Joint and Combined Warfare in the Twenty-first Century

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Introduction

It is indeed a great honor to present a paper on the future of Joint and Combined operations in the twenty-first century before such a distinguished audience. To do so, this paper will begin with an examination of the historical antecedents of these two forms of warfare up to the present; and end with thoughts about the role of joint and combined operations in the twenty-first century. To do so, we will begin by discussing the fundamental, unchanging nature of war to indicate why a purely technological, mechanistic conception of war would destroy the very joint capabilities on which military forces from the First World must depend in the coming century.

Let me begin then with some thoughts on the political nature of war. As the Greek historian Thucydides, the greatest of all strategic and military historians, commented at the end of the fifth century B.C.: "It will be enough for me, however, if these words of mine are judged useful by those who want to understand clearly the events which happened in the past and which (human nature being what it is) will, at some time or other and in much the same ways, be repeated in the future."[1] Men have fought wars for enumerable reasons, but states fight wars for political reaso   276ns.[2]   Or   as Clausewitz put it so simply: "it is clear, consequently, that war is not a mere act of policy, but a true political instrument, a continuation of political activity by other means."[3]   *"War*

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[1] Thucydides, *History of the Peloponnesian War*, translated by Rex Warner (New York, reprinted 1986), p. 48.

[2] One of the most bizarre, ahistorical beliefs to appear in recent years was the belief held by a number of American political scientists that the modern state was withering away. The events of 11 September once again underlined in the clearest fashion that the modern state is here to stay. For an examination of how states have made strategy and war through the ages see Williamson Murray, MacGregor Knox, and Alvin Bernstein, *The Making of Strategy, Rulers, States, and War* (Cambridge, 1994).

[3] Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (Princeton, 1974), p. 87.

is thus an act of force to compel our enemy to do our will."[4]   That political framework will not change in the twenty-first century, whether we talk about conflict with the Osama bin Ladens of the coming decades, or war between major states.[5]

What will also not change in the twenty-first century is the fundamental nature, or atmosphere of war. In the decade after the defeat of Saddam Hussein in the Gulf War, a number of Americans, both within and outside of the military, argued that immense increases in computing technologies could allow U.S. forces to remove the fog and friction from war. As one of the chief proponents of this view has claimed: "The emerging system of systems promises the capacity to use military force without the same risks as before – it suggests we will dissipate the `fog of war.'"[6] In fact, everything that science tells us about the world has underlined that mankind lives in a non-linear universe – one where prediction, top-down control and the removal of fog and friction from human affairs are quite simply not in the cards. One modern day commentator has suggested about what one would have to throw out "to conclude otherwise.

> Among other things, one would need to overthrow nonlinear dynamics, the second law of thermodynamics, the fundamental tenets of neo-Darwinian evolutionary biology, and all the limiting metatheorems of mathematical logic, including Gädel's famous incompleteness theorems and Gregory Chaitin's extension of Gädel's work to demonstrate the existence of randomness in arithmetic. No small task indeed![7]

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[4] Ibid., p. 75.

[5] Two well known western military historians, John Keegan and Martin van Creveld, have argued the opposite. In effect, they misunderstand completely the difference between brigandage or murder and the conduct of war; thus, they have, for very different reasons, entirely discarded the lessons of the past five hundred years. See John Keegan, *A History of warfare* (New York, 1993); and Martin van Creveld, *The Transformation of War* (New York, 1991).

[6] Admiral William Owens, "System of Systems, *Armed Forces Journal*, January 1996. Elsewhere Owens has gone so far as to claim that And while some people say there will always be a `fog of war,' I know quite a lot about these programs [in information war that will eliminate the fog of war]." Quoted by Peter Grier, "Preparing for 21st Century Information War," *Government Executive,* January 1996. The current flounderings of U.S. government agencies, including the Department of Defense, in their efforts to track down Osama bin Laden's networks in the war on terrorism underline how far off the mark Admiral Owens was in his predictions.

[7] Barry D. Watts, " Clausewitzian Friction and Future War," McNair Paper, Institute for

The point one cannot forget in considering the problems involved in joint and combined warfare in the twenty-first century is that war will remain a dark, uncertain, and ambiguous activity. Political concerns may drive conflict, but friction, chance, and human emotion will insure that war's course and execution will not be predictable, no matter how extraordinary technology and computing power may be. In his *History of the Peloponnesian War*, Thucydides refers on numerous occasions to *Tyche* (usually translated in English as "chance") as a dominant factor in warfare.[8] *Tyche*, however, meant more than mere chance or randomness to Thucydides. A better definition might be "things that happen which are beyond the capacity of human beings to control or predict." Because war involves so many different factors, as well as in the end is a contest between military forces that aim to kill and destroy each other, it will remain dominated by chance in an uncertain and bloody arena, no matter how great the technical proficiency of the combatants. There will be no "silver-bullet," simple solutions to the complex problems human conflict will raise on every level from the tactical to the grand strategic.

Combined Warfare Before the Twentieth Century

The conduct of war through the ages has always involved allies. Even Imperial Athens described its forces as consisting of "the Athenians and their Allies." Nevertheless, in most circumstances alliances rarely, if ever, achieved as much as the sum of their military power might have suggested. The obvious explanation was that allies almost inevitably have different political goals. In the War of Spanish Succession in the early eighteenth century, the Duke of Marlborough, commander-in-chief of the British armies on the Continent, and Prince Eugene, the Hapsburg commander, managed to establish a brilliant level of cooperation at the operational level – a cooperation which came close to breaking the power of Louis XIV's France.[9] Nevertheless, on innumerable occasions Marlboro,

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National Strategic Studies, National Defense University, 1996.

[8] Clausewitz also gives as great an emphasis on the role of chance in war: "No other human activity is so continuously or universally bound up with chance [as war is]." Clausewitz, *On War*, p. 85.

[9] Winston Churchill's biography of his ancestor, the Great Duke of Marlborough, still remains the great history of the period not only for its glorious prose, but because Churchill had such

particularly early in the war, found himself thwarted by the truculence of his Dutch allies, who consistently refused him permission to fight, no matter how favorable the circumstances. If anything, the strained relations between the Dutch and the English reflected the reality that allies will always find it difficult to cooperate, because their goals and political purposes for waging war inevitably differ.

Matters between allies had hardly improved by the late eighteenth century when the French Revolution burst on the European scene.[10] In a series of ferocious wars, the French nation was able to fight and for the most part defeat a series of great coalitions that the other great powers patched together over a twenty-five year period. A major explanation for the failure of these coalitions lay in the inability of the allied powers to understand the nature of the war they were fighting. As Clausewitz suggests

> [B]ut in 1793 a force appeared that beggared all imagination. Suddenly war again became the business of the people – a people of thirty millions, all of whom considered themselves to be citizens.... The people became a participant in war; instead of governments and armies as heretofore, the full weight of the nation was thrown into the balance. The resources and efforts now available for use surpassed all conventional limits; nothing now impeded the vigor with which war could be waged and consequently the opponents of France faced the utmost peril.[11]

Nevertheless, the consistent failures of allied coalitions also reflected the inability of France's opponents to agree on their goals, disputes over their eventual booty, and finally their vision for what Europe would look like after the French defeat. Those weaknesses in the allied coalitions enabled the French Revolutionaries and then Napoleon to dominate Europe for nearly a quarter of a century. Even the final and eventually victorious coalition of 1813 could only agree at first on driving the French out of Central

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a deep understanding of politics among the great. See Winston Churchill, *Marlborough*, *His Life and Times,* 4 vols. (London, 1933). For the military aspects of the conduct of the War of Spanish Succession see David Chandler, *Marlborough as Military Commander* (London, 1973).

[10] On the nature of the French Revolution see particularly MacGregor Knox, "Mass Politics and Nationalism as Military Revolution: The French Revolution and After," in *The Dynamics of Military Revolution, 1300-2050* (Cambridge, 2001).

[11] Clausewitz, *On War*, pp. 590-591.

Europe. When allied armies invaded France in 1814 the great Austrian statesman, Prince Metternich, was still in negotiation with Napoleon to keep the Emperor on his throne, because of Austrian fears that Czarist Russia would end up in dominating Europe.[12] Napoleon's exile to Elba in spring 1814 removed the "Corsican ogre" from Europe, but at the ensuing Congress of Vienna, the Allies immediately set about squabbling, almost to the point of declaring war on each other. Napoleon's return from Elba brought them to their senses, and the Emperor's defeat at Waterloo resulted in a peace that lasted until the mid-point of the nineteenth century.

Joint Warfare Before the Twentieth Century

It is difficult to think of joint warfare before the twentieth century in anything other than the most primitive terms. And yet the combination of the Royal Navy and the British Army in the mid decades of the eighteenth century proved crucial to the future course of world history. Particularly under William Pitt, the Elder, the British used their navy to transport expeditionary forces to attack the key points in the French Empire. The success of those expeditions determined the control the British were to exercise over the world beyond Europe for nearly two centuries, and largely created the economic base on which the industrial revolution began in Great Britain. James Wolfe's attack on New France led to the dominance of North America by English speaking peoples, and enabled the rise of the United States to its position as the world's sole super power.[13]

The military pundit Basil Liddell Hart termed the approach that the British took during this period as the "British way of war." However, as Michael Howard, has pointed out, this British approach to war was only successful when Britain's opponents on the continent fought both a continental and an overseas war. And it demanded the commitment of substantial British ground forces to the fighting on the Continent. The failure of the French monarchy throughout the eighteenth century was a result of the fact that its leaders were never entirely clear as to which war they were fighting, and by

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[12] For the best general survey of the strategic framework of this period see Steven T. Ross, *European Diplomatic History 1789-1815: France Against Europe* (Malabar, FL, 1981).
[13] For the war the British waged in North America during the period known in European history as the Seven Years War (and called the French and Indian Wars by Americans) see the brilliant study by Fred Anderson: *Crucible of War, The Seven Year's War and the Fate of Empire in British North America, 1754-1766* (New York, 2000).

attempting to fight both, they lost both. The French Revolutionaries and Napoleon were clearer on their goals, which largely involved conquest on the continent. British amphibious expeditions to attack French controlled territory in Europe were dismal failures, at least until the war in Spain. Joint warfare could only work far from the continent to scoop up French possessions, or in peripheral areas on the continent well removed from centers of French power. Joint operations largely meant landing the British Army where the enemy was not and keeping those forces supplied until the French collapsed.

By the 1860s the American Civil War saw the first truly joint operations in history.[14] At the beginning of the Civil War, the Union controlled the Republic's naval forces, such as they were. That force allowed the Lincoln regime to impose a blockade on the Confederate States and to control a number of offshore forts. In spring 1862 General George McClellan launched a seaborne attack that landed Union forces on the Yorktown Peninsula. The U.S. Navy landed the troops and then supported the advance up the peninsula almost to the gates of Richmond. At that point a series of devastating blows, launched by General Robert E. Lee, drove the Federals down the peninsula. At the Battle of Malvern Hill, Union gun boats rendered signal service in stopping a major Confederate attack with horrendous losses. Nevertheless, one can only talk of the most rudimentary cooperation between naval and ground forces.[15]

The crucial theater of the war, the Western theater, saw the conduct of joint operations as we might think of them today. There the river system, in particular the Mississippi, Ohio, Cumberland, and Tennessee river systems, provided great deep highways that led from the centers of Union power in the Midwest deep into the heart of the Confederacy. Ulysses S. Grant's capture of Forts Donelson and Henry in the winter of 1862 opened up not only Kentucky, but Tennessee and northern Mississippi all the way to Muscle Shoals in Alabama to the projection of Union ground forces by the navy.

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[14] I am using the term peculiar largely because the American Civil War was to see the two great "military revolutions" of the late eighteenth century – the French Revolution and the Industrial Revolution – combined for the first time in warfare. World War I would also combine these two revolutions in an even more terrible and costly framework that came close to destroying European civilization. For the most recent discussion of "military revolutions" and "revolutions in military affairs" see MacGregor Knox and Williamson Murray, editors, *The Dynamics of Military Revolution, 1300-2050* (Cambridge, 2001).

[15] By far and away the best one volume history of the American Civil War is James McPherson, *Battle Cry of Freedom* (Oxford, 1988).

With one brilliant move Grant had provided the means to attack the South's heartland. The victories at Donelson and Henry gave the North a strategic and geographic advantage from which southern forces in the western theater of operations never recovered. But it took close cooperation between the naval officers who ran the Union's gunboat fleet and army commanders in the west to utilize that advantage to the fullest. In April 1862 the importance of that cooperation was underlined, when the Union fleet reinforced Grant's hard pressed army with General Buell's troops at the Battle of Shiloh. The cooperation that developed over the course of 1862 played a crucial role in Grant's campaign against Vicksburg in spring 1863. Admiral Porter's dash past the Confederate defenses at Vicksburg in April of that year allowed Grant to cross the Mississippi south of that town and begin the most impressive campaign of the Civil War – one that resulted the capture not only of Vicksburg, but of a whole Confederate army as well.

Combined Warfare in the Twentieth and Twenty-first Centuries

We might most easily discuss the importance of alliances in two categories: alliances that failed the larger interests of their participants and alliances that have worked to the advantage of those who participated in them. The first case forms the larger part of the story; only a few alliances have actually worked, and usually only after extraordinary efforts on the part of the participants. Interestingly, the Germans were at the heart of the two alliance systems that brought about the two world wars, and their obdurate inability to work with others or even to understand the simplest realities about their allies was largely responsible for their catastrophic failure in those two horrific conflicts.

The First World War saw two great alliance systems pitted against each other. The Central Powers initially consisted of Imperial Germany, Austria-Hungry, and Italy. Because the war was obviously started by the Germans and Austrians, the Italians refused to honor their prewar obligations and eventually joined the other side. Throughout the war the Germans and Austrians hardly communicated their intentions, generally ignored the larger interests of the alliance, and consistent managed their own military operations without reference to each other.[16] The Germans, as the dominant

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[16] For the sorry course of German-Austro-Hungarian relations during the course of the war see Holger Herwig, *The First World War, Germany and Austria-Hungry, 1914-1918* (London, 1997).

economic and military force in the Central Powers, consistently undertook military operations without bothering to inform the Austrians, the most egregious case being the Schlieffen Plan about which they never bothered to inform their allies.[17]   But the Austrians more than reciprocated in 1916, when they withdrew substantial portions of their forces from the Eastern Front for an offensive against the Italians against the express wishes of the German high command. The result was the disaster of the Brusilov Offensive in June 1916, an attack that for a period came close to unraveling the entire Eastern Front.

The Germans and their allies did no better at running an alliance system in the next world war, this one unleashed by Germany's even more megalomaniacal goals. But their allies had even less desire to cooperate in a serious fashion with the Germans. For the first six months of their participation at Germany's side, the Italians waged what Mussolini termed a "parallel war," an approach which led them to inform the Germans of their invasion of Greece *after* it had begun.[18]   Not that the Nazis were any more forth coming: Hitler informed Mussolini of the start of "Operation Barbarossa" on the evening before it was to begin.[19]   The catastrophes that then befell Italian arms over the fall and winter of 1940-1941 eventually forced Mussolini to abandon his parallel war and become more and more Nazi Germany's slavish satellite. Matters were no better between Nazi Germany and Imperial Japan. In fact, the complete absence of a common strategy was one of the major factors in the Allied recovery in 1942, which set the stage for the catastrophic defeat of the two Axis powers in the period from 1943 to 1945..

On the opposite side of the hill, the enforced marriage – largely due to German stupidity – of Britain, the United States, and the Soviet Union can only be called an

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[17] The Austrians believed at the outbreak of the war that the Germans were going to place the bulk of their forces on the Eastern Front, which was one of the major reasons they launched an ill-timed and inadequately resourced offensive northwards into Poland which resulted in a military catastrophe from which their army never fully recovered. For the Schlieffen Plan see Barbara Tuchman, *The Guns of August* (New York, 1962).

[18] The foremost examination of German and Italian approaches to grand strategy is MacGregor Knox, "Conquest, Foreign and Domestic, in Fascist Italy and Nazi Germany," in MacGregor Knox, *Common Destiny, Dictatorship, Foreign Policy, and War in Fascist Italy and Nazi Germany* (Cambridge, 2000). For Mussolini's strategy see MacGregor Knox, *Mussolini Unleashed, 1939-1941, Politics and Strategy in Fascist Italy's Last War* (Cambridge, 1982)

[19] Galeazzo Ciano, *The Ciano Diaries 1939-1943* (New York, 1946), entry for 22 June 1941, p. 369.

alliance in the loosest of terms. The Soviets, suspicious, ideologically motivated, and entirely ignorant of the military and strategic difficulties confronting the Western Powers, behaved in a rude and demanding fashion, refusing even to provide the most basic military information to their allies.[20]   On the other hand the alliance between Great Britain and the United States was a real alliance – one based on common interests and goals, a shared understanding of the world, and a genuine willingness to cooperate in the military sphere – to include the launching of the largest combined and joint operation in military history: "Operation Overlord," the landing on the European Continent on the 6th of June 1944.

The course of that alliance, from its beginnings in the desperate summer of 1940 through to victory in 1945 should serve as a model for how alliances can function effectively in the most difficult of times. Admittedly, at the head of the two nations stood two of the greatest men in human history – men who not only provided the glue between their nations, but the understanding and guidance to their generals and admirals that enabled the latter to turn strategy into successful operation plans and campaigns.[21]   It was never an easy process. The recently published war diaries of Lord Alanbrooke, Chief of the Imperial General Staff for much of the war, underline how ferocious the feelings and arguments between the two allies could at times become – leading at times to terrible arguments.[22]

Yet in the real world, alliance strategy demands argument, disagreement, and ruthlessly honest exchanges of differing view. Only in that fashion can allies hammer out strategic approaches that are workable and which take into account very different views. In the end there was a certain amount of luck involved in leading the alliance to victory,

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[20] The continued, unremitting demands by the Soviets for a Second Front ignored the fact that there had been a Western Front in 1940, and the Soviets with considerable enthusiasm had watched the Germans destroy the French Army and chase the British off the Continent. Throughout the war they never provided the slightest sense of gratitude for the immense supplies lavished on them by British and American Lend Lease. Nor were they willing to share any of their combat experiences on the Eastern Front.

[21] My colleague, Dr. Allan Millett and I judged Anglo-American strategic leadership in the following terms in our history of the Second World War: "The Americans and the British came closest to designing a global strategy that accommodated their war aims, some of which they held in common (to regard Germany as a worse threat than Japan), some of which they did not (to liberate Malaya)." Williamson Murray and Allan R. Millett, *A War To Be Won, Fighting the Second World War* (Cambridge, MA, 2000), p. 584.

[22] Field Marshal Lord Alanbrooke, *War Diaries, 1939-1945*, edited by Alex Danchev and Daniel Todman (New York, 2001).

especially in the European Theater of Operations. The British won all the arguments about strategy in 1942 and early 1943 and thus prevented a premature attempt at a landing on the French coast, which the Americans advocated and which would have resulted in a military disaster.[23]   Then, in late 1943, as the overwhelming economic and military power tilted the scales towards the United States, the Americans were able to push alliance strategy towards the two great landings on the coasts of France, Operations "Overlord" and "Dragoon" – military operations that were crucial to the strategic positioning of British and American military forces on the European Continent for the Cold War that was soon to come.

In a real sense the American strategy that won the Cold War rested almost entirely on a willingness to support its allies and on the reciprocal support of those allies. From the earliest days of the Cold War, U.S. leaders made clear their dependence on allies for the implementation of a strategy of long-term strategic and economic competition with the Soviets.[24] That strategy soon included America's enemies from World War II, Japan, Germany, and Italy. The holding together of the alliance systems, created in the late 1940s and early 1950s throughout the Cold War must be counted as one of the great successes of alliance policy in history.[25]   There were admittedly great strains and difficulties, as there always will be between allies with different views, histories, and cultures. But statesmen on both sides of the Atlantic and Pacific were able to keep the larger perspective in view for a period that lasted over four decades.

The disappearance of the Soviet Union in the early 1990s significantly changed the international landscape. Nevertheless, it did not change the importance of allies to the conduct of America's foreign policy. On occasion, there has been a tendency of some senior U.S. military leaders to wish away the difficulties that working with allies brings.[26] Certainly the NATO alliance caused enormous problems in the waging of the

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[23] Until 1944 the necessary preconditions for a successful landing had not been established: 1) air superiority had not been achieved; 2) the Battle of the Atlantic had not been won; 3) U.S. and British forces had not yet reached a sufficient level of training; and 4) the Wehrmacht had not been bled down sufficiently by the fighting on the Eastern Front.

[24] See in particular "Memorandum of Conversation," participants: The President, the Secretary of State, the Secretary of Defense, and the Atlantic Pact Foreign Ministers, 3 April 1949, Miscellaneous Documents Relating to Harry S. Truman, The Truman Library.

[25] A success which one must was aided enormously be the ineptitude of the strategic policies that the Soviet Union pursued.

[26] The administration of William Jefferson Clinton found it difficult to work with allies for

air war against Kosovo with the constant debates over target selection and the need to achieve unanimity among the NATO members.[27] This distrust of the utility of allies has extended into the immediate present. As recently as last year, the chief of staff of the U. S. Air Force argued before a public audience in Washington, DC, that future American allies had better show up speaking English and with the newest U.S. technologies for command and control.

On the other hand, those in the United States looking at the emerging strategic environment have had a very different attitude. Allies have in the past proved essential in providing American military with the bases necessary to launch operations.[28] Moreover, in a world where American intelligence possesses such exquisite technological capabilities, but appears so deficient in its knowledge of foreign languages, cultures, and even history, allies are going to be even more important because of their knowledge and understanding of their region, its culture, as well as the historical dimensions of the conflict that they bring to the table.[29] Without allies the United States will very much be in the position of a blind man, unable to see or understand what really motivates its future opponents on the international stage.

Joint Warfare in the Twentieth Century

World War I

As this paper has suggested, joint warfare existed in only the most primitive forms and under only specialized circumstances before 1900. But in the twentieth century it increasingly became a crucial component of military effectiveness. It certainly had a

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three simple reasons: first the president and his senior advisers believed that foreign policy would not be an important factor in the twenty-first century; and second that military power would be of even less importance; and third that historical experience and knowledge was entirely irrelevant to the conduct of foreign policy. For an recent outstanding account of the difficulties that such attitudes got the United states into see David Halberstam, *War in a Time of Peace, Bush, Clinton, and the Generals* (New York, 2001).

[27] For the extent of those difficulties see in particular, General Wesley K. Clark, *Waging Modern War* (New York, 2001).

[28] And this is a factor which is going to prove even more important in the future with the return of more forward deployed American forces to North America.

[29] The major intelligence failures of the United States over the past two decades have been so numerous and extraordinary that they hardly deserve mentioning.

rocky beginning in the First World War. The Dardanelles expedition, launched by Winston Churchill with the strong disagreement of Admiral "Jackie" Fisher, failed largely because of the almost complete inability of the British Army and the Royal Navy to work together.[30] This dismal failure of joint operations at the tactical and operational levels resulted in the failure of the one strategic alternative to fighting the war out on the Western Front with enormous losses of men and material. The Germans were able to launch a modest joint operation against the Baltic islands held by the Russians in 1916, but by then the rot that eventually led to the revolution was already setting.

There was one area where joint operations at the tactical level did enjoy some significant successes by 1918 and that was with the use of close air support to aid ground attacks. The Germans actually possessed designated close air support squadrons, especially equipped and trained for their Michael Offensive in March 1918. Similarly the British utilized close air support aircraft to support the advance of their tanks and infantry in the enormously successful attack of early August – an attack that Ludendorff described as the "blackest day" in the war for the Germany. Ludendorff commented about the "increased confusion and great disturbance" British air attacks had caused German ground troops during the battle.[31] However, only the Germans were to learn from the experiences of 1918 in the joint arena.[32]

The Interwar Period

The interwar period saw far greater movement toward the creation of true joint

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[30] The most recent examination of the Battle of Gallipoli is Nigel Steel and Peter Hart, *Defeat at Gallipoli* (London, 1994). Still worth reading is the classic study of the battle: Alan Moorehead, *Gallipoli* (London, 1954).

[31] For a discussion of close air support in World War I, see Richard Muller, "Close Air Support," in *Military Innovation in the Interwar Period,* ed. by Williamson Murray and Allan R. Millett (Cambridge, 2001).

[32] This was because of the fact that General Hans von Seeckt, chief of the general staff in the immediate postwar period created no less than fifty-seven different committees to study the lessons of the last war. The British created only one committee in *1932* to study the lessons of the last war and then suppressed its critical findings. For Seeckt's role in creating the new German Army see James S. Corum, *The Roots of Blitzkrieg, Hans von Seeckt and German Military Reform* (Lawrence, KS, 1992). For the British failure to learn from the war see Harold Winton, *To Change an Army, General Sir John Burnett-Stuart and British Armored Doctrine, 1927-1938* (Lawrence, KS, 1988).

capabilities But there were significant difference in the approaches taken from nation to nation. In Germany, the Luftwaffe was created a separate service in 1935. From its inception its leadership exhibited considerable interest in strategic bombing. Nevertheless, the Germans also displayed support for air power's other missions.[33] As a result, they devoted some significant resources to developing concepts and capabilities that would support the army in its waging of combined-arms mechanized warfare.[34] However, the German Navy and the Luftwaffe exhibited virtually no interest in working with each other and the results would show. graphically in World War II.

The British created the only true joint higher command, the Chiefs of Staff Sub-Committee, to exist in the interwar period. On the other hand the three services proved woefully unwilling to cooperate with each other in developing joint capabilities and doctrine. The Royal Air Force, clearly fearing that any joint cooperation might spell its end as an independent service, developed as its basic doctrine a concept of strategic bombing that was so exclusionary that cooperation hardly existed between it and its sister services.[35] When the war came in 1939, it soon proved it could not support ground forces by interdiction attacks, could not support the Royal Navy's efforts to protect Britain's Atlantic SLOCs (sea lines of communications), and had provided the navy with carrier aircraft that were completely obsolete in comparison to the aircraft that U.S. and especially Japanese carriers were carrying.

But the other British services were hardly more forthcoming. In the late 1930s the commandant of the Royal Navy's Staff College raised the possibility that the British services might consider the possibility of joint amphibious operations. His proposal met with complete rejection. Attitudes at senior levels in the military ranged from a smug belief that amphibious operations had worked well in the last war to a confidence that amphibious operations would never occur in the next.[36] One of the deputy chiefs of staff announced. in 1938 argued that the landings at Gallipoli indicated that nothing was wrong with British amphibious techniques except for a few minor breakdowns in

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[33] For the Luftwaffe's development and doctrinal concepts in the 1930s see Williamson Murray, *Luftwaffe* (Baltimore, MD, 1985), chapter 1.

[34] For a discussion of those efforts to create close air support capabilities see Williamson Murray, *German Military Effectiveness* (Baltimore, MD, 1992), chapter 8.

[35] For the development of the RAF's doctrine see Murray, *Luftwaffe*, appendix 1.

[36] Williamson Murray, "The Change in the European Balance of Power, 1938-1939," Yale University Dissertation, 1975, pp. 47-51.

communications.[37]   Suggestions that the Royal Navy might want to prepare for joint operations ran into a stone wall.   The Deputy Chief of Naval Staff, Admiral Andrew Cunningham – the eventual commander of British naval forces in the Mediterranean from 1940 through 1943 – reported that "the admiralty at the present time could not visualize any particular [joint] operation taking place and they were, therefore, not prepared to devote any considerable sum of money to equipment for [joint] training."[38]   The army proved no more imaginative.   In January 1939 Lord Gort, the Chief of the Imperial General Staff announced that railroads would always allow land-based power to concentrate more rapidly than sea-based power.   Thus the strategic mobility conferred by sea power, although politically an attractive idea, no longer worked in favor of naval power.[39]   Such attitudes go a long way towards explaining why British forces were to make such a mess of first the Norwegian campaign and then the defense of Singapore.

The record of the U.S. services was quite different.   Admittedly, the nascent U.S. Air Force, still a part of the army administratively, but displaying most of the same arrogant disregard for past military experience as did the RAF, was hardly interested in cooperating with either the navy of the ground forces in the army.[40]   However, in the sphere of developing joint amphibious doctrine and capabilities, the American services were far ahead of everyone else.   The American effort was undoubtedly helped by the peculiarities of military organization.   The Department of the Navy possessed its own ground forces the U.S. Marine Corps, and because no unified air component had been developed, both the navy and the marine corps possessed their own air capabilities. Maritime strategists in the United States were driven to consider joint amphibious operations by the realities of the enormous distances of the Pacific Ocean.[41]   It was clear that the navy would need amphibious capabilities to seize the bases on which its logistics

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[37] PRO CAB 54/4, DCOS 64, 8.2.38., DCOS Sub-Committee, "The Establishment of a Special Striking Force for Amphibious Operations," Letter from the Deputy Chief of the Air Staff to the Deputy Secretary Committee on Imperial Defense.

[38] PRO CAB 54/2, DCOS/30th Meeting, 15.11.38., DCOS Sub-Committee, p. 4.

[39] PRO CAB 53/10, COS/268th Meeting, 18.1.39., p. 83.

[40] For its attitudes see Williamson Murray, "Strategic Bombing,, The British, American, and German Experiences," in *Military Innovation in the Interwar Period*; see also Muller, "Close Air Support," in *Military Innovation in the Interwar Period.*

[41] Those distances in the war games in Newport in the 1920s led naval planners to think about the possibilities of underway replenishment logistics, but that was a capability the U.S. Navy would not possess until 1944.

would have to depend in any Pacific campaign. The marine corps led this effort throughout the interwar period.[42] By the outbreak of World War II the marine corps had developed the basic doctrine and procedures with considerable cooperation from the navy and some cooperation from the army. While the specialized equipment required for such operations had yet to be produced, when the United States entered the war in December 1941, the services had already established a solid conceptual base, on which joint amphibious operations could proceed..

World War II

It is almost as difficult to talk about joint warfare in regards to the Axis powers as it is difficult to talk about combined warfare. The Germans with their ability to cooperate in the tactical sphere achieved some stunning results in the opening campaigns of World War II. But the success of the invasion of Norway, *Operation Weserübung*, depended for its success largely on British incompetence. There was no joint German strategy, or for that matter joint operational concepts. Planning for "Operation Sealion" in summer 1940 – the proposed invasion of the British Isles – displayed no common concepts of operation or even language.[43] Matters never improved. There was no join high command – the Armed Forces High Command, *Oberkommando der Wehrmacht (OKW)* was little more than an administrative staff that supported for Hitler's decisions. General Walter Warlimont, one of the senior officers in the OKW, noted in after the war: "In fact the advice of the British Chiefs of staff and the US. Joint Chiefs was the deciding factor in Allied strategy. At the comparable level in Germany, there was nothing but a disastrous vacuum."[44] This was a state of affairs, it should be noted, that was as much due to the rivalry among the services as to Hitler's leadership.[45]

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[42] For a comparison of the development of amphibious doctrine and capabilities in the United States, Britain, and Imperial Japan, see Allan R. Millett, "Assault from the Sea: The Development of Amphibious Warfare Between the Wars, The American, British, and Japanese Experiences," in *Military Innovation in the Interwar Period.*

[43] In fact, the record suggests that the three services planned entirely in isolation with the army in particular paying no attention to the navy's capabilities, capabilities very much attenuated by the losses suffered in the Norwegian campaign.

[44] Walter Warlimont, *Inside Hitler's Headquarters* (New York, 1964), p. 54.

[45] In this regard see the discussion in Williamson Murray, *German Military Effectiveness* (Baltimore, MD, 1992), chapter 1.

The situation appears to have been much the same with regards to the other two Axis powers. In the case of Italy, the so-called Supreme Command – *Commando Supremo* – exercised no real power over the services, which waged three entirely separate efforts.[46] The result that the services were never able to propose reasonable strategic approaches to a regime which in its ideological haze, was never able to balance available means with attainable ends. Matters were no better in Japan where there was not even a joint high command. With no higher direction available, the Imperial Japanese Army and Navy have waged two separate wars until the roof fell in early1944. Thereafter, the preponderance of American strength was such that it mattered little what the Japanese leadership did or did not do.[47]

The conduct of the joint war by the Anglo-American powers was on a wholly different plane. On the strategic level the organizational structure for analyzing strategic and military problems that the British had created before World War II played a major role in Allied success.[48] The success of that system was not so impressive in the early war years, but that was largely due to the overwhelming preponderance of Axis strength. But the British were able to set the conditions for the recovery of Western fortunes once the United States entered the war. Then by the analytic power of their system they persuaded the Americans to embark on major operations in the Mediterranean, a commitment that ran fundamentally contrary to American conceptions of how the war should run. The success of the British approach to a joint articulation of strategy, particularly at the Casablanca Conference, resulted in the creation of the Joint Chiefs of Staff in the United States, and what was particularly important, an organizational approach that emphasized jointness in the conduct of the operational level of war.

It was in the Pacific where joint operations reached their most impressive level of cooperation among the American services. Because of the distances involved the projection of military power *demanded* that the services work together. In the Southwest Pacific, MacArthur's advance up the coast of New Guinea was especially

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[46] For the incredible incompetence of the Italian war effort see in particular MacGregor Knox, *Hitler's Italian Allies: Royal Armed Forces, Fascist Regime, and the War of 1940-1943* (Cambridge, 2000)

[47] For the most recent Western critique of Japanese strategy see Murray and Millett, *A War To Be Won, Fighting the Second World War*.

[48] For the processes and structure involved in the making of British strategy from 1920 through 1945 see Williamson Murray, "The Collapse of Empire: British Strategy, 1919-1945," in *The Making of Strategy, Rulers, States, and War*.

helped by the superb support he received from George Kenney's Fifth and Thirteenth Air Forces as well as his naval components. By conducting Joint operations, MacArthur kept Japanese commanders permanently unbalanced. Similarly, after the heavy losses at Tarawa had alerted Nimitz and his component commanders as to the full extent of the difficulties they would confront in making opposed landings, the Central Pacific island hopping campaign soon emerged as one of the most impressive operational level campaigns of the Second World War – especially because of the degree of cooperation among sailors, marines, and soldiers. The result of that campaign was to seize the bases in spring 1944 from which the United States Army Air Forces "strategic" bombers could begin their attacks in fall 1944.

The story in the European Theater of Operations was similar. By spring 1944 the Allies had developed the concepts and the capabilities which made possible the most complex joint operation of the Second World war possible – namely the landing on the French Coast in Operation "Overlord." It was not that the cooperation of all of the participants was willingly given. The strategic bomber barons fought a ferocious battle in March 1944 to prevent their bomber forces from coming under the operational command of Overlord's leader, General Dwight Eisenhower. They eventually lost that battle, but only because Eisenhower was willing to take the argument all the way to Roosevelt and Churchill.[49] Eisenhower and his deputy, Air Marshal Tedder, then used the Allied air forces, including the strategic bomber forces, to attack the French transportation network throughout western, northern, and central France. By June 1944 the attacks had entirely wrecked the French transportation system; in effect the Germans had lost the battle of the logistical buildup even before the first Allied troops landed on the shores of France.[50]

The one area where joint operations did not work so well came in the landing on Omaha Beach – a landing where U.S. casualties were *three* times the casualties suffered at Tarawa six months earlier.[51] In April 1944 General George Marshall had been

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[49] For the discussion of the arguments by a leading participant in the debates see Solly Zuckerman, *From Apes to Warlords, The Autobiography (1904-1946) of Solly Zuckerman* (London, 1978). See also Murray, *Luftweaffe,* pp. 249-256.

[50] For the success of the Allied transportation plan see Murray, *Luftwaffe*, pp. 252-256.

[51] After the Second World War, U.S. Army leaders criticized marine losses at Tarawa as revealing a general ignorance of modern tactics on the part of the marine corps. However, army historians never admitted to the overall casualties suffered at Omaha beach by the two divisions that landed there (the 1st and the 29th) undoubtedly because they were so much

particularly impressed by the performance of the landings at Kwajalein in the Pacific the previous month. Consequently, he selected the 7th Division's Commander, who had led army forces in the Kwajalein landings to go to Europe and pass along the lessons learned. When the officer concerned, General Pete Corlett, arrived in Europe, he discovered that army commanders responsible for the upcoming invasion had no interest in learning from "a bush league theater."[52] The result was that the troops landing at Omaha Beach received twenty minutes of naval gunfire support from a single battleship (the Japanese garrison at Kwajalein had been bombarded by no less than seven battleships). The result was a far higher loss against weaker defenses than had been the case at Tarawa a battle. The landing at Omaha Beach came perilously close to defeat, a result which might have led to the failure of the whole "Overlord" Operation.[53]

After World War II

When the Second World War ended in August 1945, U.S. and Allied forces were posed to launch the largest joint operation in history, Operation "Olympic," which would have dwarfed even the "Overlord" landings. By that point in the Pacific war joint operations had reached a high point. Ironically, that high point of interservice cooperation would not again be reached until Operation "Desert Storm" in January-February 1991. There were a number of reasons for this. The first was the fact that the appearance of nuclear weapons seemingly introduced such a revolutionary technological change into the conduct of war that many senior military leaders, particularly in the air force, believed that the lessons of World War II were no longer valid. Second, those who had conducted the war in Europe came to dominate the postwar American military, and the European Theater of Operations had seen less joint work among the services than was the case in the Pacific.[54] Finally, while joint cooperation among the services had reached significant levels, it had largely been the result of operational and tactical requirements. The peacetime culture and attitudes of the prewar services dominated the landscape. Thus, Omar Bradley, by the late 1940s Chairman of the Joint Chiefs of Staff, would announce

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heavier than those suffered by the marines at Tarawa.
[52] Murray and Millett, *A War To Be Won,* p. 419.
[53] I have discussed these issues in an article, "The Disaster at Omaha Beach," to be published in the near future by *Military History Quarterly.*
[54] I am indebted to Major General Robert Scales, U.S. Army (retired) for this point.

that there would never be another major amphibious operation, as he and his army colleagues led the charge to eviscerate the marine corps all in the name of "jointness."[55]

The result of interservice bickering and arguments were the Key West Agreements which determined the framework for joint operations until the mid-1980s with the passing of the Goldwater-Nichols Bill. The Key West agreements were in the end a rather weak compromise between the army's conception of a strong joint community of the services and the navy's and marine corps' belief in strong service communities. But to a great extent the army undermined its own arguments in favor of jointness by making a power play to eliminate the marines from the equation. Moreover, the creation of a new service, the United States Air Force, with its corporate culture which denigrated all the other roles and missions except for strategic bombing, a concept now reinforced by the introduction of nuclear weapons did little to further the concept of joint operations.[56]

The record of joint cooperation in the period after the Key West agreements was, not surprisingly, not all that impressive. The air force proved largely resistant to the idea of supporting ground forces throughout the Korean War.[57] The marine corps and the army cooperated when necessary, but hardly waged what could be termed a joint ground war, while the navy's efforts remained largely at sea. Part of the lack of a joint effort had much to do with the nature of the Korean War in its last two years, when the American political leaders were willing to see the war remain a stalemate. Nevertheless, it is distressing to think that service leaders were willing to put the lives of Americans at hazard in pursuit of narrow, parochial goals.

Matters were even worse during the Vietnam War. A major factor in the mistaken military assumptions with which the United States entered the war in summer 1965 had to do with parochial service perspectives that prevented the Joint Chiefs of Staff from speaking out in a coherent fashion or offering joint strategic and operational military advice.[58] Admittedly part of the story involved third-rate figures without the

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[55] The landings at Inchon during the Korean War undermined that claim.

[56] For the enduring air force belief that strategic bombing was the beginning and end of air power's contribution see Williamson Murray, "The United States Air Force: Past is Prologue," in *America's Defense*, edited by Michael Mandelbaum (New York, 1989).

[57] See Allan R. Millett, "Korea, 1950-1953," in *Case Studies in the Development of Close Air Support,* edited by Benjamin Franklin Cooling (Washington, DC, 1990).

[58] On this sad subject see particularly H.R. McMasters, *Dereliction of Duty, Lyndon Johnson, Robert McNamara, the Joint Chiefs of Staff and the Lies That Led to Vietnam* (New

morale fibre to stand up and give their honest advice.[59] Things went down hill from there. America's two tactical air forces -- one belonging to the navy, the other to the air force -- waged independent air campaigns against North Vietnam. Air force fighter bombers, flying mostly out of air bases in Thailand, attacked targets around Hanoi and inland from the sea. Navy aircraft, flying off of carriers in the Gulf of Tonkin, largely confined themselves to targets in the area of Hanoi and along the coast. But the bottom line was minimal joint cooperation that resulted in mounting losses and dead Americans in an air campaign that had minimal focus.[60]

Things were little better on the ground in the war in South Vietnam. The overall theater commander, General William Westmoreland, placed the marine units under his command as far away as possible, instead of utilizing them in the Delta where their capabilities, military culture, and amphibious nature would have made the most sense. The air force dropped huge amounts of ordnance though out South Vietnam, but for the most part seems to have paid little attention to the actual needs of ground forces. In many cases close air support proved crucial to the survival of marine and army ground units, but more often than not the air force viewed close air support in terms of what was most convenient to its own mechanistic view of war as well as its measures of effectiveness, rather than in terms of what would be most helpful to ground forces under attack by the North Vietnamese.

When the Vietnam war ended early 1973, U.S. military forces were in shambles. Ill-disciplined, riven by racial strife, affected by the consequences of defeat, reviled by much of the civilian society, the services had to put their own houses in order – through a period of downsizing, sparse budgets, and a refocusing of missions. It is not surprising then that the repair of the joint deficiencies that had shown so glaringly throughout the Vietnam War was not high on service priority lists, especially in view of other problems, none of which offered up easy solutions. In spring 1980 the United States launched a raid to free its embassy personnel held hostage by Ayatollah Khomeini's

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York;,1997).

[59] The advice proffered by the U.S. government's senior military leaders stands out in stark contrast to the moral courage displayed by Generals Matthew Ridgway and James Gavin during the crisis revolving around the looming French defeat at Dien Bien Phu in spring 1954. See Bernard Fall, *Hell in a Very Small Place, The Siege of Dien Bien Phu* (New York, 1968).

[60] For the air force side of the story – and not a pretty one – see Marshall L. Michelle III, *Clashes, Air Combat over North Vietnam, 1965-1972* (Annapolis, MD, 1997).

Iranian Islamic Republic. Luckily for most of the Americans involved, the raid failed before it began with the disaster at "Desert One."[61] But whatever the outcome, the planning and execution underlined a general lack of cooperation among the services, a weak command that was anything but joint, and a level of parochial service focus that appeared inexcusable to most Americans.

The election of Ronald Regan as president of the United States in November 1980 soon led to vastly increased budgets, and a general improvement in U.S. military capabilities. But the performance of "joint" operations in the early 1980s still left much to be desired. In fall 1983 the United states intervened in Grenada, ostensibly to liberate a group of American medical students, but in fact to prevent the Cubans from helping a group of "revolutionary" Grenadians from solidifying their hold on that small Caribbean island. Given the military power the United States brought to bear, there was never any question of success or failure. However, once again the services appeared to focus on their narrow parochial interests rather than on the larger picture of the conduct of joint operations. The fact that an army company commander had had to use his AT&T long distance charge card to call the operations room at Fort Bragg in order to request air support from aircraft overhead, because his radios could not contact them summed up a general lack of jointness that the services had displayed over the past thirty-five years, since the ending of World War II.

The Constitution of the United States makes it clear that the Congress is responsible for every aspect of national defense except for command.[62] Yet it rarely involves itself in matters of national defense at the theoretical or organizational level. For the most part it is content to quibble with service representatives and divide among itself the financial benefits that national defense can bring to various districts and states. Nevertheless, there are times when the Congress does intervene, when national security matters exist which the executive branch and the services seem unable or incapable of resolving. Congressional pressures that led to reform of the navy and army at the turn of the last century or the Morrow Board in the mid 1920s are cases in point. In the latter

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[61] The failure to provide sufficient helicopters led to the raid's cancellation deep in Iran. But had the raid proceeded it is likely that it would have caused heavy casualties to those involved as well as to the hostages.

[62] The Constitution makes the President of the United States the commander in chief of all the military forces of the Republic, but it leaves all the other responsibilities of raising and maintaining military forces in the hands of the Congress..

case the Morrow Board determined that there would be no independent air force, and that air power would continue to be divided between the army and the navy.[63]

Such was the situation in the mid-1980s when Congress, deeply annoyed by the lack of progress that the Pentagon was making in joint matters, passed the Goldwater-Nichols Bill. That legislation changed to relationship between the service chiefs and the Chairman, provided the latter with significantly enhanced powers, and made the regional cincs (commander in chiefs) far more powerful figures. It also made assignment to joint billets an essential way station on the way to promotion to general and flag rank. No longer would joint billets be positions that the services filled with their weakest officers, which had been the case before 1986. Nevertheless, whether the Goldwater-Nichols Bill was able to significantly improve the performance of America's joint headquarters and military institutions remains an open question.

Prospects for the Joint World in the Twenty-first Century

At the turn of the twentieth century America's military institutions confront a rapidly changing world, where the inclusion of changes in technology present unique challenges. A number of theorists and technologists have argued that these technological changes in sum represent a truly revolutionary advance – one that will allow U.S. forces to see their opponents from afar and quite literally destroy everything that moves.[64] Such claims have extended even to an argument that the U.S. technological advantage will remove the

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[63] Equally important was the fact that the Morrow Board proposed that no naval officer could command a carrier or a naval air station unless they were a qualified aviator. The resulting legislation led to a rush by senior naval officers to gain qualifications as naval aviators, which within a decade had provided the U.S. Navy with an officer corps whose leadership at the senior levels was far more knowledgeable in aviation matters than was the case with the Imperial Japanese Navy or the Royal Navy. For a discussion of these issues see Thomas C. Hone, Norman Friedman, and Mark D. Mandeles, *American and British Aircraft Carrier Development. 1919-1941* (Annapolis, MD, 1999).

[64] Among the more extreme of these arguments are The United States Air Force, *New World Vistas: Air and Space Power for the 21st Century* (Washington, DC, 1995); Stuart E. Johnson and Martin C. Libicki, *Dominant Battlespace Knowledge: The Winning Edge* (Washington, DC, 1995); and James R. Blacker, "Understanding the Revolution in Military Affairs: A Guide to America's 21st Century Defense," Defense Working Paper No. 3, Progressive Policy Institute (Washington, DC, 1997).

fog of war from future battlefields.[65]   In fact, such technological possibilities are simply not in the cards, not just because they fly in the face of modern science, but because they fly in the face of everything that modern science is telling us about the world.[66]

Nevertheless, the technologists do have a point: modern information technologies offer the possibility of significantly decreasing the frictions of war that U.S. and allied forces might suffer in a conflict, while increasing those that affect enemy forces. And it is in the realm of utilizing the effects achieved by joint forces through common command and control that information technologies might make the greatest contribution.[67]   The problem is that there appear to be significant impediments in the way of establishing true joint forces. How to explain this is an issue of some difficulty, when as long ago as 1946 General Eisenhower was writing to Admiral Chester Nimitz: "Separate ground, sea, and air warfare is gone forever. If we ever again should be in involved in war, we will fight with all elements, with all services, as one single concentrated effort..."[68]

The first major problem that confronts the creation of more closely integrated joint forces lies in the fact that the individual services have remained in charge of the Pentagon's budgeting processes.   Thus, over the past decades the cincs have consistently placed on their wish lists a number of capabilities such as UAVs (unmanned aerial vehicles), ecm (electronic counter measure) aircraft, and a number of other platforms (such as JSTARS), mostly dealing with ISR (intelligence, surveillance, and reconnaissance) that the services have consistently underfunded. This has reached the point that the Pentagon has invented a euphemism to describe such capabilities: "high demand, low density" items. The current Secretary of Defense, Donald Rumsfeld, appears finally to be taking this problem in hand. In the budgeting processes of the Pentagon, the secretary aims to retain control of substantial resources, which he will then direct to be used in the funding of the "high demand, low density" platforms.

But the unwillingness to fund items that could contribute significantly to the

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[65] See the quotes attributed to Admiral William Owens in Thomas Duffy, "Breakthrough Could Give Forces Total Command of the Future Battlefield," *Inside the Navy*, 23 January 1995; Peter Grier, "Preparing for 21st-Century Information War," *Government Executive*, August 1995; and Admiral Owen's own "System of Systems," *Armed Forces Journal,* January 1996.
[66] For this line of argument see particularly Barry D. Watts, *Clausewitzian Friction and Future War* (Washington, DC, 1996).
[67] Along these lines see Future Joint Force Working Group, "Future Joint Force Concept," prepared fot the Chairman, Joint Chiefs of Staff, 21 August 2000.
[68] General Dwight D. Eisenhower in a memorandum to Chester W. Nimitz, 17 April 1946.

conduct of joint operations is unfortunately only the symptom of systemic problems that lie far deeper in the very framework of the American military. To put it bluntly no joint military culture exists to form the mental image of those senior general and flag officers charged with America's defense.[69] Without that image those on joint assignments find it exceedingly difficult to develop realistic concepts of how one might actual use emerging technologies to fight in future wars. A joint culture depends on a number of complex factors – education, experience in joint operations, and deep experience and understanding of the individual capabilities that the services bring to the table.

Some have suggested that one of the approaches that might create a more pervasive joint culture would be to destroy the service cultures which appear to be so inhibiting to jointness. Such an approach, however, would very much be a case of throwing out the baby with the bath water.[70] The basis of any joint approach to military operations must be a coherent and effective understanding of warfare in the different mediums: land, sea, and air.[71] Without that understanding, there can be no effective joint operations. Officers cannot become truly joint until they not only understand, but have mastered the peculiarities and difficulties of the tactical problems that their domain raises. Until that point, they can only be amateurs in the art of war. Thus, the service cultures must develop officers completely at home in their milieus, because if they are not, they will not be able to contribute much to the conduct of joint operations.

The problem that besets the creation of a truly joint culture, informed and imprinted with service cultures, is two fold. At its heart lies the deep-seated problems of the fundamental laws that govern the services in the conduct of their personnel systems. This personal system was established in the late 1940s to address the problems raised by a very different world, and subsequent amendments to this framework have only addressed symptoms rather than reformed the underlying philosophy.[72] One of its basic

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[69] The JCS have published two documents "Joint Vision 2010" and "Joint Vision 2020" which unfortunately are so general that they at best only suggest possible paths to the future.

[70] On the importance of military culture see Williamson Murray, "Does Military Culture Matter?," *Orbis,* Winter 1999; and Williamson Murray, "Military Culture Does Matter," *Strategic Review*, Spring 1999.

[71] And the great maritime nations must in one fashion or another develop amphibious forces, in the case of the United States the marine corps, to project their military power ashore.

[72] The underlying purpose of the 1947 personnel legislation was to create a system that promoted officers or forced them out and which aimed at encouraging the majority of officers to retire in their early forties, an aim that the health profiles of the time fully justified.

philosophical principles aimed at preventing the atrophication of service officer corps which had happened in the period between 1920 and 1939. The system, characterized by the slogan "up or out," set relatively rigid time lines for promotion. That system is still in place today, and its financial inducements actively encourage officers to retire between the ages of forty-one and forty-five. Moreover, various actions by Congress as well as the service personnel systems themselves have added a number of significant gates and duties that officers must meet and perform in order to get promoted. The most recent of these was the action of the Goldwater-Nichols Bill, which, to solve the problem that the services were refusing to send their best officers to the joint staff, decreed that in order to be promoted to general or flag rank officers must serve at least two years in a joint billet.

The result has been that officers confront an enormous number of requirements, including service on joint staffs, all of which must be completed in order to get promoted. Needless to say none of those who designed the personnel systems in the late 1940s had any idea of the complexities of education and technology that officers in the twenty-first century would confront. Yet a personnel system that was designed to meet the needs of industrial age military organizations still guides the personnel systems of the U.S. military in a new century. The result in general has been to rob officers of all flexibility in their education and professional development outside of narrow career tracks.

For the joint world the results have been thoroughly pernicious. While Goldwater-Nichols did much to heighten the prestige of billets in the joint world, the fact that the services must push the maximum number of officers through these positions in order to qualify a sufficiently large pool of officers for promotion to general or flag officer means that officers below the rank of general serve the absolute minimum of time in the joint world. In other words, they barely have sufficient time to learn their jobs, much less gain a wider perspective on the conduct of joint operations. With such personnel policies, it is virtually impossible to create a joint culture, built on the knowledge of officers who are familiar not only with their own service world, but with the wider world of joint cooperation and understanding. Yet given the constraints of the lock-step personnel systems, there is simply no other alternative.

The difficulties that the personnel system inflicts on the creation of a joint culture is further exacerbated by the general failure of the services to take professional military

education (pme) seriously.[73] Only one of the war colleges, the Naval War College, presents the students with a challenging, graduate level curriculum on strategy.[74] The quality of the other institutions ranges from indifferent to bad.[75] That lack of quality in faculty and curricula reflects to a great extent the current cultures of the services today, with the possible exception of the marine corps – cultures that are profoundly anti-intellectual and disinterested in the serious study of the military profession or operational and strategic thinking, much less the lessons of the past.[76]

The joint professional military educational system reflects such attitudes to an even greater extent. In fact, its staff college is by far and away the weakest institution of professional military education in the system. The National Defense University in Washington, while it has some first-class faculty members, has a thoroughly undistinguished curriculum. Moreover, far too many of its research, faculty, and writing positions end up being filled with refugees from the last administration, who are angling to return to government in the next. The result is that the system is incapable of developing the intellectual capital required to build the foundation of a robust joint culture. Moreover, there are few places in Washington, either within the system or outside of it for that matter, capable of developing the concepts and thinking required to push joint capabilities down the road.

Joint Forces Command is supposed to fill a portion of the gap in the development of concepts. Unfortunately, it possesses real world responsibilities as the successor to Atlantic Command; and as a result its commanding officers have tended to place their best staff officers in positions other than those having to deal with experimentation and concept development. The Joint Staff, which supports the Chairman of the JCS and the Secretary of Defense, is also partially responsible for joint concept development. But

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[73] For the present state of professional military education in the United States today see in particular: Leonard D. Holder, Jr. and Williamson Murray, "Prospects for Military Education," *Joint Forces Quarterly,* Spring 1998; see also Williamson Murray, "Grading the War Colleges," *The National Interest* Winter 1986/1987.

[74] And the navy places no emphasis in sending its officers to its war college – or any other for that matter. As recently as three years ago only half of the admirals on active duty had attended a war college or its equivalent.

[75] There are a few other bright spots, in particular the second year staff college programs run by the army, marine corps, and the air force (The School of Advanced Military Studies, The School of Advanced Airpower Studies, and The School of Advanced Warfighting).

[76] As a senior four star general in the army recently stated to the students of the Army War College: "I hope you have a great year playing softball and golf this year!"

it is so busy in day-to-day matters that it is almost incapable by its situation to perform any long-range thinking. The result of all these various factors has been a very weak joint community, one largely inhabited by officers passing through on two year tours with virtually no chance to do anything but learn their jobs. The prospects for significant change do not appear favorable, because no senior officer in either the joint world or in the services has been willing take on a personnel system that is deeply and happily entrenched with not the slightest desire to change.

Conclusion

The United States will need strong allies and alliances in this century just as it did in the last. In our complex, ambiguous world there is no other choice. As the events of 11 September underlined, there is no escape from the harsh fact that there are many in the world who would like to see the current world's stability destroyed. And as the ensuing American response has underlined, the projection of American power into distant parts of the world, politically as well as militarily, depends on the support of nations from Britain, France, Germany, and Japan to nations like Pakistan and the Central Asian Republics. To meet the challenges that the First World will confront, the Americans and their allies must be able to project military forces that can work together in an effective and coherent fashion.

Similarly, if the military forces of the United States are to see the significant utilization of new technologies to their fullest extent, they need to develop a true joint culture based on professional thinking and education. As Michael Howard has suggested, war is not only the most demanding of all professions physically, it is also the most demanding intellectually. It is to that latter aspect that American military professionals need to turn their attention. Only the creation of a joint culture that rests on serious intellectual development and concepts can provide the flexibility of mind and habit that the future demands.