-synchronized military forces applying Service capabilities, in a joint context, to achieve a synergistic effect, based upon training to a set of joint core competencies
• Information-Based, disparate C4I systems and component area responsibilities require Operations to be deconflicted	• Global knowledge-based joint C4ISR systems that enable better decisions and a fully integrated joint force
• Maneuver and Firepower provide massed effects	• Knowledge, maneuver and precision engagement provide massed effects
• Pulsating pressure on the adversary	• Continuous pressure on the adversary
• Primarily linear operations that are sequential	• Primarily non- linear operations that are simultaneous, distributed, and parallel
• Conduct of de-conflicted operations with a regional battlespace perspective	• Conduct of fully integrated joint operations with a global battlespace perspective
• Maneuver operations indirectly linking tactical operations to strategic outcomes	• Expeditionary operations directly linking tactical operations to strategic objectives /outcomes through application of decision superiority
• The ability to control the momentum and tempo at the Operational level is limited by the lack of connectivity between different Service-based systems and the subsequent ability to share a common operational picture	• A shared common operational picture through a global network enables the operational control of tempo and momentum to achieve the effects desired
• Characterized by adaptability, emphasis on the indirect approach, and not limited to a particular environment[43]	• Maximize current maneuver characteristics in all dimensions within the global battlespace

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM DE-CONFLICTED OPS TO FULLY INTEGRATED JOINT OPS

20th CENTURY	21st CENTURY
DE-CONFLICTED OPERATIONS The use of planning, coordination, operational / joint areas, control measures and liaison assets to eliminate fratricide and reduce conflict between such items as targeting, airspace and C3 systems.	**FULLY INTEGRATED JOINT OPERATIONS** The ability of US forces, tasked as a team, to operate unilaterally or in combination with multinational (MN) and interagency partners to shape the situation, dissuade, deter or if necessary defeat any adversary across the full range of military operations.
HOW ACCOMPLISHED	**HOW ACCOMPLISHED**
• Operational Force – TPFFD by OPLAN/CONPLAN that is very structured and may not be responsive to actual crisis	• Joint Force – tailored by capability, flexible and trained to react promptly to an adversary's adaptive system, within any given battlespace to achieve full spectrum dominance[48]
• Structured – service based joint task force headquarters controlling Service forces employed in their own dimensional area	• Capability tailored – the standing joint force headquarters enables the JFC to control scalable and modular Service-provided joint force capabilities that may be task-organized and employed in an integrated battlespace
• Platform centric – joint planning, coordination, and deconfliction based on strong vertical connectivity but limited horizontal networking	• Network Centric – linking the knowledge superiority of all assets to achieve global battlespace awareness to support "engagement quality" shared, comprehensive situation understanding[49]
• Networked – interconnected and share information, but not fully interoperable	• Seamless – common interconnected systems and effective application of "plug and play" capability to provide a common picture and transparent access for all joint, interagency and MN players across the global battlespace
• Service Centric – ➢ Complicated targeting requires deconfliction of duplicated targeting by different forces or echelons to synchronize the attack of those targets[44] ➢ Related operations by joint force components, but still stove piped by geographic boundaries of forces ➢ Use of liaison teams at nodal C3 systems	• Synergistic – combining and employing the capabilities of all Service, Interagency, multinational, and any other non-governmental or private organization assets toward a unified purpose
• Sequential – ➢ Top down, centralized planning and coordination executed through decentralized control ➢ Timing and physical / terrain control measure dependent[45] ➢ JFC may define operational areas or joint areas to assist in coordination and deconfliction[46] as well as establish airspace control measures to deconflict the multiple uses required of this space[47]	• Simultaneous – concurrent, real time collaborative planning and execution at all levels (strategic to tactical) through the use of common operational picture (COP) and operational net assessment (ONA) • Parallel – a higher level of integration among operations at the tactical, operational and strategic levels

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION
BATTLESPACE PERSPECTIVE: FROM REGIONAL TO GLOBAL

20th CENTURY	21st CENTURY
REGIONAL BATTLESPACE PERSPECTIVE The regional environment, factors and conditions commanders must understand to successfully apply combat power, protect the force, or complete the mission.	**GLOBAL BATTLESPACE PERSPECTIVE** The global environment, factors and conditions commanders must understand to successfully apply combat power, protect the force, or complete the mission.
HOW ACCOMPLISHED	**HOW ACCOMPLISHED**
• A separate Joint Force Commander is designated to control forces and military actions within one AO at each level	• Joint Force Commanders able to rapidly gain situational awareness and control forces throughout the network from widely dispersed AOs
• Regionally focused expertise and intelligence gathering to facilitate operations	• Knowledge management systems fuse regionally focused expertise and intelligence enabling updated global all source information
• Force protection issues addressed in AO only by JFC (Services/Force Providers still responsible in continental US or from overseas stations)	• JFC plans and coordinates Force Protection throughout the global battlespace (from Continental US or from overseas stations to AO)[50]
• JFC assigned assets/capabilities according to OPLANS/ CONPLANS (TPFDD) and links up with assets in Theater	• JFC provided with a global mission capabilities designed to integrate all instruments of National Power, Interagency and Multinational partners
• Regional Combatant Commanders establish JTFs and flow forces necessary to execute any assigned operation	• Regional combatant commanders have Standing Joint Force HQs, that are immediately prepared to enable the JFC to employ Service provided joint force capabilities
• AOR geographically assigned and subsequently subdivided into geographical Joint Operational Areas (JOAs/AOs)	• Missions assigned by capabilities and ability to influence the situation w/ seamless connectivity within the JOA
• JFCs work interagency coordination primarily through Combatant Commanders and country teams in their Regions	• JFCs interface directly with integrated interagency teams at the operational level to enhance **unified action* through greater reach-back within a larger global perspective

EVOLVING SHIFTS IN CHARACTERISTICS OF US JOINT WARFARE AND CRISIS RESOLUTION FROM INTERAGENCY COORDINATION TO INTEGRATED AGENCY ACTIONS

20th CENTURY	21st CENTURY
INTERAGENCY COORDINATION Military operations brought together with those of other agencies of the US Government (USG), non-governmental and private voluntary organizations, and regional and international organizations[51] through consensus of participants.	**INTEGRATED AGENCY ACTIONS** Synergistic application of Department of Defense, military service and other US governmental, non-governmental and volunteer agency resources to accomplish the objective through routine information sharing, simultaneous connectivity, uniform approach, mutual understanding, and a common purpose.[52]
ATTRIBUTES • Primary connectivity is vertical with limited informal horizontal connectivity • Segmented information and disparate situational picture among interagency partners • Planning is agency centric with execution limited by partial situational knowledge filtered through agency objectives • Interagency coordination is done only as directed • Liaison positions established as required and for limited duration • Consensual working relationships, functions and purpose, based on at-the-moment mission concerns	**ATTRIBUTES** • Fully integrated and interoperable networked joint C4ISR systems providing both horizontal and vertical connectivity • Synergistic interagency connectivity through shared information and a common operating picture • Collaborative agency planning and integrated execution of operations designed to achieve desired strategic objectives • Continuous interagency coordination (before, during and after operations) • Liaison positions permanently established and exercised • Clear command and working relationship, functions, and unified purpose

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM INTERAGENCY COORDINATION TO INTERAGENCY SYNCHRONIZATION

20th CENTURY	21st CENTURY
INTERAGENCY COORDINATION Coordination that occurs between elements of the Department of Defense and engaged US Government agencies, non-governmental organizations, private volunteer organizations, and regional and international organizations for the purpose of accomplishing an objective.[53]	**INTERAGENCY SYNCHRONIZATION** Information sharing, simultaneous connectivity, uniform approach, and mutual understanding between the Department of Defense, military services and other US governmental, non-governmental and volunteer agencies to accomplish strategic objectives through a shared, common purpose.[54]
HOW ACCOMPLISHED	**HOW ACCOMPLISHED**
• Extensive liaison cells required to conduct coordination between DOD and GO, NGO and PVOs	• Requires development of long-term relationships, collaborative planning tools and processes exercised in advance of crises, with compatible procedures and TTPs
• Interagency operates with shared information of intent and strategic and operational objectives cleared with each separate agency	• Achieve unity of effort and purpose, and common objectives despite diverse cultures, competing interests, and differing priorities through shared effects desired
• Common connectivity and coordination is either LNO, voice or data linkage	• Requires proactive / dedicated assets designed to improve communications, interoperability and liaison through collaborative planning and a common picture of execution
• Platform based agencies with no interoperability; shared information via voice, data-link or liaison with little training or shared Standard Operating Procedures	• Interagency elements plug and play with Joint Forces, linked for collaborative planning and execution, and capable of providing integrated support for effects desired
• Deconflicted support of other agencies involved in a crisis situation to accomplish the mission	• Network-based operation with clear hierarchy of support and supported relationships designed to ensure unity of purpose and effort
• JFCs work interagency coordination primarily through Combatant Commanders and country teams in their Regions	• JFCs interface directly with integrated interagency teams at the operational level to enhance **unified action* through greater reach-back within a larger global perspective

EVOLVING SHIFTS IN CHARACTERISTICS OF US JOINT WARFARE AND CRISIS RESOLUTION FROM SYNCHRONIZED & INTEGRATED FORCES TO SELF-SYNCHRONIZED & INTEGRATED FORCES

20th CENTURY	21st CENTURY
SYNCHRONIZED[55] & INTEGRATED[56] The planning, arrangement and execution of military operations so as to meet or achieve a series of objectives through the synchronization and integration of the efforts of the forces in providing mass and fire to obtain those objectives.	**SELF-SYNCHRONIZED & INTEGRATED** Military operations guided by the joint force commander's intent and supported by collaborative planning and execution, based on the knowledge of the inter-relationship of units, both friendly and adversary, in order to achieve the desired end state.
ATTRIBUTES	**ATTRIBUTES**
• Interoperable, Service - based C4I Systems capable of limited sharing of information to synchronize	• Fully integrated and networked joint C4ISR systems linked to provide a common picture to enable self-synchronization
• Coordinated interagency operations	• Synergistic interagency connectivity through shared information and a common operating picture
• Deconflicted complementary Multinational operations	• Integrated multinational planning and execution of operations designed to achieve effects desired
• Principle of unity of command	• Fundamental of unity of effort among all military, multinational and I/A participants
• Principle of mass through the implementation of all facets of combat power to achieve decisive results	• Effects desired achieved through the integrated application of all instruments of national power designed to provide continuous pressure on critical vulnerabilities within the adversary system of systems at all levels
• Picture of the battlespace provided through Situational Reports from subordinate elements and information passed down from higher headquarters	• Common operational picture and operational net assessment provided by a network-centric system designed to share information from the planning through execution stage of all operations
• Thought process: Deliver a series of timed strikes that will defeat or even destroy an adversary's ability to continue present operations	• Thought process: Deliver more precise and rapidly repeating strikes to break the adversary's morale and will to fight by never allowing him the time to adapt or recover

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM SERVICE-BASED INTEROPERABILITY TO JOINT-BASED INTEROPERABILITY

20th CENTURY	21st CENTURY
SERVICE-BASED INTEROPERABILITY Commonality, compatibility and standardization of service systems or equipment wherein information or services can be exchanged directly and satisfactorily between the services, interagency and other joint users.	**JOINT-BASED INTEROPERABILITY** Ingraining of an "expeditionary and joint team mindset" and the establishment of joint commonality, compatibility and standardization within concepts and architectures to enable seamless plug and play capabilities within service-provided forces.
HOW ACCOMPLISHED	**HOW ACCOMPLISHED**
• JINTACCS Message Text Format used as a common interoperability protocol for all the services • Tactical Digital Information Links (TADIL) a means to share information between platform based systems	• Joint systems integrated via the COP, ONA and Joint Interactive Planning (JIP) systems to provide shared picture from planning through execution
• Interconnected but due to system specific reporting standards, cannot gain full situation awareness	• Seamless planning and execution through commonality of systems, terminology & processes to enable integrated operations. Provides a common picture or operating procedure for the user
• Nodal and platform-based planning; deconflicted in execution	• Network-based, information-enabled systems (collaborative in planning and networked to enable integrated execution)
• Closed informational architectures with limited application of stovepiped systems and regional or mission focus	• Situational Knowledge – common understanding of the global battlespace attained through network centric systems
• Complimentary Information system capabilities designed to provide separate but equal expertise to the JFC	• Common/Shared Information Capabilities designed to be plug and play independent of situation, region or threat
• Service-based HQs – augmented from each Service, combatant command, interagency (built as situation dictates based upon threat)	• Standing Joint force HQs – enables the JFC to control scalable and modular Service-provided joint force capabilities that may be task-organized and employed in an integrated battlespace to accomplish assigned missions
• Combat Superiority Force focused on decisive results through application of combat power	• Decision Superiority Force focused on setting the conditions for faster and more precise decisions leading to effects desired
• Training in basic tactical and operational skills necessary to operate in a joint environment beginning at the intermediate school level	• Comprehensive education and training in joint warfare, as appropriate, throughout the PME structure and in military centers and schools

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM COMPLEMENTARY MULTINATIONAL OPERATIONS TO INTEGRATED MULTINATIONAL OPERATIONS

20th CENTURY	21st CENTURY
COMPLEMENTARY MULTINATIONAL OPERATIONS A collective term to describe military operations conducted by forces or agencies[57] of two or more nations, typically organized within the structure of a coalition or alliance. Mutually supportive of each other's capabilities and wherein the partner nations are assigned specific tasks that do not interfere with each other.	**INTEGRATED MULTINATIONAL OPERATIONS** Harmonious employment of the value-added capabilities that another nation's services and supporting agencies will provide to the joint force in the global battlespace environment. The missions of partner nations blend with those of US forces.
HOW ACCOMPLISHED	**HOW ACCOMPLISHED**
• Discriminated by system compatibility and application in discrete domains	• Able to plan and conduct operations by integrating significant specialized capabilities of each partner
• Planning and conduct of operations must be deconflicted with use of LNOs and clearly established sectors/boundaries	• MN partners will be able to conduct integrated operations with US forces through a combination of enhanced liaison capabilities, pre-crisis training, shared information, SOPs, TTPs, and unity of purpose
• Highly centralized planning with specific tasks assigned to each force based upon capabilities and limitations	• Combat Force multiplier with integrated capabilities capable of producing synergistic joint capabilities designed to achieve a set of effects desired across the full range of military operations
• Added combat power with additional fielded forces, specialized capabilities and regional ties/expertise to conduct combat or non-combat operations.	• Requires shared understanding of operational procedures, compatible organizations and a common language
• Constraints on information sharing limited by release protocol and technological capabilities	• Multilevel security capability will facilitate knowledge sharing based on release protocol
• Multilateral agreements arranged at national level	• Multilateral agreements arranged at JFC level[58]

EVOLVING SHIFTS IN CHARACTERISTICS OF US JOINT WARFARE AND CRISIS RESOLUTION FROM INFORMATION-BASED OPERATIONS TO SITUATION KNOWLEDGE-BASED OPERATIONS

20th CENTURY	21st CENTURY
INFORMATION-BASED OPERATIONS An approach to conflict focusing on the management and use of information in all its forms and at all levels to achieve a military advantage over the enemy. Information-based warfare is both offensive and defensive in nature.[59]	**SITUATION KNOWLEDGE-BASED OPERATIONS** An approach to conflict focused on taking advantage of superior information and converting it to superior knowledge to achieve "decision superiority" so as to implement actions faster than an opponent can react or to allow a force to shape the situation in its favor.[60]
ATTRIBUTES • Continuous Information / Data Generation • Information management helps enable information superiority and decision parity • Measurement of first order effects (i.e. Use of BDA to determine effects of firepower and air support against the enemy) • Intel cycle is sequential and linear. Data gathering requires intensive analysis to supply the commander with usable information for decision-making • Information systems / operations are the cornerstone for a knowledge-based system	**ATTRIBUTES** • Focused and Continuous joint C4ISR process / Finished Knowledge Generation • A common operational picture (COP) will help enable decision superiority • Effects-based assessments used to look beyond first order effects. Measurement of effects desired in terms of context, process and outcome • Information is synthesized, analyzed and shared simultaneously across the network to enable an operational net assessment and a Common operational picture. This enables a faster, more precise decision-making process • Improved information systems will contribute to a COP that will become the cornerstone for decision-based systems

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM INFO & DATA GENERATION TO KNOWLEDGE GENERATION & MANAGEMENT

20th CENTURY	21st CENTURY
CONTINUOUS INFORMATION & DATA GENERATION Employment of Information Systems and the Intelligence Cycle to manage the collection of facts, data, concepts or instructions in any form for suitable utilization by the joint forces to increase awareness of the battlefield.	**CONTINUOUS KNOWLEDGE GENERATION & MANAGEMENT** Data correlated becomes information. Information synthesized into situation awareness becomes knowledge. Knowledge used to predict the consequences of action or future outcomes will lead to understanding. Management of the above leads to operational success through faster and more precise commander decisions.
HOW ACCOMPLISHED	**HOW ACCOMPLISHED**
• Information Systems and the Intelligence Cycle and commander's assessment– Sequential and continuous	• Network-centric systems that facilitate rapid and precise decisions involving intelligence and information.
• Plan & Direct—Top down planning, with overlapping areas of focus	• Higher guidance and intent drives universal collaborative planning; seamless interdependent areas of focus
• Collect—Employment of multiple sources rather than systems to acquire information	• Common automated information collection process integrating adversary, friendly and environmental considerations
• Process & Exploit—Sequential compartmented analysis at all levels requiring separate guidance and direction	• Simultaneous, networked, analysis shared at all levels, operating under the same unity of purpose
• Produce—Multiple, independent, and segmented views of the battlespace requiring human synthesis to provide holistic picture	• Summarization and management of information to provide a COP of the global battlespace
• Disseminate information through disparate systems and integrate at different levels	• Real time dissemination and integration of a common operational picture to enable more rapid and precise command decision(s)
• Evaluate/Reassess, as available	• Knowledge management processes include continuous evaluation/reassessment
• Platform-based, semi-integrated friendly picture	• A common operational picture allows the commander to create, not just find or identify, exploitable windows of opportunity

EVOLVING SHIFTS IN CHARACTERISTICS OF US JOINT WARFARE AND CRISIS RESOLUTION FROM FIREPOWER PROVIDES THE EFFECT OF MASSED FORCES TO KNOWLEDGE, MANEUVER & PRECISION ENGAGEMENT PROVIDE THE EFFECT

20th CENTURY	21st CENTURY
FIREPOWER PROVIDES THE EFFECT OF MASSED FORCES Firepower allows the concentrated effect of combat power at the place and time to achieve decisive results against the enemy's sources of power in order to destroy or neutralize them.[61]	**KNOWLEDGE, MANEUVER AND PRECISION ENGAGEMENT PROVIDE THE EFFECT OF MASSED FORCES** Knowledge will be the conversion of superior information into understandable key facts that will be used to provide the force rapid decision superiority.[62] This coupled with maneuver and precision fires provide the effects desired of massed forces against an adversary's weakness to help minimize casualties and shorten the conflict.[63]
ATTRIBUTES • Firepower used to divert, disrupt, delay, damage or destroy the enemy's military potential, thereby providing force mass to the joint force commander • Requires a large fielded force to achieve decisive results and minimize losses • Emphasizes Offensive and Mass • Top down centralized planning with de-centralized execution • Information Superiority enables the application of Economy of Force to achieve force mass elsewhere at critical points and times.	**ATTRIBUTES** • Combined rapid maneuver and precision fires are used to minimize or negate the adversary's military potential to produce the effects desired of the joint force commander • Tailored, highly mobile maneuver forces with equivalent combat power of larger forces operating over a wider area • Emphasizes Initiative, Adaptability and the Distribution of Combat Power • Network-centric collaborative planning and flattened execution architecture • Knowledge Superiority enables a more precise application of appropriate power, self-synchronized in time, space and purpose throughout the battlespace, to achieve the effects desired • Widely dispersed geographical operations that are linked for network centric warfare

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM TARGET EFFECTS AWARE TO EFFECTS-BASED TARGETING

20th CENTURY	21st CENTURY
TARGET EFFECTS-AWARE Kinetic targeting conducted on the basis of first order effects. Target effects are assessed through BDA or direct intelligence gathering.	**EFFECTS-BASED TARGETING** Targeting conducted on the basis of first, second, and third order effects. Target effects are assessed through predictive modeling and post attack analysis.
HOW ACCOMPLISHED	**HOW ACCOMPLISHED**
• Focused on 1st order effects (clearly visible, immediate)	• Concern for 1st, -2nd, and 3rd order effects (immediate and over time)
• Employment of kinetic fires to neutralize, defeat or destroy the enemy	• Application of both kinetic and non-kinetic systems capable of creating desired lethal and non-lethal effects to obtain operational or strategic objectives
• Commander's guidance is translated directly to Implementation through the use of target lists (ATO, AGM, Fires Matrix, etc.)	• Commander's guidance is translated to an Effects Tasking Order to align capabilities with systems and then engaged for effects
• Digital or voice intelligence push or pull drives targeting process	• Knowledge management systems are critical enablers to achieving the effects desired
• Provides near-simultaneous feedback via gun tapes, CNN on the battlefield, etc.	• Actions will be more precise. The 2nd & 3rd order effects desired will take some time to fully materialize
• Deconflicted engagements acting in coordination with other instruments of national power	• Self-synchronized engagements, lethal and non-lethal, from disparate locations and integrated to support or be supported by other instruments of national power
• Doctrine dictates a set cycle (ATO, AGM) governed by an observe, orient, decide and act iterative process	• Emerging doctrine will dictate a more rapid and integrated process designed to combine the observe-orient process (ONA-COP) and enable faster decisions and execution

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM PLATFORM-CENTRIC OPS TO NETWORK-CENTRIC OPS

20th CENTURY	21st CENTURY
PLATFORM-CENTRIC OPS Independent nodes or entities, linked by voice or data link, that detect and identify targets, decide whether to engage the target, convey the decision to a weapons platform, and employ weapons on the target.[64]	**NETWORK-CENTRIC OPS** Network Centric Warfare – An information (decision) superiority-enabled concept of operations that generates increased combat power by networking sensors, decision makers, and shooters to achieve shared awareness, increased speed of command, higher tempo of operations, greater lethality, increased survivability, and a degree of self-synchronization.[65]
HOW ACCOMPLISHED • Closed, Service-centric network architecture systems • A long, and involved sensor-to-shooter decision-making sequence • Material Node-centric system with emphasis on vertical connectivity • Service platforms employed in a de-conflicted and coordinated manner to accomplish the operational or strategic objectives • Requires translation from Information Superiority into combat power through deconfliction process to ensure clearance, no duplication and commander's intent is met	**HOW ACCOMPLISHED** • A fully integrated and networked joint C4ISR architecture and modular "plug and play" capabilities that tie in military and civilian architectures • Information, subsequent decisions, and actions are near simultaneous • A joint capabilities-based system with emphasis on horizontal connectivity • Joint platforms integrated with common systems and a shared picture designed to provide a synergistic capability to achieve effects desired • Rapidly translates Knowledge Superiority into combat power by effectively inter-linking knowledgeable entities with C2 structure throughout the battlespace

EVOLVING SHIFTS IN CHARACTERISTICS OF US JOINT WARFARE AND CRISIS RESOLUTION FROM PULSATING PRESSURE TO CONTINUOUS PRESSURE

20th CENTURY	21st CENTURY
PULSATING PRESSURE Operations that contain a preparation, execution and recovery cycle against specific centers of gravity. Best described as a discrete event or "wave" operations such as landing waves, waves of bombers, or cruise missile waves against a specific target.[66]	**CONTINUOUS PRESSURE** Operations involving the continuous application of mission-tailored capabilities to achieve a desired effect and at a rate where the effects overlap. The overlapping of the capabilities tailored to exploiting friendly strengths and/or enemy vulnerabilities negates enemy ability to react/respond with any efficiency,[67] or negates a recovering situation from deteriorating or reverting to crisis.
ATTRIBUTES	**ATTRIBUTES**
• Operational cycles are routinely executed via the following steps: stop, start, pause, and resume	• No intended gap between the actions & operations that target vulnerabilities in the adversary's system (no reaction time to adapt). Integrated capabilities overlap yielding continuous pressure
• Present capabilities attempt to employ capabilities against adversaries at GRID 1235678 before they can displace	• Employment of capabilities that ensure continuous networked connectivity of joint C4ISR assets and exchange of targeting data with engagement assets
• Operational pauses often occur during offensive operations	• Unrelenting pressure does not permit the adversary to rebuild or reconstitute his system
• Necessary sustainment operations often occur only during operational pauses	• Focused Logistics will enable continuous sustainment operations
• Pulsed actions are discrete events and the objectives are focused on terrain and fielded force	• Operations are continuous and network-centric focused on achieving desired joint effects. Focuses on the disruption, disintegration and defeat of the adversary's complex adaptive system of systems
• Loss of momentum and initiative often results in reverting to a planned defensive mode	• Adapt at a better rate than the adversary allowing momentum to be maintained
• Outcome of military actions/confrontation may be immediately assessed through visible effects analysis	• It may take a longer time to assess 2nd and 3rd orders of effects to fully realize certain operational impacts

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION
FORCE APPLICATION: FROM PRECISE TO ADAPTIVE

20th CENTURY	21st CENTURY
PRECISE FORCE APPLICATION Application of military power in a manner that inflicts an appropriate level of damage and casualties with a degree of refinement, which allows for a level of collateral damage, deemed acceptable to strategic leadership.	**ADAPTIVE FORCE APPLICATION** Application of tailored joint force capabilities, integrated with other instruments of national power, with a higher degree of refinement in adaptability and flexibility (location and time) to achieve the effects desired.
HOW ACCOMPLISHED • Precise application of available force within time constraints. • Technology and C2 limitations required broad application of force with the intent to elicit effects desired on desired targets • Focused on immediate (1st order) effects of the precise application of military power • Historically, has required large amounts of (relatively) low-tech resources. Precision munitions are changing this precedent • Desire to minimize collateral damage is often outweighed by desire to have effect desired (or greater)	**HOW ACCOMPLISHED** • Provision of the right force at the right time to provide the flexibility to a joint commander. This may entail using dispersed forces to create temporary, mission-tailored subordinate joint task forces[68] • Technology is critical enabler allowing US forces to respond more quickly, accurately and with tailored joint force capabilities • Greater ability to achieve 2nd and 3rd order effects with a wide array of joint force capabilities • Employment of lethal and non-lethal systems with fewer resources • Adaptive capabilities enable the joint force to achieve effects desired while minimizing collateral damage

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM ENGAGEMENT-CENTRIC TO EFFECTS-CENTRIC

20th CENTURY	21st CENTURY
ENGAGEMENT-CENTRIC Military actions undertaken to confront and destroy an adversary's centers of gravity in a direct and symmetric manner using force-on-force. Focused on sequential conflict or battle with an adversary at the adversary's center of gravity.	**EFFECTS-CENTRIC** Gaining advantage over an adversary's critical vulnerabilities through the fully integrated application of national instruments of power.
HOW ACCOMPLISHED • Focus on mass/attrition, seeking decisive battle at potential strongholds or weaknesses in the enemy's forces • Physical confrontation and destruction of adversary through engagement focused on the 1st order effects with minimal consideration to 2nd and 3rd order effects • Industrial-based mentality • Plan to concentrate effects at critical points in time and space to achieve surprise, psychological shock, and physical momentum • Service-centric forces designed to conduct symmetrical engagements (force on force)	**HOW ACCOMPLISHED** • Focus on the identification and engagement of adversary vulnerabilities, seeking to achieve effects desired • Avoid physical confrontation if possible; focus national instruments of power to influence effects beyond first order • Technology – Network centric mentality; Full implementation of the global battlespace spectrum of capabilities • Planning/execution of battles flow in a swarming style to continuously engage the entire network throughout the global battlespace • Modular tailored joint forces designed to achieve effects desired (Unmatched speed, agility, adaptability and decisiveness) • Render adversaries incapable of resisting by shattering their morale and physical cohesion (their ability to fight as an effective, coordinated whole). Not necessarily intended to destroy the enemy through attrition

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM SEQUENTIAL & SEGMENTED OPS TO SIMULTANEOUS, DISTRIBUTED/PARALLEL OPS

20th CENTURY	21st CENTURY
SEQUENTIAL & SEGMENTED OPS Phased operations. A specific part of the operation is different from those that follow or precede it.	**SIMULTANEOUS, DISTRIBUTED & PARALLEL OPS** Operations conducted concurrently and synergistically across the levels of warfare to produce an operational tempo and effect that overwhelms the adversary's ability to react.
HOW ACCOMPLISHED • If friendly forces lack the means to overwhelm the enemy in a single simultaneous operation, then commanders usually phase the operation to achieve the effects desired • Centralized C2 controls transition between phases to allocate specific resources to accomplish the mission • Coordinated application of joint military capabilities with the intent of destroying or defeating an enemy in support of strategic objectives • Parallel and Sequential yet overlapping operations are synchronized and integrated in time and space • Joint Operations time-sequenced in coordination with other instruments of National Power to accomplish strategic objectives	**HOW ACCOMPLISHED** • A vital concept of the joint force is its inherent ability to accomplish parallel and distributed operations across the levels of warfare to attain effects desired through focused application of capabilities • Continuous operations monitored and directed throughout the network to maintain the initiative and achieve the effects desired • Precise and continuous application of military and nonmilitary capabilities with the intent of disrupting and disintegrating the adversary's system of systems • Self-synchronized and integrated simultaneous operations conducted with a unity of effort and purpose at all levels • Joint, Interagency and Multinational Operations integrated from planning through execution with all elements of National Power to achieve effects desired

EVOLVING SHIFTS IN CHARACTERISTICS OF US JOINT WARFARE AND CRISIS RESOLUTION FROM PRIMARILY LINEAR TO PRIMARILY NON-LINEAR

20th CENTURY	21st CENTURY
PRIMARILY LINEAR Linear operations emphasize sequential operations[69] along parallel lines of operation while maintaining the position of the joint forces in relation to other friendly forces.	**PRIMARILY NON-LINEAR** Non-linear operations emphasize simultaneous operations along multiple lines of operation from selected bases (ashore or afloat).[70]
ATTRIBUTES • Massed combat power is directly proportional to the number of weapons platforms engaging • Linear array of ground forces have traditionally produced an inherent security of rear areas, basing for air and lines of communication • Voice and Data information transfers require the implementation of control measures and the need to de-conflict operations • Lines of supply connect the supply points with the maneuver forces • Began focusing on information operations, attacking with mass at critical points and maintaining security • Relies upon superior ground, air, sea and space combat power to defeat or destroy any adversary • Synchronized primarily vertically through higher headquarters with limited horizontal coordination at lower levels • Logistics tethered to large stockpiles in support of a massed forces philosophy, characterized by a large log footprint, pauses, & Service-centric/stovepipes	**ATTRIBUTES** • Massed Effects are proportional to the system capabilities able to interact from dispersed locations • Dispersed systems maintaining freedom of action, while being networked to maintain a common operational picture, no longer rely on traditional Lines of Communication • Knowledge management systems produce digital control graphics and precise instructions for engagement • Focused logistics move with the maneuver force and re-supply as necessary • Focus on decision superiority, precision engagement and dominant maneuver • Will rely on joint force capabilities enhanced by superior decisions • Self-synchronized through a common operational picture, operational networked assessment and networked joint C4ISR architecture • Focused Logistics to enable agility, precision, an expeditionary mindset, and networked integration, to facilitate a smaller log footprint, tempo of operations, & leveraged global sustainment

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM CONTIGUOUS TO NON-CONTIGUOUS OPERATIONS

20th CENTURY	21st CENTURY
CONTIGUOUS OPERATIONS One continuous Area of Operations (AO) or continuous forward line of troops (FLOT).	**NON-CONTIGUOUS OPERATIONS** Operations conducted simultaneously from dispersed AOs networked with a shared picture and directed from an adaptive joint command and control element.
HOW ACCOMPLISHED • Attacks focused along a narrow front with a supporting attack to force a penetration and follow-on envelopment • Clearly defined Operational Framework (Deep, Close & Rear with tangible delineation) • Centralized Planning (with guidance); Decentralized Execution; Centralized Decision Authority • Pauses built into concept of operation to conduct sustainment operations • Shape in the deep area; conduct decisive operations in the close area; and sustain in the rear area • Units and formations physically linked: land, air, sea and space	**HOW ACCOMPLISHED** • Scaleable and flexible operations throughout the battlespace to set the stage for dispersed, integrated combat actions to achieve effects desired. • Dispersed combat power protected through networked information and precision engagement • Centralized Guidance followed by collaborative planning with shared knowledge and decision to execute empowered as far down as possible • Combat effects are sustained to enable freedom of action • Self-synchronized and self-sustained unit cells focused on the effects desired throughout the battlespace and across all levels of warfare • Systems and units linked via the network in purpose and effort from disparate locations

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CONFLICT RESOLUTION FROM SUPPLY-BASED TO NETWORK CENTRIC / DISTRIBUTION-BASED LOGISTICS

20th CENTURY	21st CENTURY
SUPPLY-BASED LOGISTICS Operational system in which large quantities of materials are stockpiled forward and throughout the sustainment pipeline to meet incoming demands of regional combatant commanders.	**NETWORK CENTRIC/DISTRIBUTION-BASED LOGISTICS** The operational process of globally synchronizing all elements of the logistic system, enabled by information (COP), and empowered by knowledge, to tap into all potential resources and deliver the "right things" to the "right place" at the "right time" to support the joint force commander.
HOW ACCOMPLISHED	**HOW ACCOMPLISHED**
• Service-centric logistic planning, volume enabled	• Collaborative logistics planning, information enabled
• Hedge on quantity in lieu of balance; stockage-based	• Precision versus stockpiles; balance versus quantity
• Pauses built into operations to conduct sustainment	• Focused logistics enables continuous sustainment operations that begin on day one (deployment through employment)
• Large supply trail/tail	• Reduced log footprint through commonality, technological advances, increased use of contractors on the battlefield, host nation & multi-national support
• Regionally-focused ("CINC-Centric")[71] /AOR support	• Global-Centric / Emphasis on global sustainment reach-back with enroute infrastructure capabilities
• Dependent on robust battlefield distribution system	• Expeditionary logistics – modularity • Velocity management, emphasis on throughput to forward areas, minimized cargo handling, pre-configured loads, speed of support, time definite delivery, and customer confidence
• Logistics stockpiles established to respond to operational demands/requirements	• Access to information (COP) and resources across the battlespace empowers logisticians to anticipate demands and tailor/orchestrate support to meet joint-warfighting needs and provide operational flexibility
• Large logistics footprint, supply basing required, cumbersome mobility, over-burdened strategic lift LOC	• Meter support and sustainment requirements instead of stockpiling to sustain tempo; lessen strategic lift LOC burden
• Service logistics; legacy/stovepipe based	• Fully integrated and networked joint logistics (decision superior)

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION
COMBAT FOCUS FROM THREAT-BASED TO CAPABILITIES-BASED

20th CENTURY	21st CENTURY
COMBAT FOCUS PRIMARILY THREAT-BASED Threat-based force is organized, trained and equipped to deter and defeat a specific range of military threats. It focuses on identifying specific potential adversaries and how they might fight in specific operational areas.	**COMBAT FOCUS ON CAPABILITIES-BASED SYSTEM OF SYSTEMS** A capabilities-based force is organized, trained, and equipped to provide the capabilities needed to deter and defeat the anticipated capabilities that potential adversaries might employ. It focuses more on how potential adversaries might fight and less on who the adversaries might be and where a war or crisis might occur.[72]
HOW ACCOMPLISHED • Short duration concentration of the elements of National Power at the place and time which best further the pursuit of the primary national objectives[73] • Primarily symmetrical approach to warfare to ensure fielded force combat power parity or superiority against a specified threat • Enemy fielded force or leadership is seen as the Center of Gravity (COG) and thus the desired end state is to defeat or destroy it • 20th Century doctrine dictates maneuver warfare based upon heavy fielded forces operating from a soviet-style employment or smaller scale actions against specific types of adversaries	**HOW ACCOMPLISHED** • Integration of all elements of National Power throughout the duration of any conflict to ensure effects desired are achieved and strategic objectives are accomplished • Primarily asymmetrical, or indirect, approach to warfare to ensure knowledge superiority is translated into precise application of a full range of military and nonmilitary capabilities to ensure force protection and achievement of effects desired • Adversary is seen as a complex adaptive system of systems propelled by human will that has several potential vulnerabilities that may lead to its defeat or destruction • Emerging doctrine will focus on the necessary capabilities to engage any adversary across the full range of military operations with a joint force sharing common systems, TTPs and doctrine

EVOLVING SHIFTS IN CHARACTERISTICS OF US JOINT WARFARE AND CRISIS RESOLUTION FROM US HOMELAND PERCEIVED SECURE TO US HOMELAND THREATENED

20th CENTURY	21st CENTURY
US HOMELAND PERCEIVED SECURE Perception of geographic isolation, strong military, and promise of massive nuclear retaliation minimize concern over direct attacks against the US homeland.	**US HOMELAND THREATENED** US homeland subject to asymmetric attacks (including long-range ballistic missiles) and other direct threats. Increased potential for multiple adversaries joining together against the US.[74]
ATTRIBUTES	**ATTRIBUTES**
• Likelihood of a long-range symmetrical attack against the US Homeland was remote given command of the seas, air and nuclear capabilities	• Increased likelihood of asymmetrical attacks against US territory, critical infrastructure, and domestic population • Psychological impact of asymmetric attacks against US citizens becomes as important as the attacks themselves
• Regionally-based or projected, Service-centric HQs – augmented from each Service, combatant command, interagency and MN partners	• Homeland defense-focused military commands as supported or supporting elements augmented by interagency, MN and active duty and reserve component forces
• RC forces are integral additions to 20th Century regional war plans with little consideration given to a unified Homeland Defense	• The potential exists for RC forces to take a much larger role in Homeland Defense plans
• Relies upon unmatched ground, air, sea and space combat power projection to deter, defeat or destroy any adversary outside Continental US	• Relies on superior global networked military and interagency capabilities to deter, dissuade or if necessary defeat any adversary at home or abroad
• Inclusion of Multinational and Coalition partners in operations is preferred	• Reliance on multinational global network capabilities is essential to ensuring security across the global battlespace to include the US Homeland
• Military leading element of national power to defeat any adversary military force threats against the homeland	• Military is only part of a synchronized grand strategic approach (diplomatic, information, military and economic) involving federal, state and local resources, as directed, to defeat or otherwise respond to any adversary threat to the homeland

EVOLVING SHIFTS IN THE CONDUCT OF US JOINT WARFARE AND CRISIS RESOLUTION FROM STRATEGIC DETERRENCE TO PROACTIVE / PREEMPTIVE HOMELAND SECURITY

20th CENTURY	21st CENTURY
STRATEGIC DETERRENCE AS HOMELAND DEFENSE Strategic deterrence that emphasizes highly mobile power projection and overseas presence to protect US interests. Geographic isolation and strong nuclear capability minimize concern over direct threats and attacks against the US homeland except from major nuclear power.	**PROACTIVE/PREEMPTIVE HOMELAND SECURITY** Protection of U.S. territory, domestic population, and critical infrastructure against external threats and aggression. Deterrence may involve preemptive action against potential serious threats toward US territory, domestic population, and critical infrastructure.
HOW ACCOMPLISHED • The fielding of a Nuclear TRIAD strike capability as a Flexible Deterrence Option, subsequently refined to include strong global power projection force to respond to threats below the nuclear threshold • Enhance regional security to prevent adversaries from growing unabated (Shape) • Engage regional threats with power projection forces when considered relevant to National Security (Respond) • Plan, equip and train to counter future threats (Prepare Now) • Department of Defense support to US civil authorities for domestic emergencies	**HOW ACCOMPLISHED** • Expand strategic deterrence options to include the Nuclear TRIAD, Missile Defense, and an adaptable global power projection force capable across the range of military operations • Field a globally linked capabilities-based force able to adapt to any mission across the range • Consider preemptive strikes against adversaries before they can strike the US Homeland • Increased collaboration with government and non-government agencies to deter, dissuade and defeat adversaries of tomorrow • Department of Defense expanded role across the range of military operations from civil support up to and including potential warfare (with increased emphasis on designated law enforcement support and other activities)

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ENCLOSURE (2)

The Application of the Principles of War and Principles for Military Operations Other Than War (MOOTW) to US Joint Warfare and Crisis Resolution in the 21st Century

The envisioned common joint warfighting perspective requires the inclusion of a discussion of how the future joint force might apply the current joint doctrine accepted principles of war[75] and principles for MOOTW[76] in its intention to wage joint warfare and resolve crises in the 21st Century. As the principles of war are "the enduring bedrock of US military doctrine,"[77] there is a necessity to describe the circumstances of their impact, as well as the impact of the principles for MOOTW, on employing the future joint force. In addition, there are two unique fundamentals of joint warfare (Sustainment[78] and Agility[79]) that are not adequately captured by the current principles of war and MOOTW. Therefore, Sustainment and Agility must also be reviewed to describe the specifics of their impact on the employment of the future joint force.

Figure 7. Linking the Current Joint Doctrine Principles of War, Principles for MOOTW and Fundamentals of Joint Warfare to the Evolving Fundamentals of 21st Century Joint Warfare and Crisis Resolution

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

In order to achieve full spectrum dominance, the future joint force must be agile, versatile and resilient in its thinking, processes, and employment. As such, taking the steps to identify the themes and patterns of applying the

current principles of war and MOOTW to meet the future complex environment across the range of military operations is essential to increase our advantage in the 21st Century. The following descriptions clarify how the current principles may be interpreted and applied in response to the evolving shifts in the characteristics and conduct of US joint warfare and crisis resolution. The descriptions help frame the philosophical construct of this common joint warfighting perspective and reflect an evolution of the fundamentals of joint warfare, as shown in figure 7, to a proposed set of evolving fundamentals of 21st Century joint warfare and crisis resolution. As the current fundamentals of joint warfare are anchored in the application of the time tested principles of war,[80] these proposed evolving fundamentals of the 21st Century should be further evaluated in academic institutions as well as against the joint and service lessons learned. Ultimately, the proposed applications will need to be experimented upon and further tested to prove their validity.

1. The application of "**Objective**" by the Future Joint Force

The purpose of the "objective" is to direct every military operation toward a clearly defined, decisive, and attainable objective.

To apply "Objective" in the future, joint force commanders (JFCs) should understand the strategic aims, establish appropriate military objectives, and ensure that these aims and objectives contribute to unity of effort with their joint, interagency and multinational partners. This is imperative with the advent of simultaneous, distributed, and parallel operations throughout a global battlespace and across the range of military operations. They should also understand what specific conditions could result in mission termination, as well as those that yield failure. At the highest levels, JFCs must translate political guidance into appropriate military objectives, and maintain flexibility to adapt to changes in political objectives. The objective in war and conflict remains the imposition of American or allied will and the attainment of strategic objectives and outcomes through the deflation of the adversary's will, and the defeat of the adversary's instruments of power, capabilities, and means to fight and resist. In crisis resolution not involving adversaries or the threat of force, the objective is usually described in the terms of alleviating the associated conditions or consequences as rapidly as possible, consistent with US national objectives and outcomes. In warfare and crisis resolution, objectives must directly, quickly, and economically link tactical actions to desired strategic ends by the skillful application of operational art. Ideally, engagements, activities, major operations, and campaign plans should contribute to the attainment of established strategic objectives and desired end states in the most direct and efficient manner possible.

Based on the above application of "**Objective**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**End State**."

> **End State is described as –** ***Direct every military operation toward a clearly defined and attainable objective that achieves intended strategic or operational outcomes.***

2. <u>The application of "**Offensive**" by the future joint force</u>

> ***The purpose of an "Offensive" action is to seize, retain, and exploit the initiative.***

To apply "Offensive" in the future, JFCs will blend offensive and defensive actions to establish the terms and conditions of the action for executing decisive operations throughout the battlespace. Seizing, retaining, and exploiting the initiative will continue to be an American tradition within the future joint force, and requires military leaders at all levels to execute orders intelligently and ingeniously within the overarching context of the commander's intent. Exploiting the initiative establishes the terms and conditions of the action by the future joint force in eliminating or reducing the number of options available to an adversary and compelling adversaries to conform to friendly operational purposes and tempo, while retaining friendly freedom of action. The initiative is essential for achieving decisive and often rapid results. The initiative implies an offensive spirit and is most often gained and maintained through offensive action. Offensive action is not an end in itself, but it is the most frequent method of gaining, retaining, and exploiting the initiative. However, the defense may confer the initiative if an adversary is compelled or deceived to attack into the strength of that defense. JFCs should seize, retain, and exploit the initiative to retain freedom of action and impose their will on adversaries. JFCs should cede the initiative to an adversary only when absolutely necessary and seek opportunities to regain the initiative as soon as possible. They should take calculated risks and exploit the full leverage of all joint capabilities to confuse, demoralize, and defeat their adversaries through seizing the initiative even when in a defensive posture.

This same theory applies when adapting the capabilities of the joint force to a crisis situation. JFCs will seize the initiative in a crisis situation to respond to and mitigate or resolve to an acceptable degree the circumstances associated with deteriorating, deteriorated or unstable conditions. JFCs should evaluate potential risks associated with the crisis with respect to the strategic and operational objectives. Ultimately, JFCs should exploit the full leverage of all joint capabilities under their purview to respond to the crisis by seizing and maintaining the initiative.

Based on the above application of "**Offensive**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**Initiative**."

> ***Initiative is described as*** **– Seize, retain, and exploit opportunities to impose friendly will by establishing the terms and conditions of the action, and by forcing the adversary (if present) to react to them.**

3. The application of "**Mass**," "**Economy of Force**" and "**Restraint**" by the future joint force

> ***The purpose of "Mass" is to concentrate the effects of combat power at the right place and time to achieve decisive results.***
>
> ***The purpose of "Economy of Force" is to allocate minimum essential combat power to secondary efforts***.
>
> "***Restraint" is defined as: Apply appropriate military capability prudently.***

To apply "Mass," "Economy of Force" and "Restraint" in the future, JFCs must recognize the dynamic tension between these three principles and blend them to achieve a more holistic perspective for the employment of joint forces across the global battlespace. JFCs will have to allocate, distribute, and apply their combat power effectively and efficiently in simultaneous, distributed, and parallel operations throughout the global battlespace in concert with specific rules of engagement (ROE). Thus, JFCs should employ a synergistic blend of concentrating effects while dispersing forces or systems to conduct operations. The intent is to achieve decisive effects at multiple points across the global battlespace by being able to exercise freedom of action, seize and maintain the initiative, and control the tempo of operations. To facilitate and enable the application of this distributed combat power, JFCs judiciously allocate minimum essential combat power for secondary efforts elsewhere. Such secondary efforts may involve limited attacks, defense, deception, or retrograde operations. Minimum essential combat power in this regard is described as the application of sufficient combat power to accomplish the secondary mission at an acceptable risk.

Based on the above application of "**Mass**," "**Economy of Force**" and "**Restraint**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**Application of Combat Power**."

Application of Combat Power is described as – ***Concentrate the effects of combat power in multiple dimensions from dispersed locations at critical points and times, while allocating minimum essential combat power to secondary efforts that are necessary to preserve freedom of action.***

4. The application of "**Maneuver**" by the future joint force

The purpose of "Maneuver" is to place the enemy in a position of disadvantage through the flexible application of combat power.

To apply "Maneuver" in the future and achieve full spectrum dominance, JFCs must also implement this tenet in relation to the full range of military operations, from violent warfare to those operations that will not involve the use or threat of force. Future joint force maneuver promises to feature greater speed, increased operational tempo, and enhanced agility in positioning and repositioning tailored, scalable forces from widely dispersed locations across a global battlespace to achieve and exploit positional advantage against an adversary's forces. At times, this will involve operational maneuver over strategic distances.

In warfare, maneuver seeks to place the adversary in a position of disadvantage through the flexible application of combat power. Joint maneuver involves the movement of forces (including joint air, land, maritime, amphibious, special operations, and space forces) in relation to the adversary to secure or retain positional advantage, usually in order to deliver, or threaten to deliver fires from, or orchestrated by, the maneuvering force. Success generally requires the maneuvering force to take offensive action, seize and maintain the initiative, control the tempo of operations, and apply combat capabilities effectively within its battlespace in order to overwhelm an opponent at related critical points. Controlling and dictating the tempo of operations can transform limited battlespace successes into a rapidly cascading decline in adversary will and capability.

In crisis resolution not involving force or the threat of force, the purpose of joint maneuver is to place friendly forces as rapidly as possible in a positional advantage from which to dominate the situation and to significantly facilitate subsequent operations. In humanitarian operations involving a natural catastrophe, for example, this may involve moving a properly tailored joint force to specific incident areas quickly to control the tempo of the situation. In such an operation, the future joint force will seek to stop massive loss of life, collapse of law and order, and massive migration, as well as to assist with immediate rescue operations and otherwise organize efforts to stabilize the situation. By doing so, the joint force might prevent the kind of spiraling deterioration that would require a much longer or larger force presence, or a

much higher level of outside resources, before mission accomplishment could be achieved.

In warfare, tempo considerations are key to dominating the adversary. In crisis resolution not involving force or the threat of force, tempo considerations are also key to dominating a situation, both in dealing with current conditions and consequences, and in anticipating follow-on responses required as the overall situation develop.

Tempo is the rate or pace at which military action occurs over time and space. Controlling it is essential for retaining and exploiting the initiative. Controlling the tempo of an operation requires the consistent ability to make and execute the right decisions at the right places and times, and at the right rate. It does not necessarily mean more action or faster activity. A tempo advantage may be achieved by rapid and aggressive action in terms of fires and maneuver, or it may be achieved by "slowing" activity, just as a sport team slows the pace by maintaining control of the ball to "run out the clock."

- Timing is the regulation of the moment of occurrence, and duration of military action.
- Cycle is the repetitive sequence of operations or activities.
- Sequence is the arrangement of operations or activities so as to occur linearly in time.
- Reach is the distance over which a capability can be projected for the achievement of desired effect, objective or outcome.
- Intensity is a measure of the pulsating level of military action occurring at a moment of time.

Controlling the tempo especially complements maneuver, seizing the initiative and surprise in dynamically creating the conditions for success in warfighting and crisis resolution, and the achievement of full spectrum dominance.

Based on the above application of "**Maneuver**" by the future joint force, this description leads to the proposal of two evolving fundamentals of 21st Century Joint Warfare and Crisis Resolution titled "**Joint Maneuver**" and "**Tempo**."

> **Joint Maneuver is described as –** ***Employment of joint force capabilities to gain and exploit positional advantage throughout the battlespace in order to generate the effects desired to facilitate achievement of strategic and operational objectives.***
>
> **Tempo is described as –** ***Establish and control the timing, cycle, sequence, reach, and intensity of an operation to best exploit friendly capabilities against adversaries and situations.***

5. The application of "**Unity of Command**" and "**Unity of Effort**" by the future joint force

The purpose of "Unity of Command" is to ensure unity of effort under one responsible commander for every objective.

"Unity of Effort" is defined as: Seek "Unity of Effort" in every operation.

To apply "Unity of Command" and "Unity of Effort" in the future, JFCs must recognize that the shift to employ joint forces throughout a global battlespace in synchronization with interagency and multinational partners may make the achievement of every objective under one responsible commander increasingly difficult. Unity of command is central to unity of effort and should be employed as broadly as possible. However, rarely can a military commander exercise command over all the groups necessary to pursue *unified action efficiently. This is increasingly the case where direct command relationships in the strict military sense are not feasible but where coordinated, complementary efforts toward substantially common objectives or end states are fundamentally important. The orchestration of interagency or multinational efforts in both warfare and crisis resolution is the most likely case for reliance on unity of effort. Focused cooperation, coordination, and orchestration of efforts oriented on achieving a generally complementary end may often be all that can be attained relative to some groups and organizations. Therefore, JFCs should seek to support the prescribed national mechanism and environment for cooperation and collaboration, while seeking to minimize the potential for working at cross-purposes. Therefore, seeking unity of effort extends the principle of unity of command to situations where attainment of objectives under one responsible commander is not achievable for all the elements involved.

Based on the above application of "**Unity of Command**" and "**Unity of Effort**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**Unity of Effort**."

Application of Unity of Effort is described as – ***Direct all actions toward a common purpose.***

6. The application of "**Security**" by the future joint force

The purpose of "Security" is to never permit the enemy to acquire unexpected advantage.

To apply "Security" in the future, JFCs must recognize and analyze each aspect of the future strategic and operational environment, and the need to take calculated risks while maintaining adequate safeguarding of their forces. Security preserves friendly combat power and freedom of action by reducing friendly vulnerability to hostile acts, influence, or surprise. Security results from the measures that commanders take to protect their forces and other mission-essential assets. Detailed staff planning and an understanding of the dynamics of the operational environment will enhance the safeguarding of the force. In this regard, understanding of potential adversary asymmetric approaches and associated friendly vulnerabilities is especially crucial to achieving an acceptable level of protection in both the physical and information domains.

Risk is inherent in all military operations and undue caution can increase the risk of mission failure. JFCs must apply prudent risk management, including the regular acceptance of calculated risks, to implement safeguarding measures that ensure an acceptable level of risk consistent with mission accomplishment. Therefore, safeguarding the force cannot be considered as an end in itself, rather it must be a means of preserving the force for mission accomplishment.

Based on the above application of "**Security**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**Safeguarding the Force**."

> **Safeguarding the Force is described as – *Protect friendly forces from adversarial surprise or from the potential effects of other detrimental developments.***

7. <u>The application of "**Surprise**" by the future joint force</u>

> ***The purpose of "Surprise" is to strike the enemy at a time or place or in a manner for which it is unprepared.***

To apply "Surprise" in the future, JFCs should place emphasis on friendly asymmetric advantages and how those advantages may be exploited to keep an adversary off balance and permit the joint force to control the tempo of the operation. Surprise can achieve success well out of proportion to the effort expended. Surprise delays and reduces the coherence of the adversary reactions, overloads and confuses adversary command and control, and induces psychological shock and disorientation, desirably degrading the adversary's will and ability to respond effectively. The effects of shock facilitate achieving superiority at critical points across the battlespace, seizing and maintaining the initiative, controlling the tempo of operations, and imposing one's will on the adversary. Surprise and shock can help the

commander shift the balance of combat power and thus achieve success well out of proportion to the effort expended or to overall force ratios. Commanders should seek out opportunities to do the unexpected, and especially to attack asymmetrically against an adversary's vulnerabilities. It is not necessary to achieve total surprise or the effects of shock. Often it is sufficient to cause the adversary to be unable to counter friendly actions before they achieve the desired effect.

Based on the above application of "**Surprise**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**Shock**."

> **Shock is described as –** ***Strike adversaries at unexpected times and places and in manners for which they are not physically or mentally prepared, by the direction, nature, timing, boldness, and force of the attack.***

8. The application of "**Simplicity**" by the future joint force

> ***The purpose of "simplicity" is to prepare clear, uncomplicated plans and concise orders to ensure thorough understanding.***

To apply "Simplicity" in the complex and kaleidoscopic environment of the future, JFCs should orchestrate the effects of all available instruments of combat power according to the dynamics of the operational environment in which the combat power is being wielded. Commanders cannot achieve economy of force without a clear understanding of the dynamics of their particular operational environment. They should not take their understanding of the dynamics of one operational environment and expect to apply those dynamics successfully in different environments. Nor should they expect the dynamics of a particular environment to remain the same over time. Commanders should gain and maintain a comprehensive understanding of the most relevant aspects of the operational environment in order to dominate or influence it. They need full knowledge and frank understanding of the capabilities and limitations of friendly forces, a clear appreciation of friendly critical points and centers of gravity, and a clear sense of how friendly forces and capabilities are integrated. They also need to know and understand their adversaries' critical capabilities, limitations, vulnerabilities, critical points, and centers of gravity, potential courses of action, and, when available, intentions. Knowing and understanding the environment, oneself, and adversaries allows employment of friendly strengths against adversary vulnerabilities and avoids exposing friendly vulnerabilities to adversary strengths.

Another dimension of "Simplicity" involves the communication of one's knowledge and comprehension along with associated guidance, instructions,

intent, and orders with the necessary clarity to facilitate common understanding. Clarity in communication facilitates efficient collaborative, simultaneous planning and execution and is often essential for achieving decision superiority. Clarity of expression should predominate, using common terms and standard operational procedures whenever possible. The communication of clear, concise plans and orders minimizes misunderstanding and confusion and facilitates mission execution under conditions of stress and fatigue. Simplicity in form and expression contributes immeasurably to achieving clarity. Other factors being equal, the simplest plan is preferable. Clarity and simplicity are especially crucial in bridging the differing cultural and organizational perspectives inherent in interagency and multinational operations.

In the 21st Century, joint warfare and crisis resolution will be inherently complex and knowledge-based. Accepting this fact, joint force planning, preparation, and execution must be as simplistic as possible to ensure understanding and enable decision superiority.

Based on the above application of "**Simplicity**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**Understanding**."

> **Understanding is described as – *Know, comprehend, and share common relevant knowledge of the global battlespace to facilitate operational execution.***

9. The application of "**Perseverance**" by the future joint force

> "***Perseverance" is defined as: Prepare for the measured, protracted application of military capability in support of strategic goals.***

To apply "Perseverance" in the future, JFCs must continue to understand the human dimension as well as the enduring nature of war. War is a violent clash of human wills, each trying to impose itself on the other. Will is the disposition to act toward achieving a desired goal, by force if necessary. It is an expression of determination, the articulation of choice and desire. Warfare is fundamentally a dynamic process of human confrontation requiring both the knowledge of science and the creativity of art, but driven ultimately by the power of human will. Defeating an adversary's will to fight, although difficult and complex, is the surest method of ending a conflict on favorable terms. Although materiel factors are crucial and more easily quantifiable, the moral and mental dimensions of warfare exert a greater influence on its nature, conduct, and outcome. When the adversary's will is broken, his combat power quickly disintegrates.

Whether in warfare or crisis resolution not involving force or the threat of force, commanders should always strive for a rapid, favorable outcome. However, they should also be prepared to adapt to a more measured, protracted application of military capability in support of strategic aims if this is dictated by the situation or directed by higher authority. Some crises resolution operations may require sustained efforts over years to achieve the desired results. In such cases, the patient, resolute, and persistent pursuit of national goals and objectives, for as long as necessary, is often an essential requirement for success. It is extremely important in such instances to maintain the will of US joint forces, as well as that of interagency and multinational organizations directly involved, to persevere to a successful conclusion. It is equally important to conduct operations in a manner likely to gain and maintain the support of the national will.

The military is one of the instruments of national power and is inextricably linked to the strategic goals, aims and objectives. Strategically, the perseverance of the joint force is directly proportional to the perseverance of the national leadership and American people. Operationally, the perseverance of the joint force must be considered as the ability to maintain focus on the strategic objectives and link tactical tasks to these objectives.

Based on the above application of "**Perseverance**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**Will**."

> **Will is described as – *Sustain the resolve of friendly forces in the face of adversity, while seeking to break the resolve of adversaries.***

10. <u>The application of "**Legitimacy**" by the future joint force</u>

> ***"Legitimacy" is defined as: Sustain the willing acceptance by the people of the right of the government to govern or of a group or agency to make and carry out decisions.***

To apply "Legitimacy" in the future, JFCs must extend its use across the full range of military operations. The relationship between legitimacy and the national will is an especially close one. Legitimacy is the willing acceptance by the people of the right of the government to govern or of a group or agency to make and carry out decisions. It is based on the perceived legality, morality, and rightness of the action undertaken. JFCs should adhere to internationally sanctioned standards of conduct, and ensure actions are appropriate and proportional to the situation. They should also employ information operations and public affairs as part of the interagency effort to sustain and enhance domestic and international perceptions of the legitimacy of the operation and of

the prudent and proper actions of US military forces and their interagency and multinational partners.

No government, group, or agency can decree legitimacy, but it can create, promote, sustain, or undermine perceived legitimacy by its actions. Legitimacy is a central concern of all parties involved in both warfare and crisis resolution. If the members of an audience perceive a military operation as legitimate, they are much more likely to support it. During operations where no host government exists, commanders should use extreme caution when dealing with foreign individuals and organizations claiming leadership roles to avoid legitimizing them inadvertently or prematurely.

In a war for national survival, the legitimacy of the cause is self-evident to the citizenry. When a nation wages warfare for less than vital interests, however, the perceived legitimacy of its actions become more important. The Armed Forces of the United States do not make the political decisions to employ military forces, but the actions of the military can have a profound impact on the perceived legitimacy of the overall operation, even during a war.

Based on the above application of "**Legitimacy**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**Legitimacy**."

> **Legitimacy is described as – *Foster, sustain and communicate the legal, moral, and just nature of the operation and actions of the US Government and participating partners.***

11. The application of "**Sustainment**" by the future joint force

> ***"Sustainment" is noted as – Strategic and theater logistics and deployment concepts are integral to combat success. These concepts are driven by the plans and orders of JFCs and supported by the Services, by other supporting commands, and often by support from allies and friends.***[81]

To apply "Sustainment" in the future, JFCs should consider sustainability[82] as the common enabler to effectively execute any operation. Sustainability has many aspects. It involves providing joint forces the right personnel, equipment, supplies, and support -- in the right place, at the right time, and in the right quantities across the range of military operations. In the future, the joint force will need:

- Increased emphasis on the early and continuous integration of sustainability;
- Precise, real-time control, manipulation, and protection of the sustainability pipeline extending from the US homeland into the

operational area to provide agile support to the JFCs time-sensitive priorities across the Battlespace; and

- Immediately available sustainability support and the underlying industrial base necessary to initiate, prosecute, and terminate military operations without a prolonged period of mobilization and build-up.

Therefore, sustainability considerations should be integral elements of military planning for all missions and activities, from the development of requirements, options, and concepts through mission termination.

Based on the above application of "**Sustainment**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**Sustainability**."

> **Sustainability is described as – *Provide, support, maintain, and prolong those levels of ready forces, materiel, and consumables necessary to maintain the required intensity and duration of operational activity to achieve military objectives.***

12. The application of "**Agility**" by the future joint force

> ***"Agility" is noted as – Agility, the ability to move quickly and easily, should characterize US military operations. Agility is relative; the aim is to be more agile than the foe. Agility is not primarily concerned with speed itself, but about timeliness: thinking, planning, communicating, and acting faster than the enemy can effectively react.***[83]

To apply "Agility" in the future, JFCs must be able to adapt to emerging phenomena as they execute any operation across the range of military operations. This is especially critical with respect to a shift to expeditionary operations, which will place new demands on the adaptability of the future joint force. Even though exact patterns do not often repeat themselves in the most complex of phenomena, broad themes and patterns may develop that should be recognized by the JFC. This is vital, as the first party to identify those themes and patterns and adapt accordingly will have a tremendous competitive advantage. Therefore, JFCs should seek to identify, induce, and exploit new patterns, perhaps even change the environment itself in some fundamental way, before their adversaries can identify the changes and react to them. The three critical features of adaptability that the future joint force must retain are:

- The ability to be versatile. The future joint force must be able to perform diverse missions in diverse environments. Versatility permits JFCs to keep open as many options as possible and strive for effective solutions as opposed to optimal ones;

- The ability to be agile. The future joint force must be able to act or react faster than, and within the decision cycles of, adversaries in relation to an unfolding situation. Agility permits JFCs to exploit fleeting opportunities, protect incipient friendly vulnerabilities, and adapt rapidly to changes in the operational environment;
- The ability to be resilient. The future joint force must be able to withstand pressure or absorb punishment without permanently losing its focus, structure, shape, or integrity. Resiliency provides joint forces with the ability to sustain performance at high levels, despite losses, setbacks or similar developments.

This same theory applies when adapting the capabilities of the joint force to a crisis situation. JFCs will seize the initiative in a crisis situation to respond to and mitigate or resolve to an acceptable degree the circumstances associated with deteriorating, deteriorated or unstable conditions. The future joint force will also take advantage of and exploit its inherent multi-use warfighting capabilities so that they can be tailored and adapted to respond efficiently to any crisis.

Based on the above application of "**Agility**" by the future joint force, this description leads to the proposal of an evolving fundamental of 21st Century Joint Warfare and Crisis Resolution titled "**Adaptability**."

> **Adaptability is described as – *Respond mentally and physically to identify, induce, and exploit new patterns in both the larger security environment and in the specific operational area more rapidly and effectively than adversaries.***

NOTES

Basic Paper

[1] Operations executed by a scalable joint force capable of timely global projection, assured access, and immediate employment for desired strategic and operational level objectives in joint decisive operations; and sustainable even in an austere environment for extended periods or in an area-denial environment.

[2] "The purpose of transformation is to maintain or improve U.S. military preeminence in the face of potential disproportionate discontinuous changes in the strategic environment." *Quadrennial Defense Review (QDR) 2001*, Office of the Secretary of Defense, (Washington, DC: 2001), 30.

[3] The Joint Requirements Oversight Council (JROC) approved the Interim Range of Military Operations in May 2002 [Joint Requirements Oversight Council Memo (JROCM) 080-02, *Interim Range of Military Operations (ROMO)*, (Joint Staff, Washington, DC, 22 May 02)].

[4] This bullet is derived from the *QDR 2001*pages 6 and 7. *Authors*

[5] Increasingly, knowledge will become the core of military power - creating critical requirements to not only protect information but also to acquire, process, assimilate, and distribute information more rapidly than any adversary. *Authors*

[6] There are three enduring levels of warfare – Strategic, Operational and Tactical. Chairman of the Joint Chiefs of Staff (CJCS) Joint Publication (JP) 3-0, *Doctrine for Joint Operations* (Washington, DC: 2001), ix.

[7] CJCS JP 1, *Joint Warfare of the US Armed Forces* (Washington, DC: 2000), III-3.

[8] Synergism: "interaction of discrete agencies…, agents…, or conditions such that the total effect is greater than the sum of the individual parts." *Merriam Webster's Collegiate Dictionary*, s.v. "synergism" [database online] (Washington, DC: Joint Staff, J7JVTD, last accessed 12 July 2002), available from http://www.m-w.com; Internet. For a discussion of Synergy as an element of Operational Art, see CJCS JP 3-0 pages III-9 to III-11.

[9] The term *"*unified action*" with an asterisk in front of the term refers to an expanded concept of unified action that includes multinational as well as interagency actions. The proposed definition of this expanded concept of **unified action* is: "A broad generic term that describes the wide scope of synergistic and integrated actions (including the synchronization of interagency and multinational activities) taking place for a common purpose within combatant commands, subordinate joint commands, and joint task forces under the overall direction of the joint force commander." *Authors*

[10] CJCS CM 1584-93, *Report on the Roles, Missions and Functions of the Armed Forces* (Washington, DC, 2001), 63-64.

[11]DOTMLPF change recommendations will be shared with our multinational and interagency partners for parallel development of their capabilities to improve interoperability and integration. *Authors*

[12] The 2001 Quadrennial Defense Review (QDR) identified a number of operational themes, but not in any systematic fashion. The operational themes noted in this perspective were derived from: *QDR 2001*, 12, 14-15, 20-21, 25-26, 30-33, 37-39, 42, and 43-46. *Authors*

[13] Expeditionary force: "An armed force organized to accomplish a specific objective in a foreign country." CJCS JP 1-02, *Department of Defense Dictionary of Military and Associated Terms,* s.v. "expeditionary force" (Washington, DC: 2001). However, the JP 1-02 definition does not adequately cover all of the expectations of a truly expeditionary joint force of the future. Therefore, for the purposes of this paper, an expeditionary force is considered an armed force organized, trained, and equipped for rapid deployment, immediate employment in the operational area, and sustainment under austere conditions. *Authors*

[14] Effects-based operations are defined as actions taken against enemy systems designed to achieve specific effects that contribute directly to desired military and political objective. *White Paper, Effects-Based Operations*, Air Combat Command (Langley AFB, Virginia, May 2002), 4. The White Paper further describes Effects-Based Operations (EBO) as "…a way of thinking or a methodology for planning, executing, and assessing operations …" (p.iii.). In this sense, the JOF Perspective looks upon EBO as the cultural change required to inculcate 'Effects-Based' thinking into routine planning. *Authors*.

[15] In this context, asymmetric core competencies represent our routine ability to incorporate relevant technology in flexible ways to create an overwhelming strength of the allied force, particularly against adversary weaknesses. *Authors*

[16] For the purpose of this paper, Characteristics and conduct are defined as follows: Characteristics – pervasive and distinctive attributes of the joint force; Conduct –how the joint force fights or adapts in operational execution. *Authors*

[17] Crisis Resolution: The response to and mitigation of a deteriorating situation to acceptable levels. In a military context, Crisis Resolution involves the employment of military forces to mitigate or resolve to an acceptable degree the conditions associated with deteriorating, deteriorated or unstable conditions. *Authors*

[18] See description of 'Imperative' referenced in Section G. of the paper. *Authors*

[19] (U) "Asymmetric approaches employ or affect one or more of the elements of national power (military, political-diplomatic, economic, and informational). They generally seek a major psychological impact, such as shock or confusion, that affects an opponent's initiative, freedom of action, or will. Asymmetric methods require an appreciation of an opponent's vulnerabilities. Asymmetric approaches often employ innovative, nontraditional tactics, weapons, or technologies, and can be applied at all levels of warfare—strategic, operational, and tactical and across the spectrum of military operations. They are generally employed to achieve results disproportionate to the invested effort." CJCS Chairman's Memorandum (CM)-660-99, *Joint Strategy Review* [C] (Washington, DC: 1999), 2.

[20] Against unconventional adversaries (e.g. Terrorist Networks), this new style of attrition may be less decisive and more time consuming. *Authors*

[21] Col Thomas Sword, "JAWP Urban Operations Study and DOD Roadmap (Draft)" [Alexandria Virginia, Joint Advanced Warfighting Program (JAWP)]: June 2001.

[22] Continuous pressure means to coordinate and compress the speed of planning, executing, assessing and adapting at the operational level so that an adversary is unable to react and adapt quickly enough. Derived from: Joint Staff (JS), J8, *Dominant Maneuver (DM) Concept Paper (Draft) (U) (Washington, DC: 22 May 2002),*. 11-12.

[23] Some military operations may involve adverse conditions without including an adversary. Humanitarian operations for flood or earthquake victims may represent such operations. Peacekeeping may involve potential adversaries who nevertheless are willing to cooperate. Therefore, a joint force must be able to not only 'close with and destroy' an adversary, it must also be able to help resolve situations in which there is no adversary per se, just a bad situation. *Authors*

[24] The C-17 aircraft was developed for combat operations, but has performed admirably in humanitarian assistance missions by hauling meals, equipment and personnel related to the operation. The Reverse Osmosis Water Purification Unit (ROWPU) permits the joint force to sustain itself against an adversary in an austere environment when potable water is inaccessible, but access to questionable water sources or seawater is available. In a crisis situation or natural disaster (e.g.: floods, hurricanes, earthquakes, etc.), the ROWPU capability can be adapted to provide potable drinking water not only to the military forces involved in alleviating the crisis but also to the victims of the crisis. Submarines represent a major offensive capability; yet have been used to provide power to littoral areas that have lost all electrical power due to a natural disaster. Each of these are examples of 'multi-use' military capabilities developed for warfighting, but adaptable to crisis resolution. The difference from the past and application to future Service and joint force planning and requirements development is that a 'multi-use' capability could be designed with crisis resolution in mind. In some cases, the key cost and performance requirements of the capability may be driven not by the warfighting requirement, but by the more demanding 'multi-use' application. In the example above, the ROWPU could be acquired with a far greater production capacity than what is required to sustain the joint force. An operational need for the ROWPU could now be described as: "to effectively meet the demands of large populations in humanitarian disaster situations." *Authors*

[25] Modular: "Planned or constructed on the basis of a standard pattern or standard dimensions: capable of being easily joined to or arranged with other parts or units." *Webster's Third New International Dictionary*, s.v. "Modular" (1986). *QDR 2001* makes reference to a need for 'modularity' within the joint forces: "…joint forces must be scalable and task-organized into modular units to allow the combatant commanders to draw on the appropriate forces to deter or defeat an adversary." *QDR 2001*, 32.

[26] *Authors*: For the purposes of this paper, the term 'Plug and Play means *"Interchangeable and interoperable force modules tailored for immediate integration into a joint force within an interagency and multinational environment with a common understanding of what procedures and processes need to be brought to the operation."* Although Plug and Play is considered a technical "buzz phrase," it has military relevance since it improves the concept of interoperability by implying an element of time. From the technical perspective, 'Plug and Play' means "The ability to add a new component and have it work without having to perform any technical analysis or procedure." *TechEncyclopedia,* s.v. "plug and play" [database online] (Washington, DC: Joint Staff, J7JVTD: accessed 11 July 2002), available from http://www.techweb.com/encyclopedia.

[27] Imperative: "… not to be avoided or evaded." *Merriam Webster's Collegiate Dictionary*, s.v. "Imperative" [database online] (Washington, DC: Joint Staff, J7JVTD, last accessed 19 July 2002), available from http://www.m-w.com; Internet.

[28] The 'Imperatives' are an amalgamation from multiple sources from such documents as: the QDR; Service perspectives and vision statements; JV 2020; the research of the shifts in the Characteristics and Conduct of Joint Warfare; trends; and Service transformation efforts. The amalgamation of the imperatives was completed to establish a joint understanding of how the Armed Forces of the United States must transform, and what the transformation goals are. They represent a possible initial cut of 'needs' for a Mission Need Statement. The JOF Conference discussions in January and May 2002 are the latest consensus derivation. *Authors*

[29] Synchronization: "The arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time. CJCS JP 1-02. Self-Synchronization, particularly in the military sense, is different. Self-synchronization is "…the collaborative and decentralized initiation and execution of actions by multiple elements of a joint force in support of the desired end state. Shared situational understanding facilitates self-synchronization, guided by the commander's intent and the subordinate commanders' knowledge of each other and the enemy. This enables the joint force to exploit fleeting opportunities and implies an improved process for continuous feedback, operational assessment and adaptation. Empowerment of subordinates' freedom to act in concert with the commander's intent implies their knowledge of, and responsibility for, second- and third-order consequences of their actions." JS J8 *Draft DM Concept Paper (U)*, 11-12. The difference between 'synchronized' and 'self-synchronized' is therefore similar to the difference between an experienced defensive squad and an inexperienced squad running the same kind of defense in football. Both squads may be made up of players that know the plays and their individual roles, but the experienced squad knows how that knowledge translates to movement on the field better than the inexperienced squad. The members of both squads are synchronized, but the experienced squad can adjust itself more readily to a changing situation because the experienced players are more familiar with their capabilities and 'reaction patterns,' and also know how those patterns fit into the team's overall defensive strategy better than an inexperienced squad. The inexperienced squad is synchronized, but the experienced squad is 'self-synchronized.' *Authors*

[30] CJCS JP 1-0, APPENDIX B, B-1 and B-2 as well as CJCS JP 3-0, APPENDIX A, A-1 and A-2

[31] CJCS JP 3-0, V-1 through V-3 as well as CJCS JP 1-0, APPENDIX C, C-1 and C-2

[32] CJCS JP 1-0, APPENDIX B, B-1

[33] Ibid, III-12

[34] Ibid, III-10

[35] Ibid, III-8

ENCLOSURE 1

[36] Battlespace metrics are identified as – Time, distance, operational reach, operational effects, etc.. *Authors*

[37] **Maneuver: 1.** A movement to place ships or aircraft in a position of advantage over the enemy. **2.** A tactical exercise carried out at sea, in the air, on the ground, or on a map in imitation of war. **3.** The operation of a ship, aircraft, or vehicle, to cause it to perform desired movements. **4.** Employment of forces on the battlefield through movement in combination with fire, or fire potential, to achieve a position of advantage in respect to the enemy in order to accomplish a mission. CJCS JP 1-02, s.v. "maneuver."

[38] **Maneuver Warfare:** A warfighting philosophy that seeks to shatter the enemy's cohesion through a variety of rapid, focused, and unexpected actions which create a turbulent and rapidly deteriorating situation with which the enemy cannot cope. Headquarters, United States Marine Corps Reference Publication (MCRP) 5-12C, *Marine Corps Supplement to the DOD Dictionary of Military and Associated Terms,* s.v. "maneuver warfare" (Department of the Navy, Washington, DC: 1998). "Modern maneuver warfare requires integration and understanding of four key concepts –center of gravity, critical vulnerability, focus of effort, and main effort." Naval Doctrine Publication (NDP) 1, *Naval Warfare* (Department of the Navy, Washington, DC: 1994), 35. "There is only one main effort at a time and it is always directed against the focus of effort. Designating a main effort does not imply the offensive is limited to a single attack or series of attacks." Ibid, 38.

[39] **Centers of gravity: "**those characteristics, capabilities, or localities from which a military force derives its freedom of action, physical strength, or will to fight." CJCS JP 1-02, s.v. "centers of gravity."

[40] **Critical Vulnerability: "**A vulnerability that, if exploited, will do the most significant damage to the enemy's ability to resist." "… Center of gravity and critical vulnerability are complementary concepts." "…A critical vulnerability is a pathway to attacking a center of gravity." MCDP 1, 47. **Critical Vulnerability:** "We define critical vulnerabilities by the central role they play in maintaining or supporting the enemy's center of gravity and, ultimately, his ability to resist." NDP 1, 37.

[41] "**Shaping the Action** – The first requirement is to establish what we want to accomplish, why, and how. Without a clearly identified concept and intent, the necessary unity of effort is inconceivable. We must identify those critical enemy vulnerabilities that we believe will lead most directly to undermining the enemy's centers of gravity and the accomplishment of our mission. Having done this, we can then begin to act so as to shape the campaign, operation, battle, or engagement to our advantage in both time and space." MCDP 1, 82.

[42] JROCM 080-02.

[43] NDP-1, 33.

[44] CJCS JP 3-0, III-42.

[45] "JFCs employ various maneuver and movement control and fire support coordinating measures to facilitate effective joint operations. These measures include boundaries, phase lines, objectives, coordinating altitudes to deconflict air operations, air defense areas, amphibious objective areas, submarine operating patrol areas, and minefields." Ibid., III-41.

[46] Ibid, II-19.

[47] Ibid, III-41.

[48] CJCS Joint Vision Statement, *Joint Vision 2020* (Washington, DC: 2000), 6.

[49] Page 43 Appendix B of *Future Joint Force Operations* report of 21August 2000

[50] Derived from *QDR 2001*, 30.

[51] Based on CJCS JP 3.08 Vol. I, *Interagency Coordination During Joint Operations* (Washington, DC: 1996), 1-1 and Chapter 5.

[52] Derived, *Joint Vision 2020*, 18-19.

[53] CJCS JP 1-02, s.v. "interagency coordination."

[54] Derived, *Joint Vision 2020*, 18-19.

[55] Synchronization: "The arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time." CJCS JP 1-02, s.v. "synchronization."

[56] Integration**:** The arrangement of military forces and their actions to create a force that operates by engaging as a whole. *Authors*

[57] CJCS JP1-02, s.v. "multinational operations."

[58] See Interagency Coordination to Interagency Synchronization conduct matrix on page 25. *Authors*

[59] Working definition recognized by the School of Information Warfare of the National Defense University as of 16 Nov 1996. *Authors*

[60] *Joint Vision 2020,* 8.

[61] **JFCs apply combat power** throughout the three dimensions of space and over time in a logical design that integrates the capabilities of the joint force to converge on and defeat adversary Centers Of Gravity. CJCS JP 3-0, III-17.

[62] *Joint Vision 2020,* 8.

[63] Derived from Frederick R. Strain, "The New Joint Warfare," *Joint Forces Quarterly 2* (Autumn 1993): 22.

[64] David S. Alberts, John J. Garstka, and Frederick P. Stein, *Network Centric Warfare: Developing and Leveraging Information Superiority, 2d ed.* (DOD C4ISR Cooperative Research Program, Washington, DC: August 1999), 94.

[65] Ibid, 2.

[66] JS J8, *Draft DM Concept Paper (U), 11.*

[67] Ibid, 11-12.

[68] Ibid, 31.

[69] Each sequential operation is defined by task, purpose and end state that transition to the next operation. *Authors*

[70] CJCS JP 3-0, III-11 and III-18.

[71] 20th Century Term (CINC), now referred to as Combatant Commanders. *Authors*

[72] Derived from *QDR 2001*, 14.

[73] William T. Johnson, et. al., "The Principles of War in the 21st Century: Strategic Considerations" (Strategic Studies Institute, US Army War College, Carlisle Barracks, PA: 1995), 11.

[74] Derived from the "Strategic Context" section, *Joint Vision 2020*, 4-5.

ENCLOSURE 2

[75] CJCS JP 1-0, APPENDIX B, B-1 and B-2 as well as CJCS JP 3-0, APPENDIX A, A-1 and A-2
[76] CJCS JP 3-0, V-1 through V-3 as well as CJCS JP 1-0, APPENDIX C, C-1 and C-2
[77] CJCS JP 1-0, APPENDIX B, B-1
[78] Ibid, III-12
[79] Ibid, III-10
[80] Ibid, III-8
[81] Ibid, III-12
[82] CJCS JP 1-02, 414: **Sustainability –** See **military capability**. **Military capability –** The ability to achieve a specified wartime objective (win a war or battle, destroy a target set). It includes four major components: force structure, modernization, readiness, and sustainability. d. Sustainability – The ability to maintain the necessary level and duration of operational activity to achieve military objectives. Sustainability is a function of providing for and maintaining those levels of ready forces, materiel, and consumables necessary to support military effort. See also **readiness**.
[83] CJCS JP 1-0, III-10

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