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Edited by
Allan R. Millett and Williamson Murray
Mershon Center, The Ohio State University

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The Effectiveness of Military Organizations

ALLAN R. MILLETT, WILLIAMSON MURRAY, and KENNETH H. WATMAN
Mershon Center, The Ohio State University

Introduction

The interrelated issue of military structure and effectiveness confronts planners and commanders with some of the most intractable intellectual issues associated with organizational behavior. The realities of preparing forces to kill and to face death in the service of the state create problems with no analogues in other forms of social interaction. It is easier to define the behaviors one wishes to discourage in individuals - cowardice, flight, and non-cooperation - than to define the positive performance of complex organizations, which all armed forces inevitably become. 'The primary object of organization,' wrote General Sir Ian Hamilton, 'is to shield people from unexpected calls upon their powers of adaptability, judgment, and decision.' Yet other commanders have observed that individual and organizational flexibility is essential to military success.

Despite a sizeable theoretical literature on organizational efficiency, military effectiveness remains an ill-defined concept. For some civilian and military analysts, effectiveness is tied to the social structure of military organizations. The sociological approach focuses on factors such as unit cohesion, group solidarity, small-unit leadership, and Kameradschaft. Similar research seeks to link effectiveness to non-matterial factors like esprit, staying power, and the will-to-fight. Outside of the small-unit focus, the sociological focus - regardless of whether the methodology is quantitative or descriptive - may provide special insights into the likely performance of large-scale military organizations, since it focuses on such problems as the normative aspects of officership, recruitment, military socialization, morale and political attitudes, and troop trainability.

The operational approach emphasizes the importance of doctrines and
tactical systems and their proper utilization on the battlefield. By implication, this concept is also sensitive to companion issues such as training and leadership, but pays special attention to weapons utilization. The analysis may flow from various types of wargames, a mainstay of military education for almost two hundred years, or from field exercises. It may also be developed from combat experience, distilled from post-combat interviews, or analyzed in the quantitative reconstruction of a series of engagements. Operational analysis pays special attention to the physical environment in which military events occur, and it may even attempt to introduce such mathematical rigor that it allows the prediction or at least the establishment of probable outcomes. Most comparisons of modern armed forces utilize such approaches. While operational analysis employs quantitative techniques for the prediction of combat results between various forces, it has also been transformed into another variant, systems analysis, which produces cost-benefit comparisons of functionally similar forces in order to aid in the building of strategic theory, the clarifying of weapons procurement, and the assessing of logistical efficiency.

These modes of analysis, however, valid, provide only partial answers to organizational effectiveness. Military activity is extraordinarily heterogeneous, and the existing measures of effectiveness fail to capture the full complexities of military organizations and their missions. Military activity has both vertical and horizontal dimensions. The vertical dimension involves the preparation for and conduct of war at the political, strategic, operational, and tactical levels. Taken together, these categories form a hierarchy of actions which military organizations must coordinate from the highest policy levels to tactical execution. The horizontal dimension consists in the numerous, simultaneous, and interdependent tasks that military organizations must execute at each hierarchical level with differing levels of intensity in order to perform with proficiency. These tasks include manpower procurement, planning, training, logistics, intelligence, and technical adaptation as well as combat. An adequate definition of military effectiveness must include all these aspects of military activity. Similarly, the determination of overall military effectiveness requires assessments across the horizontal and vertical range of military activities. In addition, a true assessment of effectiveness should examine the likely barriers to purposeful change as well as the opportunities for reform. Aggregating the estimated effectiveness of hundreds of small units is not the same as evaluating overall organizational performance.

Definitions and General Points

Military effectiveness is the process by which armed forces convert resources into fighting power. A fully effective military is one that derives maximum combat power from the resources physically and politically available. Effectiveness thus incorporates some notion of efficiency. Combat power is the ability to destroy the enemy while minimizing the damage that he can inflict in return. The precise amount of necessary damage depends on the goals of the war and the physical characteristics of armed forces committed to its prosecution. Resources represent the spectrum of assets important to military organizations: human and natural resources, money, technical prowess, industrial base, governmental structure, sociological characteristics, political capital, the intellectual qualities of military leaders, and morale. The constraints under which military organizations labor are both natural and political. Natural constraints include such things as geography, natural resources, the economic system, population, time, and weather. Political constraints refer to national political and diplomatic objectives, popular attitudes toward the military, the conditions of engagement, and civilian morale.

Obviously, no precise calculation of the aggregate military effects of such disparate elements is possible. But it is essential to reach a judgment about the possibilities open to a particular military organization in a given situation. Only then can one compare national armed forces, possessing vastly different characteristics, problems, and enemies, in a fashion that can explain their relative effectiveness.

Some relationship exists between military effectiveness and victory. If 'victory' were the sole criterion of effectiveness, however, one would conclude that the Russians were more effective than the Finns in the 'Winter War' of 1939–40 and the Germans in the 1941–45 war. However, a detailed examination of those struggles suggests that this was simply not so. Rather the Finns and Germans functioned more effectively at the operational level with limited resources than did their opponents. Victory is an outcome of battle; it is not what a military organization does in battle. Victory is not a characteristic of an organization but rather a result of organizational activity. Judgments on effectiveness should retain some sense of proportional cost and organizational process.

Military activity takes place at four different levels: political, strategic, operational, and tactical. Each category overlaps others, but each is characterized by different actions, procedures, and goals. Therefore, one must assess military effectiveness separately at each level of activity. It is doubtful whether any military organization is completely effective at all four levels simultaneously. No doubt this results from human limitations, but it also reflects the fact that the prerequisites for effectiveness at one level may conflict with those at another. For example, American military forces in South Vietnam might have increased their effectiveness at the tactical level by a greater willingness to close with the enemy instead of relying so much on indirect fire power. However, the price would likely have been higher casualties and therefore reduced political effectiveness. When such conflicts occur, the organization may have to make deliberate choices to diminish effectiveness at one level in order to enhance effectiveness at other levels.

The basic characteristics of military effectiveness cannot be measured with precision. Instead, any examination must rely on more concrete indicators of effectiveness at the political, strategic, operational, and tactical levels. Therefore, we have divided the remainder of this chapter into four sections. Each begins with a general description of a level of military activity and then examines various aspects of effectiveness for that particular level. The answers provided aim at focusing attention on the various facets of military
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effectiveness at that level and at determining precisely where and in what ways organizations have or have not been effective. The goal is to identify those characteristics of military organizations useful to planners interested in assessing the effectiveness of potential adversaries or allies.

Political Effectiveness

For a military organization to act strategically, operationally, or tactically, it must consistently secure the resources required to maintain, expand, and reconstitute itself. Almost always, this requires the military to obtain the cooperation of the national political elite. Hence, the effort to obtain resources for military activity and the proficiency in acquiring those resources constitute political effectiveness. Resources consist of reliable access to financial support, a sufficient military-industrial base, a sufficient quantity and quality of manpower, and control over the conversion of those resources into military capabilities. The process through which modern military organizations obtain resources follows a general pattern. Military leaders assess potential adversaries and calculate the variety and level of the threat posed to national security. On the basis of those conclusions, they present arguments to the political leadership for a share of resources over some period of time to meet the threats to national security. Depending upon the regime and circumstances, military services will face objections from civilian departments that other needs are more crucial to national welfare. In a limited sense, a military organization’s political effectiveness depends on an ability to articulate its needs more persuasively than its competitors can articulate theirs.

A critical element in the ability to persuade or coerce involves the degree to which the political elite regards military activity as legitimate and officership as a distinct profession requiring extended education and special expertise. If the political leadership perceives military skills as largely intuitive and undifferentiated from civilian occupations, military arguments for a large share of the nation’s resources are not likely to carry much weight. However, to the extent that officers are viewed as experts in a specialized and demanding function not mastered without long preparation, military assessments of the threat confronting a nation and recommendations for a particular response are much less likely to be directly contested. Military claims on resources may still not be granted in toto, but the credibility of the military’s arguments for resources will usually not be the primary issue in dispute. Without political effectiveness, all other types of effectiveness are endangered. The following are various measures for evaluating the political effectiveness of a military organization.

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nation, but in each the essence of the process is similar: the armed forces must compete both among themselves and with others for scarce resources. They accomplish this by convincing the political leadership that their needs are of greater importance than those of others. There are various cases to be made, but usually the military must educate or persuade budgetary authorities that the nation will face increased risk and dangers without the desired funding. This case is usually made by assessing the capabilities of potential adversaries and by using that analysis to extrapolate possible intentions. Armed forces pervasive enough to secure steady, predictable, and high levels of support must rate highly in terms of political effectiveness.

Both the British Army and the French Air Force during the interwar period provide examples of political ineffectiveness as measured by their ability to secure resources. In the former case, the British Army was underfunded in almost every category of budgetary support. Admittedly, factors outside the army’s control, such as the popular revulsion over the slaughter on the Western Front and the political denial of the strategic necessity for a continental commitment, contributed to this state of affairs. Nevertheless, the army generally failed to convey its strategic vision to those in power. Similarly the French Air Force failed in the same period to articulate the importance of its mission to the politicians of the Third Republic. Only in 1938, when the mismatch between French and German air strength had reached catastrophic proportions, was the French Air Force able to influence its government, and then the desperate scramble to make up what the French ‘four years’ had lost occurred too late.

To What Extent Do Military Organizations Have Access to the Industrial and Technological Resources Necessary to Produce the Equipment Needed?

Even with an ample budget, armed services still must convert financial support into equipment. They can do this either by depending upon national industries or by importing arms from abroad. Almost all military organizations need to do some of both, but, as a general rule, more advanced forces generally rely on internal sources of supply. To the degree armed forces acquire their equipment from domestic sources, they must assess their nation’s industrial, technical, and research and developmental capabilities, communicate their requirements, supervise and monitor production of those items, and test the end products. In a market economy they must consider the relationship of investment risk to price. To operate such a system requires technologists capable of dealing with such concerns in the language of business, engineering, and science. Military organizations dependent on foreign suppliers may not need such elaborate arrangements, but they do require an ability to assess products and to enter into intelligent commercial relationships with suppliers. A military organization that cannot or does not exploit either domestic or foreign industrial and scientific communities limits its effectiveness.

In the 1920s and 1930s, despite considerable internal difficulties, the Soviet military was able to make good use of foreign technology as well as its own
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Strategic activity consists of plans specifying time, geography, mission, and objectives and the execution of those plans. Subsumed within the definition are the analysis and selection of strategic objectives and the linkage of those objectives to national goals through the mechanism of campaign or contingency plans. A campaign is a sustained operation designed to defeat enemy forces in a specified space and time with simultaneous and sequential battles. Usually several campaigns are required to achieve strategic objectives. An example would be the decision by US Army Air Forces in 1941 that airpower could be most effectively used in attacks on Germany to destroy its ability and will to make war. Another example would be the decision by American forces in the Pacific to launch an island-hopping campaign in order to bring air and sea power within range of the Japanese home islands.

One must not confuse this military activity with the analysis and designation of national goals by the political leadership. Germany’s total defeat was the primary political goal of the United States in the European theater; bombing Germany industry represented a strategic decision intended to secure that goal. However, political and military decisions at these levels do overlap and are made iteratively; a purely linear conception that political goals always drive strategic decisions is simplistic. Political goals no doubt should inform strategy, but the strategic alternatives, enunciated by the military, may simultaneously shape those goals. The analysis of strategic effectiveness should aim at capturing this reciprocity.

To What Extent Do Military Organizations Have Access to Manpower in the Required Quantity and Quality?

Access to manpower involves not only legal power, but also moral and practical legitimacy. For example, the military may possess the legal right to universal conscription, but coercion alone cannot provide the personnel, if the society, or an elite within it, desires to circumvent the legal structure. The history of various American drafts illustrates that societal resistance or support can influence the effectiveness not only of conscription, but also of combat power. Especially important for military organizations is the willing cooperation and service of the educated and skilled middle and upper classes. Without their participation, military skills, particularly in the officer corps, cannot be maintained at a sufficiently high level of expertise. In addition, the absence from military service of the most politically active and influential segments of society will serve to isolate and alienate the military from the nation they protect. The citizenry will then lose the sense that defense is a legitimate activity. Effectiveness by this measure requires that the nation not stigmatize its armed forces. Furthermore, officerism must be regarded by both the officer corps and civil society at large as a distinct profession incorporating a body of specialized knowledge and a code of self-regulation.

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The strategic level of military activity refers to the employment of national armed forces to secure by force national goals defined by political leadership.
available strategic alternatives. It must then compare these with the benefits of success and the costs of tolerating the status quo. Again, the analysis must emphasize the normative aspect of effectiveness, and it requires a critique of those cultural or psychological impediments to strategic effectiveness in each particular case. To return to the Second World War Pacific case, one can argue reasonably that Japan's assumption that America lacked the will to fight simultaneously on two fronts (Pacific and European) constituted a key element in the Japanese decision for war. The analysis must evaluate this assessment both in terms of what the Japanese knew at the time and what they should and could have been reasonably expected to have known. For example, was it intelligent for the Japanese to base their entire campaign against the United States upon an evaluation of national political will, a type of judgment that has historically proven notoriously unreliable? Did the Japanese impute too much rationality to their adversaries? Was it reasonable to devise a strategic plan that contained the possibility of catastrophic failure, if the predicted enemy behavior proved incorrect? To the extent that the answers are negative, an analysis would judge the Japanese strategically ineffective.

**To What Degree Were the Leaders of the Military Organization Able to Communicate with and Influence the Political Leadership to Seek Militarily Logical National Goals?**

The process of selecting national political goals and strategic objectives should be interactive. Strategic objectives chosen in a political vacuum possess no meaning. Political goals chosen without reference to what is strategically possible are futile at best and disastrous at worst. The military must communicate effectively to political leadership what is militarily possible and thereby influence the choice of national goals. A military that performs this task badly is strategically ineffective. Obviously, such strategic effectiveness requires certain skills within the military leadership, including the ability to persuade with candor when required and to obfuscate when necessary. Practical prowess in bureaucratic maneuvering and coalition building is essential. An interesting example is whether the American military were strategically effective in communicating their limits to the civilian leadership during the Vietnam war. General William C. Westmoreland has argued that he made clear that the level of available American ground forces in Vietnam required the South Vietnamese to take over most pacification tasks. This meant, argues Westmoreland, that progress toward American political objectives in Vietnam would be far slower than with more American troops. On the other hand, Colonel Harry G. Summers, Jr., asserts that the American military failed to inform President Johnson and his advisors about what was and was not militarily possible with the prescribed goals, forces, and rules of engagement. If Westmoreland's view obtains, one would have to rate the strategic effectiveness of the American military more highly than if Summers' assessment prevails.

One must also note that there have been times in the twentieth century when military organizations have shown enormous political effectiveness in persuading the national leadership to accept illogical national goals. Wilhelmine Germany represents the most clear-cut example. From Tirpitz's 'risk fleet' theory to Ludendorff's and Hindenburg's arguments for overambitious strategic and political goals in 1917-18 in both the East and the West, the German military indicated political effectiveness but an effectiveness that resulted in the most catastrophic consequences.

**To What Degree Are Strategic Goals and Courses of Action Consistent With Force Size and Structure?**

Although a military organization may possess limited power over the ultimate fit between strategic decisions and national goals, it usually has more control over the extent to which its force structure is appropriate to its anticipated uses. Accordingly, the military's level of accountability in this area ought to be high. Force size, of course, refers to numbers, force structure to the internal organization and the composition of forces.

The Russo-German war provides significant examples of strategic ineffectiveness arising from a poor relationship between available forces and strategic objectives. Even in 1941 German forces were undoubtedly too small, too ill-equipped, and too badly supported for many of their strategic tasks. Above all they lacked an effective logistics structure to accommodate the distances and weather of the theater. Few infantry formations were mechanized. Strategic planning was careless and often incomplete, and the Germans generally refused to face the problems inherent in conquering a country of continental proportions. Similarly, in 1942 the Luftwaffe's assessment of its size, force structure, and the potential threat was so faulty that its continued emphasis on bomber production and other decisions lost air superiority over the Mediterranean and Eastern fronts by late summer 1943 and over all of Europe by spring 1944.

One can contrast these cases with the American naval forces in the prewar Pacific. Both the navy and the marine corps anticipated the nature of amphibious warfare and the requirement for naval air superiority with considerable accuracy in the 1920s and 30s. While force numbers were still low in the late 1930s, especially in aircraft carriers and amphibious shipping, the force structure of the two organizations was fundamentally sound for the strategic tasks they faced. Therefore, the strategic effectiveness of these two military organizations was high.

**To What Degree Are the Military's Strategic Objectives Consistent with Their Logistical Infrastructure and the National Industrial and Technical Base? Included in the Industrial Base Are Manufacturing Capabilities and Rates, Reserve Capacities, Sophistication, Vulnerability, and Access to Raw Materials.**

Clearly, different strategic objectives require diverse supporting organizations and industrial foundations. For example, Anglo-American strategy in the Second World War faced enormous logistical problems in waging war far
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from the centers of Allied power, in fighting a massive aerial campaign to break German industrial power, and in mounting and supporting great amphibious efforts on coastlines where well-entrenched, highly motivated forces awaited Allied landings. An industrial-technical base that did not possess enormous productive potential and that did not have access to large, secure sources of raw materials would have rendered Anglo-American strategy difficult, if not impossible to implement. Likewise, the Anglo-American strategy that heavily emphasized the air arm required a foundation of continuous technological innovation and the ability to translate those refinements into mass production. In addition, it demanded large numbers of highly skilled support personnel for the large infrastructure of bases, maintenance and repair facilities, transportation systems, and storage-distribution installations. Without those things, a sophisticated and effective strategic air campaign was unthinkable, however well conceived in military terms.

The German case in the Second World War makes an interesting comparison. As a result of their victories in the spring of 1940, the Germans had acquired access to virtually the entire manufacturing capacity of Europe. In terms of available raw materials, the Germans could cover their needs in every area except for petroleum and a narrow band of specialized metals. At the same time, German strategic thought clearly began to turn to the problems involved in realizing the Führer’s grandiose dreams of destroying the Soviet Union and dealing with the United States. Throughout the period between the fall of France and the opening of massive military operations against Russia, German leaders underestimated the capacity of Soviet industry and the massive potential of the United States for industrial mobilization and production. In a limited sense Hitler perceived the dimensions of the problem. In the summer of 1940 he suggested that German industry increase the number of tanks produced from a hundred to a thousand a month. The army’s ordnance authorities persuaded the Führer against implementing that decision with the argument that such a production level would overstrain the German economy. Generally, the German military echoed the sentiments of Göring that American industry could only produce radios and refrigerators, and they shared Hitler’s optimistic belief that when one kicked in the Soviet door the whole regime would collapse like a house of cards. Not until late 1941 or early 1942, with the disaster in Russia and Hitler’s declaration of war on the United States, did the Germans begin to mobilize fully the industrial and technological resources available to them — a year and a half too late and the direct result of the military’s strategic incompetence.

To What Degree Are Military Organizations Successful at Integrating Their Strategic Objectives with Those of Their Allies and/or Persuading Them to Adopt Consistent Strategic Objectives?

Historically — and certainly in this century — coalitions have conducted a significant percentage of wars. Coalition warfare carries with it the problems of deriving full benefit from the partnership through the integration and coordination of individual contributions into a joint effort. The First and

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Second World Wars offer several interesting cases of both effectiveness and ineffectiveness in this strategic dimension.

The relations between the British and French armies during the First World War fall somewhere in the middle of this measure for strategic effectiveness. Initial relations between the British Expeditionary Force (BEF) and its French counterpart were marked in 1914 and 1915 by considerable formality and coldness, if not a general failure of understanding. Matters improved under Field Marshal Sir Douglas Haig, who supported his French colleagues. Nevertheless, there was no combined staff, no centralized planning, and little sharing of operational concepts. The disastrous impact of Germany’s March 1918 offensive finally forced the two allies to create a supreme allied commander who could articulate and guide overall strategy for the allies. In the other hand, the Axis alliance between Germany and Italy possessed virtually none of the characteristics of a serious alliance. Mussolini characterized the Italian effort in 1940 as a parallel war. The failures in coordination, the lack of a grand strategy, and the arrogant disregard of overall alliance strategy culminated in the ill-considered and disastrous Italian invasion of Greece in October 1940. In a real sense the combination of Fascist Italy and Nazi Germany represented an alliance where the whole was less than the sum of its parts. The best example of strategically effective coalition warfare is the behavior of British and American military forces in the Second World War. Consultation and active coordination began early in the war and before American belligerency. Both sides hammered out strategic objectives in a series of conferences at which top political and military leaders and staffs communicated freely. These consultations led to the early creation of combined staffs and eventually combined commands for most deployed forces, at least at the theater level. The two allies often held significantly different views on Allied strategy. Yet they were almost always able to bridge potential divisions so that actual military operations, once decided upon, were neither impaired nor weakened. To the extent that the British and American military organizations were responsible for this integration and cooperation, one must judge them as strategically effective.

To What Degree Do the Strategic Plans and Objectives Place the Strengths of Military Organizations against the Critical Weaknesses of Their Adversary?

Ideally, the best strategic course should aim to place strength against critical weakness. Admittedly, this is not always possible since the strengths and weaknesses of opponents are often not sufficiently complementary or clearly recognized. Therefore, in practice, a strategically effective military organization may have to be satisfied with a strategic course that at least would allow it to exploit fully its own strengths.

Germany’s strategy at the beginning of 1916, cast by Chief of the General Staff Erich von Falkenhayn, reflected a general ineffectiveness in this category. In a strategic memorandum written for the Kaiser in December 1915,
Falkenhayn argued that Germany faced a mighty coalition that possessed enormous numerical advantages in resources, population, and industrial potential. As the war continued, Allied military power would continue to wax while Germany’s power could only wane. England, continued Falkenhayn, was Germany’s principal enemy. The chief of staff then proceeded to argue that Germany should fight a great battle of attrition against the French Army in 1916 as a means of destroying Britain’s most formidable ally on the Continent. Indeed, the German high command insured that the German forces in front of Verdun could not launch a quick, decisive thrust at the French fortress city, but rather possessed only enough strength to embroil both French and German troops in a massive killing battle of attrition — a disastrous commitment of the German Army against the Allies’ greatest strength, mobilized manpower and material.

In the same war, the Royal Navy understood quite well the strategic advantages that accrued to Britain by geography, trade patterns, and the navy’s clear numerical superiority. The distant blockade, while keeping the fleet concentrated and avoiding needless risks, accurately reflected the strategic realities that obtained between the two nations. It forced Germany to take the offensive to break the deadlock by seeking a major fleet engagement. At Jutland, Admiral Jellicoe fully understood that the annihilation of the High Seas Fleet was desirable, but that decisive fleet action was not necessary for accomplishing his primary strategic objective. This understanding explains his often criticized reluctance to press home his advantages on the evening of May 31, 1916. Whatever the operational failings of the Royal Navy, its strategic effectiveness throughout the war was enormous.

Operational Effectiveness

The operational level of military activity refers to the analysis, selection, and development of institutional concepts or doctrines for employing major forces to achieve strategic objectives within a theater of war. Operational military activity involves the analysis, planning, preparation, and conduct of the various facets of a specific campaign. Within the scope of operational matters lie the disposition and marshalling of military units, the selection of theater objectives, the arrangement of logistical support, and the direction of ground, air, and sea forces. A combination of military concerns shape these operational-level decisions: the mission, the nature of the enemy and his probable objectives, terrain, logistics, the available allied and national forces, and the time available for mission accomplishment. An example of activities at the operational level was the choice by US Army Air Forces in the Second World War to use massed, daylight, high-altitude precision bombing raids against industrial targets for the strategic objective of reducing or eliminating the enemy’s ability to wage war. Another is the development and application of the slip-to-slave amphibious assault doctrine as a guide for employing landing forces in the Pacific to bring concentrated air and sea power to bear on Japan. Measures or indicators of operational effectiveness must reflect this doctrinal focus.

To What Extent Do the Military Organizations of a Nation Possess a Professional Ethos and Integrity That Allows Them to Deal with Operational Problems in a Realistic Fashion?

The military organizations of the major powers have in the past century come to view the position of officer’ship as that of a profession, demanding ethical sensibility and considerable intellectual attainments. The staff and war colleges founded in the nineteenth century attest to a growing belief that only serious study could prepare officers for the most senior positions of military leadership. Yet there remains some doubt about how fully all officer corps have accepted this particular attribute of the definition of professionalism. As MacGregor Knox has noted about the Italian military in the past half century:

The Duce’s problems . . . lay in what one might term the Italian general staff tradition: Custozza, Lissa, Adua, Caporetto. On those occasions the military, as yet uncontaminated by contact with fascism, distinguished itself by the lack of the sort of diligent study, careful planning, and scrupulous attention to detail which characterized the Germans, and by a tendency to confusion of responsibilities and of incessant intrigue among senior officers.

The degree to which the officer corps of a nation accepts the concept of professionalism is going to influence its ability to perform its mission in the operational and tactical spheres. Similarly the issue of integrity between the different levels of command represents an important attribute of a serious professional force. Without trust and honesty, information that is critical to the evaluation not only of enemy capabilities, but of one’s own as well, will either become distorted or in some cases entirely false as it moves between levels of command. In this case the exceptional critical self-analysis of the German Army after its victory in Poland especially deserves attention. In spite of a massive victory over its opponents, the army’s high command was dissatisfied by the performance of combat units. Moreover, the German system allowed subordinate commanders full freedom to discuss the weakness of their own forces in terms of equipment, manpower, and training. The result was that the General Staff was able to evaluate the army’s strengths and weaknesses in realistic fashion and to design a realistic training program to correct its defects. Victory over France in May and June of 1940 was due in no small measure to that process.

To What Degree Are the Military Organization’s Operational Methods Integrated? To What Degree Do Organizations Attempt to Combine Combat Arms to Take Full Advantage of Their Strengths While Covering Their Weaknesses?

The history of warfare has been marked by an accelerating growth in the variety of weapons, combat arms, operational transportation, and specialized units. Each weapon, unit, and technique possesses a unique set of capabilities and vulnerabilities. Taking full advantage of these military assets increases the likelihood that an armed force will fulfill its mission. Taken in
aggregate, the operationally effective military organization is one that
derives maximum benefit from its components and assets by linking them
together for mutual support. Not only does this require complete utilization
of combat branches within and between military services, but also the
exploitation of weather, terrain, time, surprise, morale, training, and the
physical capabilities of troops. The greater the integration of these disparate
elements, the better will a military organization generate combat power from
its available resources.

In this area, German military forces in the first several years of the Second
World War exhibited a high level of effectiveness, particularly with regard to
the evolution of operational concepts dealing with armored warfare. German
armored doctrine as developed by its pioneers, generals Lutz and Guderian,
gave heavy emphasis to developing an all-arms approach to armored war-
fare. Consequently, German armored divisions consisted of motorized artillery,
infantry, and combat engineers as well as armored components. With
the addition of Stukas from the Luftwaffe’s specialized Fliegerkorps VIII, the
Germans were able to test and refine an all-arms doctrine of enormous
effectiveness in the campaigns against Poland and France. 36

The Israeli ground forces in the Yom Kippur War provide an interesting
contrast. After the 1967 victory, Israeli operational planners gradually
de-emphasized combined arms in favor of an almost pure armor-aircraft
combatt doctrine. They essentially relegated artillery and infantry to a sec-
ondary status. This decision left Israeli forces vulnerable to weapons against
which artillery and mechanized infantry would have been effective. It was
only after battlefield reverses in the first week of combat in 1973 that they
relearned the basic need for a combined arms doctrine. Ultimately, the
reintegrated Israeli ground forces breached Egyptian air defenses, and this, in
turn, allowed Israeli aircraft to function with their full lethal force. In terms of
integration, the Israelis were at first operationally ineffective, but through
rapid adaptation recovered their high level of effectiveness. 37

Operational effectiveness has a distinct human element. The professional
and personal relationships between officers of different branches within the
same service as well as between different services provide the institutional
and psychological underpinnings for integrated action. The personnel and
training policies of military organizations determine in large part these
relationships. Attendance at a service military academy can provide a com-
mon foundation of trust and experience that may endure between classmates
who have gone into different combat branches. Likewise, personnel policies,
as in the German case, that rotate staff officers through various branches and
assignments between line and staff may have the same effect. The practice of
assigning officers to a regiment for the duration of their career may have a
positive impact on unit cohesion, but it may also create narrow, professional
and psychological perspectives. The result of a parochial personnel policy
may be the creation of officers with an intense “us-them” feeling that discor-
guages their full integration into an all-arms concept. If poorly controlled
by the leadership, the conflicting perspectives held by personnel from dif-
ferent services, amplified by interservice competitiveness, can hamper com-
bined efforts.

To What Extent Are the Military Organizations Mobile and
Flexible at the Operational Level? Can the Organization
Move Rapidly Both Intellectually and Physically in Either
Anticipated or Unanticipated Directions?

Existing technical conditions, of course, limit mobility. At the most obvious
level, mobility means being able to move units in a flexible, timely fashion.
This requires an infrastructure to support them as well as to move them. At a
deeper level, mobility and flexibility depend at least as much, if not more, on
an appropriate command and control network and on staff elements that
permit military units to remain cohesive, distinctive organizations while they
maneuver.

There is in fact no single military organization that provides an example of
both mobility and flexibility in all their implied meanings. The British and
Americans in the Second World War had superb mobility and flexibility
between theaters of war. Within theaters these forces also possessed excellent
mobility. However, it is arguable whether British and American forces
demonstrated the flexibility at the operational level necessary to seize the
fleeting opportunities that their mobility presented. By contrast, German
forces were physically less mobile; much of the army consisted of non-
mechanized units, while force structure and size severely limited Luftwaffe
airlift capabilities. However, the Germans had an unparalleled operational
flexibility that allowed them to react rapidly with their numerically inferior
forces to great effect. German flexibility highlights the importance of com-
mand and control as well as staff work to operational effectiveness. For many
reasons, the use of mission tactics not the least important, German command-
ers and staffs possessed both the desire and the ability to shift, recombine,
and redirect forces as the situation demanded. American and British forces
always possessed the technical and physical ability to do so, for Allied
communications, mechanization, and motorization were far superior to
those possessed by the Germans. However, the Allies seldom showed the
organizational abilities and flexible habits of mind to make full use of those
great resources. In this respect, the Allies were less effective than their
German opponent. 39

To What Extent Are a Military Organization’s Operational
Concepts and Decisions Consistent with Available
Technology?

This measure searches for the relationship between technical innovation and
operational effectiveness, a subject that has endlessly occupied military histo-
rians and analysts. It is still not clear to what extent technology drives
operations or the reverse. What is certain is that each has powerfully influ-
cenced the other and that the exploitation of technology by military organiz-
ations has been of increasing significance. Therefore, an armed service’s
adeptness at identifying, encouraging, and assimilating useful technologies
is an important measure of operational effectiveness. 40

Examples of gross failures to exploit available technology abound in the
nineteenth century; military organizations from the early twentieth century
have become more receptive to technical innovation and their failures in this area have become less dramatic. Perhaps the most famous as well as one of the most effective utilizations of technology came in the 1930s and early 1940s in Great Britain. The head of the RAF’s research and development establishment, Air Vice Marshal Sir Hugh Dowding, played a major role in encouraging the first experimentation with what was to be known as radar. At the same time he was negotiating the original contracts that resulted in two single-engine air superiority fighters, the Hurricane and the Spitfire. Then, under his leadership, Fighter Command incorporated these new technological advances, designed an effective operational air defense system for defending Britain’s air space, and finally, in the Battle of Britain, met the Luftwaffe with the technology and the operational doctrine designed to utilize the RAF’s strengths. The resulting triumph represented a true marriage of technology and operational doctrine.  

There are many reasons why military organizations may reject new weapons. Frequently, insufficient funding by political authorities may not permit the development of new and untested devices. Obviously, the budget is something over which military organizations often exercise incomplete control. Rejection may result from the military leadership’s judgment that a new technology is unreliable or not significantly superior to present equipment and therefore would not enhance fighting power. Paradoxically, the military may recognize a new technology’s merit and still reject it if another technical innovation seems to possess even greater potential. If done often enough, the desire to wait for the ‘best’ weapon can stifle technological improvement of military organizations. An analysis must examine military evaluations of technology for reasonableness and accuracy in the light of existing knowledge. Military organizations may slowly adopt a new technology only if its application is uncertain. The US Navy’s tepid interest in early submarines was in part the result of these considerations. Finally, a new technology that might increase combat power may still be rejected because it threatens either the status of existing organizations or the social environment of a military organization. Such was the case with the tank, the airplane, the aircraft carrier, and the submarine in the armed services of many nations. Since military organizations generally aim to increase their combat power, the rejection of new weapons systems for sociological reasons is a strong indication of operational ineffectiveness.

TO WHAT EXTENT ARE SUPPORTING ACTIVITIES WELL INTEGRATED WITH THE OPERATIONAL CONCEPTS OF THE MILITARY ORGANIZATION?

DO THE MILITARY ORGANIZATIONS HAVE THE CAPABILITY TO SUPPORT THEIR OPERATIONAL PRACTICES WITH THE REQUIRED INTELLIGENCE, SUPPLY, COMMUNICATIONS, MEDICAL, AND TRANSPORTATION SYSTEMS?

The most potent and ingenious operational capabilities are worthless unless a network of supporting activities buttresses them. An example or two can illustrate this point.

The German invasion of the Soviet Union in the summer of 1941 is an interesting case in point. Military historians have rightly given much credit to the awesome operational capabilities of the invading forces. What has not received adequate notice is the fact that the underpinnings of that invading force, from logistical capabilities through to basic intelligence on the Soviet order-of-battle, were completely inadequate. The expansion of the German armored force between the Battle of France and Barbarossa saw a doubling in the number of armored divisions through a halving in the number of tanks in each division. Even more harmful, and rarely noted in the Anglo-American literature, is the fact that the Germans were only able to equip these divisions with a hodgepodge of supporting vehicles drawn from every nation in Europe. Not only were the vehicles generally unsuited for their logistical tasks on the primitive roads of the Soviet Union, but the very multiplicity of supporting vehicles created a logistic nightmare in terms of parts and maintenance. German operational planning had foreseen a rapid drive to Smolensk and a pause to refit as the rail system back to Brest-Litovsk was repaired by railroad engineers. The repair units, however, were given the lowest priority of all army units moving forward into the depths of Russia. It is no wonder then that the army’s logisticians had to warn the high command in October that the supply system could provide either a build-up to meet the coming conditions of winter in Russia or the fuel and ammunition for a drive on Moscow. The army leadership, reflecting its general disdain about logistics, drove on towards Moscow, and the winter catastrophe was a direct result.

If the logistical support for the Wehrmacht’s awesome operational capabilities was inadequate, its intelligence support was even less impressive. From its estimation of Russian equipment to its forecast of what the Soviet Union could mobilize, the Reich’s military intelligence services proved catastrophically wrong. Those miscalculations are best summed up by Halder’s complaint of August 11, 1941:

The whole situation shows more and more clearly that we have underestimated the colossus of Russia – a Russia that had consciously prepared for the coming war with the whole unrestrained power of which a totalitarian state is capable.

This conclusion is shown both on the organizational as well as on the economic levels, in the transportation, and above all, clearly in infantry divisions. We have already identified 360. These divisions are admittedly not armed and equipped in our sense, and when we destroy a dozen, the Russians simply establish another dozen.

It is worth contrasting the German experience in Russia with the Allied (British, Canadian, and American) effort in the Battle of the Atlantic during the Second World War. Not only did that sustained campaign depend on a secure logistical base of immense proportions, but the use of intelligence, especially the deciphering of German messages to their U-boats, was important in winning the battle over German submarines. At least in the last half of 1941, ‘Ultra’ alone was almost solely responsible for blunting the terrible threat posed by the rising numbers and effectiveness of Dönitz’s forces.
That intelligence success may be one of the few times in the twentieth century when intelligence by itself was of decisive importance.

The importance of the integration of intelligence and operational activity is equally clear in another example: aircraft carrier operations in the Pacific. Successful carrier air strikes at other ships depend upon precise and timely intelligence. Given the vastness of the Pacific, inaccurate force direction resulted in failure with no accompanying 'bonus damage,' which often resulted when land bombers missed their original targets. In addition, given aircraft carrier vulnerability, timely intelligence on an adversary's location was of supreme importance. These lessons were replayed many times in the Pacific, and naval intelligence in that theater was an effective part of fleet operations. Diverse information sources (e.g., MAGIC, RDF, coast watchers, submarine pickets, and air patrols) produced data for centralized analysis, which naval intelligence staffs were rapidly able to provide to operating units. The extent of this dissemination, required by the size of the Pacific and the rapid pace of naval warfare, increased the risk of compromise, but resulted in a series of crucial American successes.41

To What Extent Is the Military Organization's Operational Concept Consistent with the Strategic Objectives Assigned to It?

Clearly certain methods of employing military organizations are totally unsuited to particular types of strategic objectives. Yet, an age-old problem is the employment of military forces to achieve objectives for which they are largely unsuited.

In this category the evaluation must look for more than just the problem of whether an organization's operational concepts are consistent with the strategic objectives assigned to it. Given the difficulty in estimating enemy capabilities as well as the doctrinal adaptation that enemy forces go through, the real problem in this area may not emerge in the initial battles of a campaign. Rather, the problem may lie in how well a military organization recognizes the obstacles that the enemy, its own technological capabilities, and its operational weaknesses in combat stand in the way of achieving its strategic goal.

Thus, with the difficulties in training a vast new army and the technological problems (largely unsolved) that accompanied the introduction of rapid-fire, long-range infantry weapons and artillery, it is not hard to see why the British Army had such a difficult time on the Somme.42 Where Haig and his generals on the Western Front are particularly open to criticism, however, is the fact that the same operational concepts that had proved so unrealistic in 1916 were once again employed in Flanders in 1917. The pursuit of largely unrealistic strategic objectives with inadequate operational conceptions led to the blood bath of Passchendaele. Similarly, in the Second World War it is not entirely clear that the first great bomber attack on Schweinfurt was a mistake, given what was known about the overall situation.43 What was inexcusable was that the Eighth Air Force continued to send massive unaccompanied bomber formations into the Reich until the second attack on Schweinfurt underlined in blood the inadequacies of its operational concepts. The strategic objective, the destruction of the German ball bearing industry, remained well beyond reach.

To What Degree Does the Operational Doctrine of Military Organizations Place Their Strengths against Their Adversary’s Weaknesses?

The conduct of Bomber Command’s operations in the Battle of Berlin from December 1943 through March 1944 may best represent operational ineffectiveness in this category. Determined to prove that his command could replicate its successes of summer 1943 on a far heavier and more extensive scale, Air Marshal Arthur T. Harris set as Bomber Command’s strategic goal the complete destruction of Berlin and victory over the Reich before Allied armies landed on the coast of France. Berlin, however, lay far from Bomber Command’s bases and thus required an extended flight that exposed British bombers to the maximum German air defense effort. Moreover, winter weather was so bad that it was doubtful whether Pathfinder crews could find and mark a sufficiently clear object on the ground to achieve the necessary bombing concentrations. The result was that Bomber Command did not place its strengths against German weaknesses. Rather, it placed strength against strength and a terrible battle of attrition culminated in the disastrous raid against Nuremberg in March 1944. Harris came close to wrecking his command without achieving his goals.44

The German campaign against France and the Low Countries in 1940 stands out in strong contrast to the Berlin air campaign. By taking considerable risks, the Germans placed their armored forces where they were most likely to utilize operational maneuverability and flexibility. Because the French high command had placed virtually all its motorized and mechanized forces on the left wing, it did not possess forces in the area that could meet the operational capabilities of German forces. Once the German armored forces had broken out into the open behind the Meuse River, the French did not have the reserves available in the area to react effectively. In this campaign the Germans must be judged effective in pitting strength against weakness.45

Tactical Effectiveness

The tactical level of military activity refers to the specific techniques used by combat units to fight engagements in order to secure operational objectives. Tactical activity involves the movement of forces on the battlefield against the enemy, the provision of destructive fire upon enemy forces or targets, and the arrangement of logistical support directly applicable to engagements. During the Second World War strategic bombing, the non-evasive flying by American heavy bombers, was a tactical activity designed to provide a more stable platform for defensive machine gun fire and more accurate bombing. Likewise, the use of wingmen in fighter combat is a tactical activity; so too are attacks by fighters out of the sun and from a higher
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altitude. The increased reliance by the US Marine Corps on flame throwers and demolitions to deal with Japanese fortifications is another example. The line between the operational and tactical levels is often blurred, and analysts may disagree over the classification of particular military actions. It is important to distinguish tactical practices since they may provide a clearer focus for comparing military organizations of different nationalities in different eras. Some of the characteristics of tactical effectiveness resemble those for operational activity. Others are quite different.

To What Extent Are Military Organizations' Tactical Approaches Consistent with Their Strategic Objectives?
The adoption of particular tactical systems can hamper military organizations in their pursuit of strategic objectives. For example, suppose that American bomber pilots in the Second World War had found that violent evasion greatly increased their chances for survival against flak and enemy interceptors. The effect most likely would have been a significant loss in bombing accuracy with accompanying injury to organizational strategic purposes, although with a lower attrition rate. It is not always clear that disunity between strategic objectives and tactical methods indicates tactical ineffectiveness. Ideally, what is tactically feasible should shape the selection of strategic objectives and plans. Therefore, conflict between strategy and tactics may suggest strategic rather than tactical ineffectiveness.

To What Extent Are Tactical Concepts Consistent with Operational Capabilities?
Here too dysfunctions can occur that pose interesting problems for the evaluation of tactical effectiveness. Consider the case of the French Army in the opening weeks of the First World War. The dubious doctrine of the Du Picq-Grandmaison school constituted French operational doctrine. The tactical system was accordingly based on the infantryman's ability to move rapidly in close order across the artillery and machine gun killing zone to engage the enemy in close combat, preferably with the bayonet. The French saw little need for large numbers of machine guns or heavy artillery, and relied for close support on light, rapid-firing 75-mm cannon. These tactics proved so unsuited to combat realities that French infantry essentially imposted a new tactical system on their military leadership: trench warfare.
The dysfunction between operational concepts and tactical capabilities haunted the First World War armies for the remainder of the conflict. Staffs and generals on the Western Front persisted in thinking of operational movement on a Napoleonic scale. As late as the battle of Passchendaele in 1917, Haig was thinking in terms of a great breakthrough followed by a cavalry pursuit of the beaten enemy. At the same time, Allied commanders frequently neglected the immediate tactical problem of how to get through the killing zone of the enemy's firepower. In the BEF, some argued that the British Army should approach the problem of the Western Front as if it were a siege and thus cut down its operational plans to fit more realistically with

available tactical conceptions. Interestingly, the solution—the use of firepower with flexible maneuver—seems to have come from the front-line soldiers. In 1915 Captain André Laffargue of the French Army saw very clearly the full dimensions of the problem as well as the possible solutions. Unfortunately, it was the Germans who built on Laffargue's tactical conceptions. In 1916 Ludendorff drew not only on the French doctrinal concepts but, for the first time, forced the General Staff to seek out the combat experiences of those in the trenches in order to create realistic combat tactics. Only then were the Germans in a position to bring tactics in line with operational conceptions; the result was the return of maneuver to warfare.

To What Extent Does the Military Organization's Tactical System Emphasize Integration of All Arms?
This measure of tactical effectiveness closely resembles that of its counterpart at the operational level. However, tactical effectiveness requires that the principle of integration and combined arms not be strictly weapons-centered, but rather be applied to all the factors affecting combat power. Besides weapons, these include such things as terrain, training, qualities of the troops, morale, and weather. A tactical system that does not deliberately consider these and other important military variables will cause serious problems.
The examples of Finnish ground forces during the Winter War and the British Army during much of the First World War provide a useful contrast. The Finnish tactical system melded the characteristics of Arctic terrain and weather with the skills, small size, and light equipment of the Finnish Army. Consequently, they were able to engage the Red Army in depth by utilizing ski troops and deep raids to fragment and destroy enemy columns. The Finns avoided set-piece combat situations in which the more ponderous and numerous Soviet forces could utilize their strengths. So long as the battlefield remained fluid, the Finnish tactical system generated considerable fighting power from relatively few resources. The Soviets were not successful until they pinned the Finns in prepared, static defenses.
The tactical system of the British Army during the First World War, on the other hand, was deficient in integration in a variety of ways on both offense and defense. On the attack, the British depended almost entirely on a clumsy integration of artillery and infantry armed with rifles. The British were slow to utilize small unit attacking formations, to use natural cover and concealment, to exploit the forward employment of light machine guns and mortars, and to use adjusted artillery fire. The result of this poorly integrated tactical system was essentially offensive impotence for much of the war. The defensive capabilities of the British Army in the war also suggest interesting issues. In 1914, the integration of artiller and artillery was generally good, although because of a lack of communication systems the artillery often had to support the infantry by remaining within sight. While effective in the defensive battles of 1914, the cooperation proved very costly to Royal Artillery batteries that operated in the open, directly exposed to German counterbattery fire.
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In 1918 the British were fully aware that the Germans were about to strike in the west. Haig’s headquarters, in fact, used captured German manuals and combat experience from the 1917 Flanders battles to draw up an effective scheme of defense in depth that relied on close cooperation between infantry and artillery. Unfortunately, the British found it difficult to implement the new doctrine, and Gough’s Fifth Army, which almost collapsed in March 1918, seems to have done almost nothing to implement the new concepts. The disaster of March 1918 provided a real spur to integrating the army’s capabilities.

To What Extent Do a Military Organization’s Tactical Conceptions Emphasize Surprise and a Rapid Exploitation of Opportunities?

Historically, surprise has been a potent multiplier of combat power. It is difficult to find a military that rejects surprise as an advantageous condition. There are, however, tactical systems with attributes that make surprise difficult to achieve. There are many sorts of surprise. Tactical surprise involves where an attack will take place, the axis of the attack and its exploitation, and the timing and the weight of the attack. Tactical surprise differs from strategic surprise (e.g., the geographical area where an attack will take place) and technical surprise (e.g., the qualities of the weapons being used), both of which may be possible in principle regardless of the tactical system.

The British Army in both world wars provides interesting examples of relative ineffectiveness in tactical surprise and exploitation. Lloyd George’s memoirs contain an entry pertaining to Field Marshal Haig’s unwillingness to pay attention to the element of surprise in the conduct of their operations: ‘Germans accustomed to [Haig’s] heavyfooted movements.’ The massive artillery bombardments of great length and severity only served to disclose to the Germans where the next great British ‘battle of material’ would occur. It enabled them, well before the British infantry attacks began, to redeploy reserves of artillery and other forces to meet the threat. Only after the bloodletting of Passchendaele had exhausted his army for a second time in two years did Haig allow his artillery and tanks to launch a raid, almost entirely based on surprise, against the German position at Cambrai. The subsequent success of British tank and artillery forces suggests what a more enterprising use of surprise might have achieved in 1916 and 1917.

Although different from surprise, rapid exploitation requires similar capabilities and attributes. Effectiveness in this category involves the utilization of a wide variety of opportunities created by the almost random fluidity of mechanized warfare. These opportunities usually appear and disappear suddenly. Therefore, a tactical system that utilizes decentralized decision making, rapid movement, small-unit initiative, and imagination are basic if a military organization is to convert these fleeting advantages into battlefield success. By contrast, tactical systems that stress set-piece battles, rigid schedules for reaching objectives, and tight central control do not create the conditions necessary for timely exploitation.

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In the Second World War the British Army paid more attention to the element of surprise. Certainly Montgomery is justly remembered for his set-piece battles. Nevertheless, even Montgomery attempted to include surprise as a basic element in his plans. ‘Market Garden’ did not fail because of a neglect of surprise as a basic element in warfare. Rather that failure reflected a considerable British unwillingness (with the possible exception of O’Connor’s operations against the Italians) to exploit tactical and operational advantages to the full extent possible. Consequently, the real British blunder in September 1944 came not with ‘Market Garden’ but rather with the unwillingness to exploit fully the capture of Antwerp and the operational and tactical disarray of German military forces streaming back toward the Reich. That British desire for a ‘tidy’ battlefield and the deliberateness of tactical concepts resulted in the loss of unexpected tactical opportunities.

To What Extent Is the Military Organization’s Tactical System Consistent with Its Approach to Morale, Unit Cohesion, and Relations Between Officers, NCOs, and the Enlisted Ranks?

There have been several high-quality studies as well as much historical and anecdotal evidence pointing to the value of close relationships between soldiers within combat units. Though any tactical system requires a military organization to pay attention to these issues, some systems require unusually strong and resilient bonds with military units. Military organizations that neglect this prerequisite of combat power pay a price in terms of tactical effectiveness.

The relative performance of the Egyptian and Israeli armies in the wars of 1948, 1956, and 1967 are cases in point. Obviously there are a number of causes for the striking differences in the social ethos of these armies, but there is strong evidence that in many Egyptian units, the relationship between officers and men reduced cohesion and morale. Apparently, many Egyptian line officers were corrupt and exploited their units in various ways. There was minimal sharing of hardships and risks, front-line troops had little contact with their commanders, and few officers led from the front. Most officers individually and the organization as a whole demonstrated a lack of even minimal sensitivity in such things as leave policy, regular pay, living conditions, and bonds among other unit members. Indeed, officers frequently did not hide their feelings of social superiority from their subordinates. The Egyptians attempted to ameliorate these problems, and their relative successes in 1973 may have been an indicator of progress.

The Italian Army in both world wars presents a picture quite similar to that of the Egyptians. In its early First World War battles against the Austrians, an army quite similar in every fashion, the Italians put up a respectable showing, at least in terms of the casualties that they suffered. When, however, the Italians faced the pressures of combat against the Germans at Caporetto and against Anglo-American and Soviet units in the Second World War, their military structure shattered. While not entirely responsible, the relationship between the Italian officer corps and its men and the
almost complete absence of a professional NCO corps to provide additional unit cohesion played a major role in Italian battlefield ineffectiveness. Italian officers by and large ignored their men, refused to share front-line hardships, and generally led from the rear. The result was an almost complete lack of trust. The Italian case may well suggest a paradigm for Third World military forces: certainly the performance of the Argentinian ground forces in the Falklands suggests a similar lack of cohesion between different levels within units, with the same result. To the extent that military organizations are responsible for these shortcomings, they risk tactical ineffectiveness.

There are some tactical systems that require an especially high level of trust between officers and men if they are to function. Any tactical approach that stresses initiative, independent action, day and night operations out of contact with headquarters or flanking units, and rapid movement depends upon front-line leadership and an uncommon level of unit cohesion. To develop these characteristics, military organizations must pursue deliberate policies. These include stable unit affiliations and small-unit memberships, timely and accurate recognition of skills and actions by promotion and awards, and an officer and NCO corps constituted from men with outstanding martial and intellectual qualities, particularly moral and physical courage.

**TO WHAT EXTENT IS THE MILITARY ORGANIZATION'S APPROACH TO TRAINING CONSISTENT WITH ITS TACTICAL SYSTEM?**

It is possible for a military organization to fail to train its personnel to perform the tasks prescribed by its tactical system. When this occurs, tactical effectiveness obviously will be reduced. This sort of disjunction can appear when tactical doctrine and training are managed by different, semi-autonomous bureaucracies with little intercommunication or when tactical doctrine has been changed suddenly and training has not yet adjusted.

The separation of training and doctrine is a common problem for military organizations. The German Army’s response to its victory over the Poles in 1939 suggests a high level of effectiveness in this category as well as the importance of this index to battlefield performance. The Oberkommando des Heeres (OKH) took a close look at how well its doctrinal concepts had held up under the combat conditions of the Polish campaign. It then made an across-the-board effort to insure that training and retraining programs throughout the army reflected the lessons learned from Poland. In fact, OKH spent the next six months insuring that the training program, closely integrated with its doctrinal conceptions, brought the army up to a high level of capability. It is also worth noting that the actual training programs in the German Army, including basic training, remained largely decentralized, with the division and regiments maintaining training cadres, both at home and, in some cases, close to the front to integrate soldiers directly into combat units. The system was probably not cost effective in terms of the number of front-line officers and NCOs detailed to training duties at any given time, but it did insure that German soldiers trained in a realistic environment that not only reflected current doctrinal practices but front-line conditions as well.

The US Army’s efforts to train newly arriving soldiers in Vietnam through specialized in-country centers served a similar purpose. While those combat divisions had little control over the nature of the training that replacements received in the United States, they tried to prepare the soldier for the realities of combat in Vietnam and current divisional combat practices. The training reduced the casualties usually suffered by ‘green’ troops with little knowledge of conditions in the front-line, at least in comparison to Second World War standards.

The British example in North Africa presents an interesting contrast to the German and US cases. In 1940 the performance of British armored forces trained by Hothart and led by O’Connor suggests a high concurrence between a realistic doctrine and effective training. Thereafter, serious problems arose. The British do not seem to have developed a mechanism for transferring combat experience gained in the desert back to the training establishment in Britain. Consequently, the troopers that arrived in the desert theater from the British Isles varied widely in their doctrinal concepts and the effectiveness with which their training had prepared them for combat against Rommel. Only with Montgomery’s arrival was a more consistent doctrinal approach articulated and then incorporated into training the Eighth Army. The consequent improvement in British battlefield performance was directly attributable to Montgomery’s efforts in this area.

**TO WHAT EXTENT ARE MILITARY ORGANIZATIONS’ TACTICAL SYSTEMS CONSISTENT WITH SUPPORT CAPABILITIES?**

It is not uncommon for a tactical system to require greater support than a military organization can actually provide. This problem is frequently most acute in the area of sustainability. Characteristically, military organizations underestimate requirements for transport fuels, ammunition, spare parts, and support personnel. A related problem is the tendency to underestimate the demands that a tactical system may place on troops, e.g., sustained periods of combat, the amount of time without rest, and the impact of casualties. The result of such errors is usually an inability to maintain combat operations at the tempo required by the tactical system. Therefore, military organizations that exhibit this problem would be considered less tactically effective than those whose tactical systems or support capabilities were more realistic.

The archetypal case is the October War of 1973. All the contestants underestimated the logistical requirements for tactical systems incorporating large numbers of automatic weapons, precision-guided munitions, and tanks. Within a short period, the Israelis had to ration ammunition and antitank missiles, a condition not alleviated until a massive American airlift of material had begun.

**TO WHAT EXTENT DO TACTICAL SYSTEMS PLACE THE STRENGTHS OF MILITARY ORGANIZATIONS AGAINST THEIR ADVERSARY’S WEAKNESSES?**

Strengths and weaknesses refer to the range of weapons and human characteristics that affect combat power. For example, an armed force based
on a large national population and a backward industrial base would obviously be in error if it adopted tactical systems that required small forces equipped with sophisticated weapons. Faced with a similar mixture of strengths and weaknesses, the People's Republic of China has employed a tactical system emphasizing a lightly armed mass army trained to meet an invasion with protracted territory defense. Only nuclear weapons vitiated the concept and then only to the extent that the PRC needs to retain its cities. The armed forces of a society whose population is small and/or that values the individual as much as the common good would logically avoid tactical systems likely to produce high casualties.

Ideally, a military organization should seek tactical systems designed not only to use national strengths, but also to put those strengths against the crucial weaknesses of its likely adversaries. The Israeli case illustrates this point. The Israeli tactical system attempts to minimize casualties and to utilize its national technical base and highly educated population to confront Arab forces with combat situations in which the Israelis can exploit Arab weaknesses, e.g., situations requiring improvisation, rapid decision making, and independent action by small units. The Arabs' inability to deal effectively with such problems is a function of larger social and national characteristics that are difficult to change, especially in combat. On the other hand, Arab military organizations have attempted a tactical response that exploits their larger populations by enmeshing the Israelis in battlefield conditions resulting in high levels of attrition and minimizing their personnel and technical superiority.62

The extent to which military organizations place their tactical strengths against enemy weaknesses—or at least maximize their strengths and minimize their own weaknesses—is one measure of tactical effectiveness.

Conclusion

A common thread unites the measures of military effectiveness proposed in this chapter. They all describe various aspects of effectiveness, not as absolutes but in terms of different means-end relationships. However, the attempt to address the question, "What is military effectiveness and how can it be measured?" poses a new and equally important question: "What kinds of military effectiveness are most important and in what conditions?" For example, to what extent can tactical or operational effectiveness offset strategic ineffectiveness? While the concept of military effectiveness is not often clearly articulated, many combat officers believe it is synonymous with tactical effectiveness. They rightly argue that strategic effectiveness is useless unless a military force can operate successfully on the battlefield once it has made contact with the enemy.

On the other hand, the German experience in the Second World War suggests other conclusions. The Wehrmacht was a superb tactical instrument. Yet it was frequently launched in strategic and operational directions that nullified numerous battlefield successes. This pattern occurred repeatedly in the first two years of the Russian campaign, 1941 and 1942. Under some conditions, strategic ineffectiveness can render tactical effectiveness less relevant or counterproductive; under other conditions, the reverse is true. The key task is to determine what these conditions are and when they are likely to occur.

Similarly, within the strategic, operational, and tactical categories, what types of effectiveness are most important and in what conditions? For example, what contributes most to overall tactical effectiveness—technological sophistication or unit cohesion? Obviously both are crucial, but which counts for more and under what circumstances? There is a growing sense based on the experience of the Vietnam war, the Falklands campaign, and the wars in the Middle East that unit cohesion may be the key to tactical effectiveness. On the other hand, no amount of unit cohesion can outweigh an extreme disparity in technical sophistication, as the Zulus learned in the 1870s.

Similarly, what contributes more to operational effectiveness, mobility or integration? During much of the campaign in North Africa, air power and superiority in supplies of vehicles and gasoline gave the British forces greater overall mobility than their opponent. The Germans, on the other hand, integrated their forces, especially armor and artillery, into a potent anti-tank defense, offset the British advantages in material, defeated poorly integrated British armored attacks, and then exploited their advantage into significant operational successes.

In any event, one cannot limit the judging of military effectiveness to non-dynamic assessments of tactical units. One must include in the analysis non-quantifiable organizational attitudes, behaviors, and relationships that span a military organization's full activities at the political, strategic, operational, and tactical levels. A more limited method of assessment only provides equally limited conclusions.

Notes

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8 Ibid., pp. 24-5.


17 Boong, et al., *Das Deutsche Reich und der Zweite Weltkrieg, Vol. 1.*


19 Murray, *Luftwaffe*, p. 82.


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26 Bernard MacGregor Knox (1976), *1940: Italy's 'Parallel War',' Ph.D. dissertation, Yale University, p. 27.


34 Horst Boog, *Das Deutsche Reich und der Zweite Weltkrieg, Vol. 4, pp. 186-7.*


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44. For the best accounts of the 1940 campaign, see Telford Taylor, The March of Conquest (New York, 1958); Alistair Horne, To Lose a Battle, France 1940 (London, 1969); and Hans-Adolf Jacobsen, Fall Gelb, Der Kampf um den deutschen Operationsplan zur Westoffensive 1940 (Wiesbaden, 1957).


46. For a description of the gulf between strategic arms and operational capabilities, see Leon Wolff, In Flanders Fields: The 1917 Campaign (New York, 1963), pp. 103–29.

47. Bidwell and Graham, Firepower, p. 71.


54. Murray, Luftwaffe, pp. 274–76.


57. See Knox, Mussolini Unleashed, pp. 25–30.


59. Murray, 'German Response to Victory in Poland.'


Military Effectiveness in the First World War

PAUL KENNEDY
Yale University

It will be clear by this stage that the First World War was not a conflict which, in the annals of history, is synonymous with military effectiveness. On the contrary, it has offered abundant evidence for a whole host of studies of military incompetence, whether in its psychological, tactical, or institutional aspects. It bequeathed to posterity the searing image of millions of men engaged for years in a futile struggle through the mud to achieve negligible gains at immense cost. It discredited the professional military almost everywhere, and the admirals fared little better. Within a short while after the 1919 settlement it was widely asserted that there had been no real winners; everyone had lost. Versailles had been a 'Carthaginian peace,' ultimately as dissatisfying to the victors as to the defeated. It has, understandably, been hard to get enthused about the military aspects of a conflict which, some seventy years later, is still being described as 'the great seminal catastrophe of the century.' Since the legend of the years 1914-18 is of near-universal ineffectiveness, what possible lessons could be drawn from it - apart from the 1920s conclusion that such a war should be avoided in the future at all costs?

Yet as soon as that question about 'lessons' is posed, of course, the importance of the First World War for the study of military effectiveness becomes obvious. Because it was the first, all-out, mass industrialized coalition war of this century, it tested effectiveness at all levels - political, strategic, operational, and tactical - and usually found things wanting. For four years, many of the most talented and resourceful individuals on each side struggled to make their systems more effective, from the realm of grand strategy and civil-military relations to that of small-group tactics on the battlefield. Slowly, painstakingly, solutions to some of the problems began to emerge, the pace of improvements being very much affected by each belligerent's strengths and weaknesses in this sort of war. Yet, as the preceding chapters have shown, advances at one level of effectiveness could all too easily be vitiated by continuing failures at another: tactical incompetence...
could have repercussions upon strategy and politics; inadequacies of supply (e.g., shells) could severely affect operational outcomes; civil-military tensions could lead to one campaign gaining preference over another. Until one of the coalitions had a distinct superiority at all levels of military effectiveness, it was not possible to overcome the stalemate which was the First World War.

The fact that individual powers evidently found it more difficult (or easier) to achieve effectiveness at one level rather than another is itself good reason for further investigation; for such differentiation not only suggests important points for later analysts seeking to understand military effectiveness as a whole, but also gives strategic and political historians useful insights into the institutions and national proclivities of the individual belligerent states. To take perhaps the most obvious example: why were the British usually much more effective in handling the strategic, political, and diplomatic challenges thrown up by the war than in grappling with its tactical problems, whereas in the German case the opposite seems to have been true? Since it was precisely those imbalances in the different levels of military effectiveness which repeat themselves in the Second World War, a careful comparative scrutiny of such a problem (and others which have become evident) may permit useful conclusions to be drawn about the strong and weak elements in each country's respective military systems.

With that in mind, the comments which follow are intended to point toward some of the more general conclusions which may be drawn from the chapters above, rather than to offer a factually inclusive summary which allocates equal space to the performances of each of the seven powers. While there are also obvious practical reasons for such a decision, the chief motive is to allow attention to be concentrated upon what turned out to be the key issues of military effectiveness in the First World War. For the same reasons, no space will be allocated to providing general background remarks (for example, on the prewar mentality of the offensive, or on the fire power revolution of the late nineteenth century), since they will have already emerged from a reading of the preceding chapters.

Although the arrangement of those chapters has moved from the general conduct of the war to the particular handling of small-scale encounters on the battlefield—in other words, from the political and strategic levels of military effectiveness down to the operational and tactical—there is a strong case for reversing that order when it comes to summarizing the First World War experience as a whole. For it seems worth claiming that it was at the tactical level in this war (much more than in the 1939–45 conflict) that the critical problems occurred. The argument, very crudely, would run as follows: because soldiers simply could not break through a trench system, their generals' plans for campaign successes were stalemated on each side; these operational failures in turn impacted upon the strategic debate at the highest level, and thus upon the strategic options being considered by national policy makers; and these, pari passu, affected the consideration of ends versus means at the political level, the changing nature of civil-military relations, and the allocation of national resources. In a roughly similar (if less widespread way), the inability of the admirals to find an effective way of dealing with the new tactical circumstances facing big ships at sea, or with the challenge posed by the U-boats to merchant shipping, had repercussions upon operational possibilities, strategic options, and political priorities.

This is not to say there were no exceptions to the above pattern. Many of the campaigns fought on the Eastern Front, in Serbia, in Mesopotamia, and in Palestine were not checked by tactical paralysis and did therefore lead to important strategic and political results. Stalemate in the trenches did not impact upon American civil-military relations or strategic priorities. The results of the battle of the Falklands were clear-cut enough, at all levels, even while those of Jutland were not. Nor was it the tactical level which always dictated events: the German Army's tactics in March–June 1918 were fine, but they were vitiated by strategic uncertainty at the top; the Zeebrugge Raid was tactically and operationally stunning, but of little strategic consequence. Yet as soon as one begins to list such exceptions, the larger point reemerges. The Falklands battle was decisive precisely because it was the last one fought between surface fleets by gunfire alone and without the cramping tactical effects induced by the mine, torpedo, submarine, and aircraft. The campaigning in eastern Europe and in the Near East could see spectacular breakthroughs occurring from time to time because the sheer distances involved had prevented the creation of a consolidated trench line and altered the critical balance between fire power and mobility. Moreover, the Americans did not suffer from the consequences of tactical stalemate because they were not in the war long enough and, by the time that Pershing's force was engaged, that stalemate was at last being overcome by the armies of both sides. For more than three years of the fighting, however, the major combatants had generally been frustrated by their armed forces' ineffectiveness, which appeared all the more galling in the light of the prewar forecasts of a swift victory.

To a very large degree, in other words, it was impossible for the powers to achieve military effectiveness in the First World War without first finding a solution to a small but vital number of tactical problems: how to close with, and then overwhelm, the enemy's battlelines; how to counter the attacks of the U-boats; how to open up a new strategic flank through amphibious operations; and—by far the most important of all—how to break into, and then out of, an enemy-held trench system.

Some of these problems need only be mentioned in passing here, since following early failures, they were held to be so intractable that further attempts to solve them were abandoned—and not taken up again until the Second World War itself. Thus, the possibilities of opening up a new flank by an amphibious landing on the enemy's shore were discarded, following the Gallipoli debacle, so far as Britain was concerned; and that country was, in theory, the power to which peripheral operations should have come most naturally. For France, too, the inability of the Allied expeditionary forces to achieve a break-out from Salonika doomed any further amphibious ventures. Taking their cue, the Italian General Staff opposed all suggestions of a cross-Adriatic invasion after 1915, pointing to the tactical and operational difficulties. In the Baltic, the Germans did at least carry out the operations to the Åland Islands and Finland in 1918, but overall very little was done compared
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with, say, the repeated invasions from the sea which had occurred in the Great Northern War. Apart from the Zeebrugge Raid, the North Sea was even more of a 'dead' area for amphibious operations. One reason for this neglect was the overwhelming distaste expressed by all the general staffs for committing their troops to watery ventures. A second, but associated, reason was the growing awareness that land power's mobility (railways) and punch (coastal defense guns, offshore minefields, machine guns) had reduced the advantages enjoyed by sea power; tactically and operationally, getting an army landed onto an enemy-held coast was now altogether more difficult than it had been in Nelson's day.

A third reason was the general difficulty which surface warships, and therefore battlecruisers, had in the presence of the newer weapons of the mine, torpedo, and submarine. For over three hundred years, the big-gunned ship had, tactically (and therefore operationally and strategically) dominated naval warfare; yet in the 1914-18 conflict admirals became wary of taking their massive Dreadnoughts into the North Sea or Adriatic out of a fear of being hit by torpedoes or mines. Because the surface naval war had become paralyzed (except for some exciting small-boat actions), the idea of carrying an invasion force across such dangerous waters was also excluded. Instead of trying to work out how to solve these practical difficulties, naval staffs everywhere tended to bemoan— but accept— such new, cramping conditions. As compared with the Second World War, therefore, surface actions and amphibious operations after 1915-16 were like the Sherlock Holmes story of the dog which should have barked in the night; the fact that it didn't happen is the most interesting aspect of all. And that it didn't happen, because of unsolved tactical and operational difficulties, precluded a whole number of strategic possibilities which were only opened again after 1940.

On the other hand, what turned out to be the two most important tactical challenges of the war, that is, the containment of the U-boats and the penetration of an enemy-held trench system, were solved, albeit slowly and at great cost. Doenitz's description of the tactical difficulties suddenly facing a U-boat commander when the Allied decision to convoy merchantmen was introduced can hardly be bettered: even to get close to the enemy's ships, the submarine had to expose itself to all manner of possible counterattacks. Since the convoys and their escorts now had the tactical advantages in the event of any encounter, the overall operation of bringing thirty or forty merchantmen across the Atlantic or through the Mediterranean was also successful; and thus the Allied strategy of preserving control of the sea was upheld. It is even more instructive why that change took so long in coming: because it was mentally difficult for senior naval officers, brought up in the traditions of the big-gun battlecruiser, to grapple with the unanticipated forms of warfare and newer weapons systems; because there was little operational analysis, or 'feedback,' from those engaged in anti-submarine warfare (or from submariners); and because it was difficult for innovative junior officers, or even pushy politicians like Lloyd George, to influence the admirals. Lacking an adequate staff system with an independent bent towards problem solving and in close contact with the practical realities at the 'cutting edge' of war, the navies of the Great Powers were poorly equipped to defeat the U-boat challenge. As in so many other instances, the acid test of military effectiveness was whether one could handle not the unexpected but the unexpected elements thrown up in war.

In such respects, the U-boat case offers many parallels to the problems which army commanders faced as they grappled with the unexpected tactical landscape of trench warfare after 1914. With the wisdom of retrospect, one can see that this conflict took place at a very particular period in the history of military technology and transport. In the first place, it occurred when the Industrial Revolution, through the railway system, had given armies the capacity to bring masses of men, guns, and shells to the rear of the battlefield, but had not yet discovered the means (e.g., trucks and transport aircraft) to convey those items forward. If anything, the use of millions of horses to carry munitions where the railways ceased to operate simply compounded this problem, since their fodder needs were so enormous. Secondly, it occurred at a time when those same quick-firing guns whose demand for shells drastically complicated logistics also made it impossible for infantry and cavalry to survive on top of the ground in the face of the vastly enhanced fire power, and before the internal-combustion engine solved that problem as well, through the development of tanks and armored personnel carriers. The firepower revolution meant that troops had to dig deep to survive; the transport conundrum meant that the more that defensive trench systems could be built up on an elaborate and massive scale (in western Europe and northern Italy), the more difficult it was to penetrate them. If one attempted to punch a hole through the first line by prolonged bombardments, one surrendered the element of surprise and allowed the enemy to reinforce the second and third lines of trenches. Any advance took the troops farther and farther away from their logistical supplies and rear command; fatigue merely compounded the problem. Whenever side moved forward with due immediately at a disadvantage. This was recognized to the extent that the experts called for the attacker to have a numerical superiority of, say, three to one; but in many ways that added to the interacting problems of supply and mobility. What was needed was not a change of ratios, but a rethinking of battlefield tactics.

In terms of drawing tactical lessons from the conduct of this war, therefore, the most interesting campaigns may be neither the wide-ranging strikes of Allenby and Liddett-Vorbeck, nor the stalemated horrors of Gallipoli, Verdun, the Somme, and the Isonzo; but rather those of the Brusilov offensive, Riga, Cambrai, Caporetto, and the March-August 1918 struggle along the Western Front, since all of those gave evidence that at last the military staffs on each side were beginning to overcome the tactical paralysis of trench warfare and, in consequence, to open up once again both operational and strategic possibilities.

By no means, however, were these changes of approach uniform, even if they all had their roots in the battlefield experiences of certain officers who were actively seeking to overcome the stalemate. Although it was probably Captain Lafargue who was the first to argue for the more flexible use of small units of infantrymen and for much less reliance upon lengthy, mass bombardments, these ideas were never adopted as doctrine by the French Army, many elements of which remained attached to linear advances and (after
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1917, to reduce casualties) a heavy weight of shell. As Professor Porch argues, "initiative, mobility, and surprise were absent from French training methods," and much the same appears to have been true of the Italian Army until the very last months of the war; yet, without those qualities, it was impossible to imitate the fast-moving storm trooper tactics. By contrast, Brusilov and his staff seem to have been very successful in bringing together all the necessary ingredients - sharp, surprise bombardments at many places on the front, swift overrunning of the defender's lines, good coordination at all levels, and a commitment to keeping up the pressure - when they overwhelmed the Austro-Hungarian Army in September 1916. The real problems for the Russian military (apart from the overtraining of the society and economy in general) were: could Brusilov-like methods be adopted by the army as a whole, and, more important still, would they work so well against the formidable Germans, who were not only moving towards a loosening-up of their own offensive tactics but were also vastly improving their defensive battlefield techniques? By the end of that same year, the answer to those questions were becoming all too clear.

The British and German military organizations dealt with the newer tactical possibilities in very different ways. On the face of it, one might have thought that the former would have been the most advanced and enthusiastic in the search for improved battlefield tactics. They complained the loudest about the slaughter in the trenches. Their army had a lengthy 'small wars' tradition which emphasized mobility. They had produced, by late 1917, both an array of intelligent officers who were emphasizing flexible, small-unit attacks, and a sophisticated artillery support system. Under the urgings of Churchill and others, they were farthest ahead in the production of tanks - a revolutionary solution to the fire-power mobility problem, provided (as always) it was used in the proper way. Yet while improvements occurred at the divisional and regimental level, in a piecemeal fashion, the generally unimaginative and inflexible tone of the senior officer corps under Haig, plus the lack of adequate 'feedback loops' between front-line experiences and the staff at the rear, prevented the broad dissemination of the newer tactical doctrines. This is in glaring contrast to the Prussian General Staff under Ludendorff. Even if it is difficult to believe that the dissemination and discussion of new tactical ideas proceeded all the time as smoothly as has been portrayed in Luper's account, it is nonetheless clear that this was a system which was both much more open to advice from below, and much more capable of inculcating newer methods throughout the military organization as a whole. It remains to this day, therefore, an important example of how to get an army to change its battlefield techniques.

Most of the other elements in the measurement of tactical effectiveness flowed from, or sometimes necessarily preceded, this alteration in fighting habits. Intensive training, it has already been noted, was needed to accompany the newer methods; the latter also required a much less hierarchical set of relationships between officers, NCOs, and rankers, and an emphasis upon unit cohesion and mutual support. Not surprisingly, the Stosstruppen methods worked best among elite troops (like the Italian Arditi) or with forces whose social backgrounds did not cramp individualism (like the formidable Australian Corps); even the Germans, who threw great efforts into training the newer methods, only managed to inculcate them into a select number of divisions by March 1918. All-arms integration, which obviously also required intensive training and tactical flexibility, was still chiefly related to an improved coordination of infantry and artillery, superior to the linear assaults of 1916; and there are only rare instances - the French offensive in Champagne in July 1918, or the British 'push' of August 8th, 1918 - in which infantry, artillery, tanks, and aircraft worked together. It was also scarcely surprising that those late examples of all-arms warfare fascinated the post-1919 students of battlefield tactics and stimulated the early Blitzkrieg-style theories of Fuller and Liddell Hart.

This change in the tactical nature of warfare clearly had an important impact upon 'morale.' Given the very high level of conscious and subconscious patriotic indoctrination in all of the combatant societies prior to 1914, it would require repeated evidence of the horrors and futility of warfare to cause disintegration. By that measure, it is easy to see why the US forces seemed so confident and strong when they first appeared on the Western Front; much less easy to understand why the Italians could be sent forward repeatedly into the Isonzo battles, and why the French could not recover from the 1917 mutinies; and remarkable that the Russian Army did not disintegrate until 1917, and that the heterogeneous Habsburg Army fought until the bitter end. Loyalty, discipline, and fear of disgrace together provided an effective cement; local and regional ties and decent living conditions also helped. All that said, it seems clear also from the preceding chapters that high morale was much more likely to be achieved in small, specialized units and in all services where a sense of purpose and the rationality of fighting were preserved. Where an attack seemed evidently futile and suicidal, like Nivelle's offensive or the High Seas Fleet's intended operation of October 1918, unrest and deflation occurred; where troops and sailors saw they had a chance of survival, and perhaps a victory, they always went forward. Such conclusions are not at all new; but they need to be re-learned in every war.

Operational effectiveness during the First World War was caught in a two-edged vice: on the one hand, potential operations were often constrained by considerations of policy, strategy, and geography; on the other, actual operations were all too frequently hampered, and undermined, by the tactical and technical problems mentioned earlier. One can think of literally dozens of successful operations in the Second World War which were both strategically relevant and tactically impressive. For the 1914-18 conflict, one scratches one's head to make up even a short list - the Falklands (perhaps), Tannenberg/Masurian Lakes, Lemberg, the German overrunning of Rumania in 1916, Caporetto (perhaps), Allenby's drive toward Jerusalem, and the combined Allied offensives of July-September 1918 on the Western Front. All of the other operations left something to be desired; many were unmitigated disasters.

The naval war was, operationally, anything other than a 'Great War at Sea.' For the reasons given above. Geography had boxed in the German and Austro-Hungarian surface fleets, and allowed the Allies to retain command of the sea merely by staying on the strategic defensive. In view of their
inferiority in battleship numbers, it would have been rash for the Central Powers to commit themselves to offensive naval operations. This mutual inertia was reinforced by the admirals’ fear of the mine, torpedo, and submarine – probably much exaggerated, if one recalls the important battleship actions in the later war (Narvik, Matapan, Bismark Chase, North Cape) despite the great advances in submarine and aircraft technology. Policy and diplomacy were also important constraints. The Italians wanted to preserve their fleet intact as a bargaining chip at the end of the war (little wonder, then, that they had no operational doctrine!), and the same calculation prevailed in Paris and Vienna. For the Kaiser and his admirals, it was also politically important not to let the High Seas Fleet be eliminated.

All this restricted main-fleet operations to a few chance encounters, such as the Dogger Bank and Jutland. Those clashes, like the land battles, suggested that operational expertise had not caught up with the new technology. Internal-combustion engines could drive opposing battle fleets toward (and away from) each other at a combined speed of nearly 50 knots, yet the admirals did not possess the ‘command and control’ technology to handle their own disparate squadrons, let alone follow the enemy’s motives. Unlike trench warfare, however, there was little opportunity to test operational improvements among the battle fleets; and the focus of the naval struggle shifted increasingly toward the U-boat campaign against merchant shipping.

Yet that was of its nature a very decentralized form of warfare, so that the operational success hinged upon each side’s tactical habits; when the Allies adopted the convoy, the U-boats’ operational chances declined dramatically. Far from having the desired strategic effect of bringing Britain and France to their knees, the actions of the German submarines were the major factor in provoking the United States to enter the war, thereby sealing the Reich’s fate.

Combined-service operations in this conflict were also caught in this vise, and thus conspicuous by their absence. Strategy and geography made them seem a distraction to most of the powers, engaged as they were in a land-based ‘struggle of mastery in Europe.’ Policy – in particular, the lack of cooperation (and, in most cases, sympathy) between the army and navy staffs – was a further constraint. Indeed, the one great Allied attempt at combined operations, Gallipoli, failed to overcome the many technical problems which such a complicated action would throw up, and thus became a glaring example of how not to conduct that sort of campaign.

Far from being unique, Gallipoli was but one of a number of operations conducted away from the standard European theaters – Kut, Tanga, and Salonika were others – which failed because too little account was taken of the necessary underpinnings for such long-distance strikes: intelligence, supply, communications, medical services, and so on. If any real lesson emerges from these campaigns, it is that what we might nowadays term ‘out-of-area operations’ were not cheap. Because such actions might involve an advance across hundreds of miles (compared with the hard-won 5 miles on the Western Front), good mobility and logistics were of the essence; but that in turn demanded a massive infrastructural investment – light railways, new roads, river steamers, telegraph, and hundreds of thousands of mules and camels to transport men, munitions, tents, and field hospitals. At the end of the day, such operations were successful, and the careful planning which attended them paid off: the Russians blasted their way through the Caucasus; the British entered Baghdad, Jerusalem, and Damascus; German East Africa did eventually fall – but all at a cost. ‘Sidewhows,’ in other words, made their own operational demands, which armies neglected at their peril.

Nevertheless, the fact remains that it was much harder to achieve operational effectiveness across the trench lines of the Western Front, northern Italy, and (in some places) the Eastern Front, than anywhere else. Here circumstances restricted the chances for a successful operation in the most devastating way. For the tactical and technical reasons given above, one side began to lose its advantage as soon as it commenced an offensive against the other. The sheer difficulty of forcing a hole through an enemy trench system 4 miles wide (and to do it in time to reach the other side before reinforcements were brought up) was such that all of the normally expected indicators of operational success could give no guarantee of victory. An army – say, Haig’s before the Somme, or Falkenhayn’s at Verdun – could possess enormous stocks of guns and ammunition, command dozens of fresh divisions, have good morale, supply transportation, and so on, and yet to no avail. Operation after operation was therefore closed down, following appalling casualties, with the front line changed by little more than a mile or two.

Even the more mobile and spectacular campaigns in the European theater eventually failed or ended in disaster, because the technical problems proved insuperable. The fate of the Schlieffen Plan in August-September 1914 was an early example of that; for, as Professor Herwig shows, the faster that the leading German divisions moved, the farther they drew away from their supplies, and the more the advantage tilted toward the French. This sequence of events was repeated in March-June 1918, by which time, interestingly, the German Army had solved the tactical problem of how to break through an enemy trench system, but it then fell victim to Ludendorff’s lack of strategic purpose, not to mention operational ‘overstretch.’ Exactly the same happened following those two other large-scale breakthroughs, the Brusilov offensive and Caporetto. Each, by using the elements of surprise, combined arms, and tactical flexibility, not only cleared a way through the enemy’s trenches but then also advanced 20, 30, or even 40 miles beyond, driving the defenders back in confusion. Neither attacking army, however, had been properly prepared for a follow-up. The farther they advanced, the more they strained their supply systems. Plundering consumed the troops’ energies. As the defending forces fell back, their lines shortened; and Allied reinforcements appeared. In fact, no European theater operation of the First World War – save perhaps the German counteroffensive campaigns of Tannenberg, the Polish salient (1915), and Rumania (1916) – saw the successful army fully achieving its aim before being bogged down along a new front line, which in turn needed to be built up; and even those three successes were actions intended to stabilize the front, not operations planned to bring a larger victory.

Since military operations did not normally lead to a decisive change in the battle lines, it was perhaps not surprising that various commanders began to
redefine their strategic aim: instead of going for an unattainable breakthrough, they would aim instead at attrition, wearing down the enemy's forces until the magic moments arrived when they buckled under. This was, notoriously, Falkenhayn's intention at Verdun, and had been Joffre's in the previous year; it was increasingly the raison d'être behind the many battles of the Isonzo; and by 1916 British generals like Rawlinson had also come to see it as the only plausible strategic justification for what they were doing on the Western Front. However, this change brought fresh problems, which in turn could erode the prospects of biting off a chunk of enemy-held territory at a time. The first of these was the obvious effect upon soldiers' morale if they gained the impression that forthcoming attacks were merely part of an attrition strategy and not the 'big push' to end the war - witness here the unprintable Australian reactions to Haig's euphemisms about making 'methodological progress' in the Somme battles. The second problem with this situational form of warfare was that even if an operation went better than expected, there had often been no preparations to exploit it. The British were probably the worst here - neither in the blowing-up of the Messines Ridge nor the tank attack at Cambrai had any follow-up plan been worked out - but this also occurred in most other armies except the German. Finally, a strategy of battlefield attrition always assumed that one's resources would ultimately prove superior, even while suffering the proportionately larger casualties that repeated offensives entailed; but that assumption rested upon factors (manpower reserves, industrial muscle, public morale) which front-line generals were not well equipped to measure objectively. That was the flaw in Joffre's and Falkenhayn's offenses, and in the falsely confident Russian assessments of early 1917; it was also evident, despite Lloyd George's objections, in Haig's own calculations. Ultimately, attrition warfare is likely to shift the focus of military effectiveness from the operational level to the strategic and political, as was the case with the Vietnam War.

Before moving to those levels, it may be worthwhile drawing attention to the very successful defensive campaigns of the First World War, since they include operational lessons not much studied by Western experts, whose image of this conflict is one of the repeated failed offensives of 1914-17 followed by a run of successful offensives in 1918. The French defense of Verdun owed much not simply to the fact that for once it was Germany that was launching attacks across Western Front trenches, but also to the clever defensive tactics used - digging deep, launching surprise counterattacks to regain lost trenches, rotating the French division frequently to preserve their morale, and so on. The Bulgarian defensive campaigns at Salonika would also repay closer study, as might the hand-to-mouth (and rather lucky) Turkish defense of the Dardanelles. However, the most impressive practitioners of defensive warfare were undoubtedly the Germans. In this respect, their frequent slashing counterattacks on the Eastern Front - usually to rescue their Austro-Hungarian ally from disaster - may be the least interesting if more spectacular examples, since they flowed rather naturally from the German advantages over Russia in terms of railway communication, heavy artillery, and field intelligence. Less well known was the massive re-learning effort in defensive, situational warfare undertaken by the German Army after its heavy losses in the front trenches during the Somme bombardments. By abandoning formal trench lines in favour of the elastic defense of a much wider zone, with dozens of mutually supporting strongpoints behind the first scattered outposts, and with reserve divisions on call in the rear, the Germans made an Allied offensive on traditional lines more difficult than ever before (see Figure 9.1).

By inculcating this emphasis upon counterattack, moreover, the German Army could recover even from enemy surprise assaults if the latter once relaxed their pressure, as their famous riote to the Cambrai tank operation amply demonstrated. Just how long that sort of warfare could have been continued, had Ludendorff not decided to switch to his own unlimited offensive campaign of March 1918 (and thus lose these operational advantages), is hard to guess. Yet that ought not to obscure the fact that just as in the 1942-45 period, the German Army was remarkably good in conducting defensive warfare.

At the strategic level, however, the Teutonic genius for war peters out quickly. Before examining that deficiency, it may be worth looking at those countries which found it easier to be militarily effective in terms of strategy. Clearly, Japan had the lightest task; eliminating the German presence at Kiaochow and in Micronesia was not difficult operationally, and it fitted in nicely with Toyko's strategic aim of enhancing its own position in the Orient. At the same time, political prudence tempered territorial ambition, and the Genro (Elder Statesmen) made it clear that Japanese strategic decisions should not antagonize its allies unduly. Hence the retreat from the Twenty-One Demands upon China, the decision to send warships to the Mediterranean, and the waiting upon American approval of the Siberian intervention
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the defeat of the German Army in the field, and France’s war effort and armed forces were properly concentrated upon that end. On the other hand, Professor Porch is surely right to deplore France’s habit of applying ‘its strategy in such a wasteful manner’—in its rash Plan XVII of 1914, the even more disastrous assaults of 1915 and 1916, and Nivelle’s folly of Spring 1917. Not only did this habit ignore the tactical-operational difficulties of bursting through a German trench system, but it was also strategic nonsense. Such assaults pitted French strength against even greater German strength; the more the French attacked, the faster they were running out of men. This was even more remarkable when one considers the French unwillingness to wait until the British had built up their own army. Only with the 1917 mutinies, followed by Pétain’s decision to await ‘the tanks and the Americans,’ did France adopt a military strategy likely to bring victory rather than defeat.

Italy’s strategy combined the French folly of repeated mass infantry offensives with the hubris of seeking to advance all the way to Vienna. Alternative strategies in the Balkans were abandoned, following the half-hearted Albanian venture of December 1915. Yet the task of driving along the unpromising route to Vienna reflected neither the Italian Army’s tactical competence nor the country’s infrastructural and industrial underdevelopment. All it did was to demoralize an already unhappy army, produce growing strains in Italian society, and (after the Caporetto disaster) make the country increasingly dependent upon its richer and more technologically advanced Western allies. The improvements in battlefield tactics and weapons coordination which were at last occurring in 1918 suggest that the Italian Army’s experiences need not have been so bloody; they do not make the chosen strategy any more plausible.

Once the war had broken out, Russia’s strategic options (like France’s) were severely restricted by the fact that part of its territories was threatened by the most formidable army in the world. However, things were also complicated by the opportunities which beckoned on the Galician front against the far less formidable Austro-Hungarian Army (together with the need to give indirect support to the Serbs). They were complicated still further when Turkey entered the war, thereby opening up a southern, Caucasian front. In theory, the Russians would have done better to have concentrated even more upon these southern and southwestern opportunities and to have avoided, so far as was possible, mixing it with the Germans. Yet there were two compelling objections to that strategy. The first was the political dislike of withdrawing from Russian Poland and the Baltic states, whose peoples would most likely oppose any later return. The second was the needs of Russia’s allies, which St. Petersburg took very seriously, perhaps too seriously considering the disasters of 1914, 1916, and 1917. Nonetheless, there was a logic in putting pressure upon the German Army so as to help preserve France, just as there was a case to be made, by summer 1916, for an offensive to divert some of the Austro-Hungarian forces from the Italian front. The Russian strategy of mobilizing millions of fresh recruits each season for renewed western offensives was thus a very plausible one. It founded, alas, on the harsh realities of operational incompetence, plus an awful array of organizational and infrastructural deficiencies.
in such a mass, peasant-based army. Against the Austro-Hungarian and Turkish forces, the Russians were repeatedly successful, sometimes brilliantly so; but those strategic actions in the southwest would have just overstretched their system when the Germans would come crashing in, with great speed and devastating fire power, to roll the Russians back again. With some rare exceptions, facing the German Army seems to have paralyzed Russian commanders. Ignoring the stunning surprise tactics of the Brusilov offensive, losing the ingenuity displayed in the mountain campaigns against the Turks, Russian generals unimaginatively ordered their divisions forward against German-held positions, and watched them being slaughtered in the marshes, or cut to pieces by explosively fast counterattacks. Losing heavily against the Germans was not a new element in Russian strategy, and one imagines that Staroŭ had gradually come to expect it; but by 1917 the new recruits were no longer the placid younger sons but the resentful second-category men (e.g., those who were the sole breadwinners in a family, and thus traditionally exempt from conscription). In such circumstances, repeating the offensive strategy of earlier years—however logical in terms of Allied cooperation—was fatal.

With regard to Russia's repeated military disasters since the Crimian War, that result was at least not unusual; but it is ironic to see that the homeland of Clausewitz, the elder Molotke, and Bismarck was also unable to formulate a coherent strategy in the 1914-18 conflict. That it was good at the tactical and operational levels of military effectiveness, whether fighting offensively or defensively, seems undoubted, and Professor Herwig's chapter also details the way in which it could retrain its forces at those levels. Its basic flaw, which it repeated more spectacularly in 1941, was to opt for strategic courses of action which, while having a certain military logic to them, undermined rather than secured the nation's larger political goals. In overreaching itself to gain a victory in a specific campaign, it ran the risk of ensuring that it could never win the war as a whole.

It is true that the Germany of 1914 was a victim of geography, in a way that the United States, Japan, and Britain were not; but, as has been noted, France, Russia, and even Italy were also disadvantaged by their location (as were, even more so, Austria-Hungary and Turkey). Yet whereas the French, for example, enhanced their strategic effectiveness by clever alliance diplomacy, the German military mind preferred a quite different solution: escaping from their geopolitical bind by a bold offensive move which, while provocative to neutral Great Powers, would hopefully shatter their immediate foe and thus achieve the desired swift victory. Such a move might fail; and it might well bring another powerful nation into the enemy coalition. Convinced of its own military effectiveness, however, Berlin proved incapable of coldly weighing the balance of short-term versus long-term risk which was at the core of a truly Clausewitzian grand strategy.

The two most notorious German examples of making gratuitous enemies are, of course, the Schlieffen Plan and the 1917 decision to instigate unrestricted U-boat warfare. By the first action, Berlin brought not only Belgium into the war, but also Britain—and, in consequence, the British Empire and (for its own good reasons) Japan—as well as influencing Italy's future course of conduct. Britain's entry sealed the fate of the German overseas empire, and of its merchant marine. It brought enormous financial reserves, and later a great army, into the Allied camp. It neutralized the High Seas Fleet—which was the chief reason why the admirals began to favor using the submarine to carry out guerre de course (despite the fact, as Professor Nenninger points out, that the German navy really had very few boats to implement that strategy). The High Command's decision on unrestricted U-boat warfare (plus the Zimmermann Telegram) added to the list of Germany's foes the United States, by that time the industrial and financial powerhouse of the world, and a country also capable of producing a large, fresh army for war in Europe. Against the Dual Alliance of France and Russia, the Central Powers were somewhat superior in terms of industrial, economic muscle; with the British Empire and the United States becoming enemies, the balances shifted dramatically (even with Russia's demise) and made the German bloc decidedly inferior.
body like a Cabinet for considering the longer term political aims of the German nation. Why that was so cannot be examined further here. The traditional separation of the military and civilian spheres of government, the kaiser’s role as ‘supreme war lord,’ the conservatives’ fear that an open debate about war aims would open up a Pandora’s box of critical opinions, and last but not least—the militarists’ dismissal of both Britain and the United States as ineffective, non-warrior societies, all no doubt form part of the explanation.

It is at the level of strategy, and its relationship with politics, that the British system looks superior. Britain’s world position was, to use Beloff’s phrase, ‘more of a tour de force than that of her rivals.’ Since Britain was much more of an imperial, extra-European power than France, Italy, Austria-Hungary, Germany, and, in the last resort, even Russia, it felt obligated to pay particular attention to preserving relations with the United States and Japan, to ensuring the unity of the empire, to cushioning its substantial interests in the Middle East, Africa, and the Indian sub-continent from the full reverberations of the war, and to keeping its unique place at the center of a liberal, cosmopolitan, trained empire resting upon delicate credit and supply arrangements. On the other hand, since Britain was also much more of a European power than the United States or Japan, it therefore felt compelled to commit a far greater proportion of its manpower and wealth to the preservation of the Continental military balance of power, despite the appalling costs. Finding the right strategic middle way between these two poles, and (again to quote Beloff) striking ‘the correct balance between the immediate requirements of the war and the long-term prospects of the country and Empire’ was a extremely difficult task.

On the whole, the British managed it reasonably well. The Continental balance was upheld (barely); imperial interests were preserved, in some areas considerably enhanced; and relations with all of the Allied Great Powers were skilfully utilized to benefit Britain’s complex strategic situation. Once again, there is no space here to investigate the reasons for this in detail. In part, it can be explained by the fact that the British had been engaged in such a strategic-diplomatic juggling act for a very long time, and had been forced to evolve decision-making structures (e.g., Cabinet sub-committees and the Committee of Imperial Defence) to deal with the working out of priorities. If one examined their handling of the Crimean War, they would look less impressive. This process was aided by a university training for the elite which emphasized ‘judgement and faculty in absorbing and rendering reliable opinions upon a complicated mass of factual material and devising a policy out of it.’ Finally, and less flattering, it was helped by the fortunate fact that Britain was an island; as the French often pointed out, if the British had had an enormous German army encumbered only as short a distance from London as, say, Canterbury or Brighton, they also would have found it difficult to divert troops to Baghdad and Tanganyika. More specifically, though, the British Isles enclosed the North Sea, thus reducing the strategic effectiveness of the High Seas Fleet and giving the Allies an immense strategic flexibility if they could find the means to use it. All this helped to ensure the success of British war aims.

This does not mean there were no problems. On the contrary, civil-military relations were far more controversial during this war than in the 1939-45 conflict, to a large part because the strategic debate was far more divided and angry. The bitter memoirs of leading decision makers which appeared soon after the war, and the polemical writings of Liddell Hart and others, are clew enough that many participants felt that British strategy had been ineffective. Seventy years later, the debate still rumbles on.14 Yet the more the subject is examined, the clearer it becomes that the problem was not about strategy so much as the practical application of that strategy; that is, tactics and operations. This was true, it has been argued above, for all the major combatants; but the British case offers such a superb example of this because in so many other areas (geographical position, supreme direction of the war, assessment of priorities, reserves of economic and diplomatic strength) it was so advantaged. Yet none of those factors would be enough if battles could not be won. Strategically, the ‘Continental commitment’ was the correct one; strategically, the strike at Gallipoli was brilliant in its promise; strategically, protecting the Allied sea routes was quite vital and rightly given high priority. However, the awful problem was that, however correct in theory, those strategies did not seem to work in practice. The Continental commitment, the peripheral strategy, the protection of merchant shipping, all seemed to be hopelessly flawed during the first three years of the war; only in 1917–18 was the corner turned.

Why? In the first place, it has to be said again that this weakness was common to all the Great Powers. For most of the war, no one knew how to break through a strongly held trench system; no one knew how to implement a large-scale amphibious operation; no one knew how to deal with the U-boat menace. The refined Cabinet committee and decision-making system, so good at grand strategy, was ineffective here because ‘judgement is useless unless the material is in the briefs, and for what was needed in military matters once the lines of trenches to the sea were complete, or at sea with the coming of the submarine, was not in the briefs.’ The split which had evolved between the civilian and military spheres of life in the Victorian political culture had meant that, while ministers were well equipped to deal with the political and diplomatic aspects of strategy, they paid little attention to military and naval details: that was for the experts. Yet neither the British Army nor the Royal Navy had, at this time, created an effective staff system to handle tactical and operational problems, to analyze empirical data, to experiment with new methods, and—most important of all—to encourage open discussion which would also include challenging received ideas about how best things were to be done. In this respect, the Prussian staff system was much more ‘liberal’ and ‘forward thinking’ than that in Britain and the other Western democracies, with the possible exception of the United States. Because Haig’s army did not possess a system for the frequent re-examination of tactical methods and operational doctrine, improvements in battlefield technique came slowly and piecemeal. Because the Admiralty had closed minds toward convoy, only a combination of pressures, chiefly external, forced them to experiment with it. Because neither service was
enthusiastic about combined operations, little was done about them. All this impacted upon strategic possibilities in a very decisive way, if negative.

The preceding discussion of military effectiveness from a ‘tactics-upwards’ perspective also allows us to understand more clearly the place of political factors in the larger equation. The term political as used in these essays has actually referred to two separate if interrelated aspects, the first being the availability of financial, industrial, technological, and manpower resources for the pursuit of victory, and the second being the willingness of the nation at large, and their political representatives in particular, to keep on supporting the war effort. Obviously, the former aspect depended upon the latter — although there were also natural, absolute limits to a country’s resources and manpower, if the war went on long enough. With a society which had overstrained itself, the level of morale both in the army and on the home front would become a vital factor in that country’s continuing political-military effectiveness. Virtually all of the writers in this volume report upon the massive economic and manpower resources made available to the military organizations once the war commenced, but this is hardly surprising. Prewar animosities had stoked up military and naval arms races; the ‘mood of 1914’ was patriotic and belligerent; and extraordinary sacrifices seemed justified to ensure the expected swift, decisive victory. When the early offensives ground to a halt, it still seemed natural for each side to call for more intensive efforts, more conscripts, and more munitions, although this frequently produced bottlenecks and massive inefficiencies until new organizations were created to handle them. This slide towards the total mobilization of the economy and society was accelerated by the reports from the generals that the material requirements of the conflict — barbed wire, cement, trucks, machine guns, aircraft, artillery, and especially shells — were fantastically larger than their earlier calculations; in 1915, virtually every belligerent suffered a ‘shell crisis.’

The consequence of this was that, from 1915 onwards, munitions production in all these countries soared, creating new industries and thousands of new factories. The historians of the individual war efforts have warmly praised such transformations, yet the latter also are unsurprising. For all the laments of Liberals about the ‘burden of armaments’ prior to 1914, only a small proportion of national income (4 per cent, on average) was committed to that end. When ‘total war’ raised that figure to 25 or 33 per cent, it was inevitable that the output of armaments would rise dramatically. Given the powers of the modern bureaucratic state to float loans and raise taxes, there was no longer any internal fiscal impediment to sustaining a lengthy war, as had crippled eighteenth-century states. While to the shrinking band of traditional political economists this appeared to be mortgaging the nation’s future, their voices were drowned out by patriotic assurance that the defeated enemy would pay. For the moment, all that was needed was to boost armaments production.

This in turn simply meant that fresh masses of guns, shells, and troops were heaped to the front month after month, season after season — to be wasted and slaughtered and stalemated in the trenches because of the failure of the military organizations to solve the new tactical and operational challenges which the war had thrown up. In that sense, an ever costlier armaments stalemate was interacting with an ever bloodier operational (and therefore strategic) stalemate, so it was not surprising that generals grew baffled, politicians grew desperate, and the public grew ever more resentful as the arms output meant little; what was more critical was how long each economy and society could meet these unprecedented demands when the prospects of outright victory for either side seemed to be fading away. This was where the coalition aspect of the First World War became crucial. Austria-Hungary, despite its repeated defeats by Russia, could be rescued and propped up by Germany; Italy, after Caporetto, could be militarily reinforced by France and Britain; France and Italy could be economically helped by Britain, which in turn could be financially assisted by the United States; the American Expeditionary Force could obtain its tanks, aircraft, artillery, and machine guns from Britain and France; and the British merchant marine could transport these vast flows of men, munitions, grain, and coal.

None of the individual chapters in this collection, by their very nature, can sufficiently cover the collective balance of forces which, following years of stalemate and slaughter, eventually decided the war. Significantly, Russia was the one Allied power which could not be sustained by its partners, as France and Italy could be; unable to protect itself from the German war machine, suffering rampant inflation, with its transportation system breaking down, and its latest round of conscripts disaffected, the country could take no more. It is astonishing, in retrospect, how long it lasted.

Yet the German triumph here was short-lived. By the fourth year of campaigning, its own manpower stocks had been bled away (the army’s size peaked in June 1917, then declined), and even its enormous industrial base had been overstrained by the demands of war. The Hindenburg Programme had unbalanced the economy, produced high inflation, reclaimed workers from the army, and ruined agriculture (and thus food stocks). At the same time, the High Command’s inept policies had brought into the conflict a new enemy, the United States, with a manufacturing output at least two and a half times that of Germany’s shrinking economy, and with a massive manpower stock. It was in these unpromising circumstances — with industrial output down to 57 per cent of its 1913 figure, and the public grumbling at the lack of food — that Ludendorff launched his great offensive of March 1918. Tactically and operationally, it was extremely successful in its early stages, and extremely mobile compared with Verdun, the Somme, and Passchendaele; but as Ludendorff’s armies lunged first in one direction and then in another, his supply lines became overextended and his casualties mounted. By contrast, American and British Empire reinforcements were at last giving the Allies the manpower superiority — and the flow of tanks, aircraft, trucks, and artillery giving them the fire power and mobility — to counterattack the German trenches and then to maintain a steady advance. Curiously, the German collapse occurred at just about the same time as the Turkish, Bulgarian, and Austro-Hungarian. In this coalition war, the entire coalition cracked together.

Even with all the detail we now possess, it is difficult to relate this story of
relative military effectiveness to the state of civil-military relations in each of the combatant countries. In this enquiry, it is necessary to separate the United States and Japan immediately from the other Great Powers, for in neither country were civil-military relations a matter of deep political concern, possibly because war was not intense enough. That leaves for consideration two clusters of constitutional types: (1) the three liberal democracies of Britain, France, and Italy; and (2) the two autocracies, or semi-autocracies, of Germany, Austria-Hungary, and Russia. In all five examples covered in this volume—and, of course, in the Habsburg Empire, too—the military leadership of the war was in frequent, and usually increasing, tension with civilian leaders and political assemblies. In the case of the western democracies, this tension primarily arose because the civilian governments, which de jure were in charge of the supreme direction of the war, feared that they had surrendered de facto control to Haig, Joffre, and Cadorna; that is, to generals who, unable to produce strategic successes, demanded ever larger sacrifices of men and munitions. As Dr. Gooch points out, while Lloyd George and Clemenceau eventually managed to re-assert civilian leadership, Italian politicians were less successful in controlling the Comando Supremo, even after the disaster at Caporetto.

In those societies where the monarchs were the military heads of the nation, and in which civilian interference in military affairs was not permitted, the tensions were somewhat different. In the first half of the war, as in the other belligerent states, domestic criticism was directed at the incompetence of the military organization to produce the promised victory, and was not greatly focused upon constitutional reform per se (although the Duma’s rise in influence was obviously due to those twin discontentsof the war intensifying, and with the respective high commands calling for ever greater sacrifices from their populations without any evident sign of victory, it was predictable that crises would arise for a reform of the entire governing system, not to mention for social and economic compensations for the enhanced ‘military participation ratio.’ Many of the same internal pressures were arising in the western countries—Britain offers many examples of this—but they could be more easily absorbed into the parliamentary democratic system than was the case in the military autocracies. More than that it is difficult to claim, since those powers which did collapse internally (Russia in 1917, Germany and Austria-Hungary in 1918) were also the societies which had overstretched themselves militarily, where transport and food supplies were breaking down, and where it was not possible to secure external aid. Public disenchantment at the political aspects of the war therefore interacted with public unrest at social and economic deprivation, to topple governments and to bring the war effort to a halt. This, in the audit of Mars, was the ultimate test of a Great Power’s military effectiveness.

There are no easy lessons to be drawn from the experiences of the military organizations and societies which fought in the First World War—apart from such obvious platitudes as ‘make sure you solve your tactical problems,’ or ‘don’t overstrain the economy too far.’ As this volume amply demonstrates, military effectiveness is a complicated, multi-layered phenomenon, and one that is unlikely to be attained by a few smart reforms here and there.

Excellence can be secured at one level, only to have the results dissipated at another—higher or lower—level. Being good at all levels is very rare indeed, especially in the early stages of a conflict that is being fought under new technological, economic, and geopolitical conditions; yet the evidence suggests that improvements can be made in the areas of identified weakness, if the system is flexible enough.

Clearly, not all elements which go to make up national military effectiveness can be improved upon by the military organizations alone. The geographical location of a country, whether favorable or unfavorable to the conflict under way, is unchangeable. A backward, poorly educated peasant society cannot be transformed overnight by the order of a High Command suddenly realizing that it needs hundreds of thousands of trained technicians. Weapons systems cannot be swiftly produced, if the necessary raw materials or industrial infrastructure is lacking. Certain forms of warfare may be impossible, or at least very difficult, due to the political culture of the country in question. Military organizations which try to deal with these issues are likely to suffer Ludendorff’s fate. On the other hand, while themselves understanding how such larger political, socio-economic, and geographical factors are likely to restrict certain strategic aims, the military can and should inform the civilian leadership of the implications of those constrictions, in order to allow a reassessment to be made of the nation’s political war aims. If an enemy cannot be defeated with the resources in hand and by the strategies available, the military ought to say so, and the political leadership should then consider seriously the alternatives to outright victory. When Clausewitz argued that the military point of view had to be subordinated to the political, because ‘politics is the intelligent faculty, war only the instrument,’ this also encompassed circumstances in which ‘politics’ would be intelligent enough to win a war or to wind one down. If the military organization has done its best up to that point of political decision, no one need reprove it.

That leads to the final, elemental point. More than anything else, the military organization ought to strive to get its own house in order before criticising outside factors. This is an easy thing to say; at this moment, Washington and other Western capitals are surrounded by politicians, scholars, and 'think tanks' preaching the need for the reform of the military. If the preceding chapters are any guide, it is that that endeavour, too, is a complex, multi-layered one, going all the way down from improving bureaucratic, inter-service structures to producing well-trained and motivated soldiers who know how to fight and who have the right weapons to do so. That means building into the military organization at various levels some sort of self-questioning, problem-solving facility in order to deal with the as yet unforeseen difficulties which will arise. Perhaps it is impossible for any service training to inculcate what one scholar has termed 'that rare kind of imagination which enables men to plan not just for the exploitation of the existing state of their art but for its future developments also.' Yet if the organization shrinks from encouraging 'imagination - the ability to see facts afresh without professional blinkers,' it is unlikely to maintain its military effectiveness for long - or even to be very effective in the first place.
1 I am thinking here not only of N. Dixon's *On the Psychology of Military Incompetence* (New York, 1976), but also of the images of the senior officers which have come from the war literature of Blunden, Graves, and Remarque, of 'Oh, What a Lovely War,' of Solzhenitsyn's *August 1914*, and so on.

2 D. C. Watt, *Too Serious a Business* (London, 1975), is the most relevant work here.


4 It would be absurd, for example, to devote equal space to all seven navies, or to comment as much upon Japanese Army tactics as upon German.

5 For a development of this argument, see P. M. Kennedy, *The Rise and Fall of British Naval Mastery* (London and New York, 1976), chs. 7 and 9.


7 The unthinking title of R. Hough's patriotic offering, *The Great War at Sea, 1914–1918* (Oxford, 1983), which blithely assumes the continued influence of sea power without ever appreciating that the major problem for the British was that the old navalist doctrines were not working in this war.


12 Ibid., p. 176 ff.

13 Ibid., p. 179.


15 Beloff, *Imperial Sunset*, p. 179.


19 Beloff, *Imperial Sunset*, p. 179.

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1946, pp. VI-5. See also Izhizennye voiska v boyah za sovetskuyu родину (Moscow, 1970) for details on engineering operations.
41 Hq. Third Army Intelligence Bulletin no. 8, incl. 1, Nov. 1951, pp. 1–23.
43 Guillaume, Soviet Arms, p. 143.
44 General L. Rendulic, 'The Russian Command in World War II,' DA-OCMH MS P-479, n.d. See also V. E. Savkin, Osnovnye Yadovitogo i taktsiya (Moscow, 1972); V. S. Popov, Biezapnost' i bezhidanost' v istorii Voini (Moscow, 1955); N. I. Shekhovtsov, Spasoblity dostizheniya bezopasnosti V godi Velikoi Otechestvennoi Voini (Moscow, 1957); and V. G. Prozopov, Takticheckaya bezopasnost' (Moscow, 1958).

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Military Effectiveness in the Second World War

Earl F. Ziemke
University of Georgia

Introduction

The Second World War was perceived as a moral and ideological conflict. The anti-Axis coalition regarded it as a defense of freedom and democracy. The Axis powers saw it as a racially and culturally dictated struggle for national self-fulfillment. Each side proclaimed a firm dedication to commonly held principles in the abstract and left its members free to construe them according to their own lights. In their announced war aims, the governments on both sides committed themselves to crusades: the United States, Britain, and the Soviet Union against fascism and militarism; Germany and its allies against communism; Japan against colonialism. The sense of a righteous cause and the promise of a 'brave new world' to follow figured significantly in the military effectiveness of the Axis armed forces as well as those of their opponents – and in the ruthlessness with which the war was fought.

The still prevailing view that the war was just and necessary has tended to obscure its more fundamental and pervasive character as a continuation, an updated re-enactment, of the First World War. The political division was essentially the same: Britain, France, Russia, and the United States against Germany, with Japan and Italy, as they had in the first war, following their pure self-interest. Although the war was thought of as global, the decisive theater was in Europe, and there the predominant strategic problem for both sides was again a two-front war. The Second World War was fought with the same weapons and technology as had been employed in the first war. Those were much improved in some but by no means all instances, and the weapons that could have radically altered the nature of the war, the atomic bomb and the long-range, liquid-fueled rocket, did not come along until after the issue had been decided. The political and military leaders derived their experience
and their conceptions from the First World War, as did a large part of the adult population.

Moreover, even before it ended, the First World War had been regarded as militarily and politically incomplete. Germany had been defeated, but the Allies had not secured an indisputable victory in the field. The German military had not signed the armistice, and some were claiming before the ceasefire that they could have kept on fighting indefinitely had defeatist citizens not 'stabbed the army in the back.' The losers were excluded from the peace conference; consequently, the Germans regarded the Treaty of Versailles as a Diktat, a contract signed under duress and hence neither morally nor legally binding. Among the former allies, the Japanese and Italians saw the settlement as having been rigged against them; the French saw it as not sufficiently guaranteeing their future security; the British and Americans were reluctant to participate more than passively in its enforcement, the Americans to the extent of refusing to join the League of Nations; and the communist successor to the tsarist Russian government saw itself treated as if it were one of the defeated enemy states.

The European war of 1939, consequently, broke upon a continent and a world much more specifically conditioned than they had been in 1914 or were likely to be again after 1945. The mood among the belligerents was distinctly somber. The excitement and near euphoria of August 1914 were nowhere in evidence. Doctrine in all armies assumed another prolonged stalemate and the attendant costs in money, resources, and lives. Verdun, the Marne, and the Somme were not just memories but catastrophes waiting to repeat themselves. Each of the armies expected itself and the others to perform about as they had in the First World War, which meant that neither side would have a decisive advantage, the dominant tendency would be toward equilibrium, and the final test would, more than anything else, be one of endurance. In those circumstances, it appeared that the war would follow much the same path to much the same outcome as the First World War had. Those assumptions persisted at least until June 1941 and strongly affected the Polish and French campaigns and the initial phase of the German-Soviet conflict.

That the nature and course of the action proved radically different than had been anticipated separated the two wars in one respect (although not as completely as has sometimes been supposed) but cemented the tie between them in others. When the Western Front disappeared in May and June 1940, the illusion of another geographically limited, slow-moving close contest in which a deus ex machina, such as the United States had been in 1918, might eventually tip the balance crumbled. For Germany, Italy, and Japan, dreams barely admitted to consciousness in the first war - complete hegemony in Europe, the Mediterranean basin, and East Asia - became palpable objectives real and the taking. For Britain, the Soviet Union, and the United States, the Axis Powers no longer were threats only to their weaker neighbors but to the Continental and world orders. As a result, the issues and outcome of the First World War acquired new and enhanced significance. The term the Allies, revived and applied to Britain and France in 1939, attained such natural and widespread currency that the official name for the anti-Axis coalition, the United Nations, was scarcely used in other than formal state papers. The Soviet government saw nothing inappropriate in its calling for a British - and American - second front in the summer of 1941, nor did Franklin D. Roosevelt and Winston S. Churchill see anything inappropriate in their issuing a joint statement of war aims, the Atlantic Charter, in August 1941, and in calling on Josef V. Stalin to affirm it, which he did. The Axis, having come into being already in 1936, appeared to constitute a community of interest stronger and of longer standing than that of the Allies. Both coalitions saw their missions as being to correct the First World War's most fundamental shortcoming, its failure to mature into a genuine fight to finish. In the Axis, the remedies taken were vision and determination and, above all, goals that would not merely promote national well-being but would positively guarantee it for all time. The Allies maintained that the First World War had demonstrated the fallacy of allowing aggressors to escape the full military consequences of their behavior, and that once it was corrected peace would automatically be permanently restored.

Political Effectiveness

Another of the First World War's legacies was a trend toward totality. Although the conflict had begun and eventually ended as a cabinet war, an exercise in power politics generated in the foreign offices and war ministries and carried on with an eye to price as well as profit, the price had begun to get out of hand already in September 1914, when the virtually unbreakable equilibrium developed, and by 1917 and 1918 had come to include nearly the whole of the belligerents' economic and manpower resources. The European war of 1939 can, without excessive license, also be classed as a cabinet war. Certainly none of the parties was ready for total war; and all were, if anything, relatively less ready than they had been in 1914. In it, however, the degree of equilibrium was not reached in six weeks or on the Marne River but at Moscow in December 1941. By then, both sides' commitments had vastly expanded, and the coincidentally simultaneous shift to world war was making total war inevitable. Concurrently, the military-political relationship, which always had been somewhat different in war than in peacetime, was profoundly altered in all of the involved nations - and despite the ideological and political divisions among them, in remarkably similar ways.

The most striking and uniform changes occurred in the political sphere. Where independent legislatures existed, which was only in England and the United States, their voices in military affairs were muted. In the Soviet Union, where the legislative function had never been more than ceremonial, Stalin in 1941 created the State Defense Committee, a select body of Politburo members and specialists under his chairmanship, and gave its decrees automatic force of law. In 1942 General Hideki Tojo founded the Imperial Rule Assistance Political Association to bring the parties in the Japanese Diet, which he had already packed with subservient members, under a single, fascist roof. The executive branches everywhere became the exclusive centers of political power and in them the power was vested in the chief

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executives. The latter, as political war leaders and personifications of the national spirit, became active military leaders as well and personally exercised the constitutional functions as armed forces commanders-in-chief that had formerly been delegated directly or through ministers of war to the military professionals. Adolf Hitler, who had assumed the German President’s powers as armed forces commander-in-chief in 1934, supplanted the Minister of War as de facto commander-in-chief in 1938, named himself commander-in-chief of the German Army in December 1941, and for a time in the summer of 1942 took command of an army group on the Eastern Front. Stalin became supreme high commander of the Soviet armed forces, Defense Commissar (minister), and chairman of the Staff (staff) of the Supreme High Command in July 1941, giving himself the ranks of marshal in 1943 and generalissimo in 1945. Both Hitler and Stalin had the absolute last word on strategy and routinely intervened in operational matters to the point of issuing orders in person to army group and army commanders. While neither Churchill nor Roosevelt came anywhere near taking the day-to-day control Hitler and Stalin did, Churchill, as his own Minister of War, appointed and dismissed senior commanders and showered his chiefs of staff with advice; and Roosevelt kept the US Joint Chiefs of Staff under his immediate control through its chairman and his personal chief of staff, Admiral William D. Leahy. Benito Mussolini and Charles de Gaulle, although they possessed considerably less power, adopted their foreign counterparts’ style. Ironically, Tojo, the only one whose political position was derived from a military base, was the least successful in establishing and maintaining his ascendancy in military affairs.

The national war leaders provided a political–military bond that gave the armed forces direct access to the full resources of the state and generally assured fast response to their requirements. At the same time, the armed forces lost autonomy in their own sphere. Being brought closer to the centers of political power, if anything, increased their subordination to it. The military profession rose – proportionately to its ability to provide victories – in the esteem of the political leadership, but the esteem in which the political leaders held themselves and that popular opinion accorded them was enormously greater. In total war nations wanted leaders with charisma and looked on military professionalism as a quality of a lower order. To take the most extreme example, it appears probable that given a free choice, the German people would, from start to finish, have preferred Hitler to any of the generals as the supreme military commander. That the Second World War did not produce a Napoleon Bonaparte goes without saying. It also did not produce a Marshal Ferdinand Foch or the kind of military-political éminence grise General Frich Ludendorff had been in Germany during 1917 and 1918. General Dwight D. Eisenhower, as the supreme commander in the final assault on Germany from the west, was subordinate to the Combined Chiefs of Staff as commander of the Allied forces and to the US War Department and army chief of staff, General George C. Marshall, as commander of American troops in the European Theater of Operations. Most of the political leaders maintained a closer relationship with one officer than with any of the others – Roosevelt with Admiral Leahy, Churchill with

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General Hastings Ismay, Hitler with General Alfred Jodl, Stalin with Marshal Georgi Zhukov – but none of those had a deciding voice in military matters or any at all in political affairs.

Censorship, propaganda, and suppression of political debate were also determining features of the military-political relationship. Where bona fide party systems existed, which was only in the United States and the British Commonwealth, the opposition parties received junior partnerships in the governments in return for not raising publicly issues that could be detrimental to the war effort. The Soviet regime restored limited religious freedom and appealed to Russian nationalism. Censorship denied information to the enemy and kept disturbing or inconvenient news from the public. Propaganda sustained the causes and presented the governments and the armed forces as they wanted to be seen.

That military and political leaders functioned in controlled climates of political and public opinion in the Second World War (which, by way of comparison, they did not do in the United States during the Korean and Vietnam wars) worked to the advantage of both but more to that of the politicians than the military. The military leaders were obligated to put political interests ahead of their own; the political leaders did not need to reciprocate beyond the limits of expediency. Hitler, for instance, took his share of credit for the German victories and gave the military both his and their shares of the blame for the defeats. In North Africa, Churchill used his senior commanders as whipping boys. Stalin kept the two marshals who could have created a true army high command – Zhukov and Alexandr Vassilevsky, first deputy defense commissar and chief of the General Staff, respectively – in field assignments away from Moscow almost all of the time.

The coalitions (the United Nations and the Axis) added a dimension to the political-military relationship. For the armed forces, they constituted another political consideration to be taken into account. They were political arrangements instituted without particular regard for the members’ abilities to mount and sustain war efforts; consequently, the United States, British, and German armed forces had to compete to various extents with their allies for shares in their own nations’ war production, the British having to compete with the Soviet Union and China in the United States as well. In their origins certainlyLend-Lease and the arsenal of democracy theory implied that the United States could more effectively employ its productive capacity by sustaining foreign armed forces than by building up its own. The climate of total war not only altered the military-political relationship, but it also virtually guaranteed the military’s political effectiveness in terms of the measurements customarily applied. Non-war-related claims to shares in budgets ceased to be significant. In the second half of 1940, the defense share of the US budget was 36 per cent; in 1944, it was 93.5 per cent. Overall, in the years 1940–5, 90.4 per cent of the funds in US budgets went to defense, 77 per cent directly to the armed forces. The German armed forces’ direct budget share in the years 1939 through March 1945 was 74.5 per cent. Since the United States and Germany are usually taken to have been the two among the major belligerents least willing to impose austerity on the civilian sector, it can be assumed that the armed forces’ percentages were as high or higher.
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elsewhere. In any event, the percentages do not show a great deal about the armed forces' abilities to meet their requirements because funding as such became an almost incidental concern. No government was disposed to economize on its war effort. Budgets were the most elastic of the sources from which the armed forces derived their support.

Readily expendable wartime budgets, however, did not drastically diminish the significance of funding as an index of political effectiveness in all respects. If, as appears likely, the amounts governments appropriated came close to being the maximum that could be usefully spent, then the sums allotted to individual claimants could in some degree reflect their political standing. The armies' shares in the budgets, for instance, appear in several instances to have been less than commensurate with their roles in the war. In Germany, the Luftwaffe received almost 42 per cent of the total spent on armaments. The British Royal Air Force's share was at least 50 per cent and probably went higher. The Army Air Force absorbed over 36 per cent of the US War Department's expenditures for matériel. Overall in the war, for every $100 the US Army spent, the navy spent $85 and the air force $60. In the US budget, Lend-Lease competed strongly with the armed forces as a whole and the army in particular. The approximately $50 billion total Lend-Lease allotment slightly exceeded one year's War Department appropriations at the highest (1944) level, and some $21 billion of it was spent through the Army Service Forces' procurement system. Access to industrial resources supplanted budgets as the dominant aspect of the military-political relationship. As in the case of funding, except possibly in Germany, non-war-related claims were a small to negligible part of the issue; governments and armed forces were equally determined to maximize war production. The problem was that economic and industrial resources were less elastic than money supplies. They could be expanded, but there were limits on ultimately attainable capacities and, probably more importantly, on the rates at which expansion could be achieved. Even the United States could not increase production fast enough to keep pace with all of the war's demands as they arose. Consequently, industrial resources and the armed forces access to them had to be regulated.

Controlled economies had proved indispensable during the First World War, and Germany, Japan, Italy, and the Soviet Union had maintained or reinstated them during the interwar period. In the Second World War, economic policy stood alongside strategy as, in the words of the British official history, one of the twin summits of the war. Strategy set the course; the national economies provided the means. Without the latter, the best strategy would fail. The whole art was to bring the two into consonance, and it required the ultimate authority over both to emanate from a single source. That the political leadership would be the source was not in doubt except in Japan, where the military had assumed the political functions. How coordination should be accomplished beneath the summits was much less certain. Custom and constitutions made the armed forces the executors of strategy but provided no guidance on the management of war economies.

Giving the armed forces the same roles in both of the war's main aspects was a logical and symmetrical solution, but would have had extensive political and military effects. In Germany, where the armed forces traditionally regarded the conduct of war as their exclusive province and the idea of total war was firmly fixed earlier than elsewhere, the Economic Staff under General Georg Thomas, established in the Reichswahl (defense) Ministry in 1934 and transformed into the Economic and Armaments Office of the Armed Forces High Command in 1938, readied itself to take over the whole economy in the event of war. The US National Defense Act of 1920 gave the responsibility for economic mobilization to the Assistant Secretary of War, but in the early 1930s the War Department decided that none of the permanent departments, itself especially, should be the agency for imposing an economic dictatorship on the country. The last (in 1939) of several War Department plans proposed a temporary War Resources Administration under a civilian administrator who would report directly to the President. For the political war leaders, the two summits posed a dilemma: leaving the middle and lower reaches of economic policy and strategy to the military would extend the already greatly expanded military presence into an essentially civilian, and hence political, area and could foster military encroachments upwards; civilian economic control, on the other hand, would split the war effort and would lodge a very strong concentration of potentially political power in the economic agencies.

Except in Japan, the political leaders opted for civilian control over the war economies. For Stalin, the decision was automatic; the transition from a peacetime to a war economy was built into the system. Economic mobilization had been going on in the Soviet Union since the First Five-Year Plan in 1928. Hitler (although Germany also had an early start), Churchill, and Roosevelt juggled the military interests, the civilian-administered controls, and their own authority, improvising new means periodically to keep all three in the air. The war economies existed for the military's benefit; but as equal and autonomous partners, they were also competitors. Their mission was to perform feats of production matching the military feats on the battlefield, and the political war leaders regarded themselves as the commanding generals in the war of production. As a result, the needs of the armed forces to a significant extent competed in the war economies with pressure to raise output for its own sake and with the political leaders' independently formed conceptions. The United States turned out more tanks than any of the others but struck a questionable compromise between effectiveness and producibility. Soviet industry built thousands of T-60 light tanks in 1942 even though they had by then been proved hopelessly outclassed. The Soviet Union manufactured several hundred thousand small-caliber antitank rifles whose fire could not penetrate the armor of any German tank in use, and the United States brought out the Reising gun, an easily producible sub-machine gun that rusted fast and was incapable of armed automatic fire. Germany, in part because Hitler had an affinity for mechanical things, put quality ahead of quantity but pushed conventional weapons to the detriment of its heavy rocket and flying bomb programs and eventually put the V-1 flying bomb into production ahead of the vastly more effective V-2 rocket because it could be brought off the assembly lines sooner.
The absence of an established military role, other than as user, in war economies left the political leaders free to construe their own roles as they saw fit. In England and the United States, legislative and public opinion imposed limitations that generally, and perhaps not entirely fortuitously, served the military interest. Against rising pressure in Parliament, Churchill ran the British war economy through the Defense Committee (Supply) and the subordinate ministries of Supply and Aircraft Production until early 1942, when he created the Ministry of Production to coordinate the requirements of the three services, even though he had previously insisted that coordination was his sole prerogative as Minister of Defense and chairman of the Defense Committee (Supply). Roosevelt, who had set up a congeries of boards and offices having to do with military production before Pearl Harbor, created the War Production Board (WPB) in January 1942 and told its first chairman, Donald M. Nelson, he would have "complete and absolute control over the production of all implements of war and related activities." Nelson and his associates undertook to manage the war economy in strict accordance with business management practices. In May 1943, after controversies between the military departments and the WPB had boiled over into the Congress and the press, Roosevelt established the Office of War Mobilization, appointing James F. Byrnes, an experienced politician, to be its director and giving him a mandate 'to coordinate the work of all the war agencies and federal departments.' Like his opposite numbers in the democracies, Hitler did not give his war economy coherent control until after the world war began. In February 1942 he appointed Albert Speer to be Reich Minister for Weapons and Munitions and thereafter tacitly supported Speer's efforts to bring all the military and civilian economic agencies, of which there were many great and small, under his supervision. Speer first denied General Thomas, his likeliest rival, access to the central planning board in the ministry and subsequently dismantled the Armed Forces Economic and Armaments Office.

Although the military were often on the fringe of the economic decision making, they were always very close to the effects. In his January 1942 State of the Union message to Congress, President Roosevelt announced production goals of 60,000 aircraft and 45,000 tanks in 1942 and 125,000 aircraft and 75,000 tanks in 1943. Those figures and some similarly large ones for other items threw the War Department procurement program into turmoil for the better part of a year. The President had given morale in the United States and abroad an enormous boost at the darkest time in the war and for months insisted his goals had to be met, but doing so would have totally unhealed the armament program. Hitler repeatedly declared total war, but out of early overconfidence and a lingering concern for his popularity with the German people, he was the last of the war leaders actually to resort to it. During the first three years of the war, he kept the armed services on a hand-to-mouth regimen, cutting one's programs and advancing another's to meet the war's short-term demands; and he was slow to cut civilian consumption. The part of the gross national product going to the British war effort reached 60 per cent in 1941, a percentage not reached in Germany until 1943. From 1939 through 1943, 45 per cent of the German and 54 per cent of the British gross national product went to support the war.

The airplane exerted pervasive influences on the political leaders' management of the war economies and the individual armed services' access to those economies. It became probably the most politically potent weapon ever to have existed. It was the physical embodiment of national technological and industrial strength. While other weapons had been improved, its development had recently advanced in quantum leaps that dazzled the mind and challenged the imagination. The German and Japanese advances in Europe and the Pacific made the long-range heavy bomber the most promising means of coming directly to grips with those nations on their own territory and, possibly, of defeating them without the necessity of long and bloody operations on the ground. The airplane was also, in terms of industrial resources, by far the most expensive mass-producible weapon. In the United Kingdom, the United States, and Germany, the aircraft industry was the largest single war industry. In Britain, by late 1941, aircraft production drew so heavily on industrial resources 'as completely to outweigh the burden of other priority demands.' When the armed forces' total requirements exceeded productive capacities and programs had to be 'balanced,' air forces could generally rely on high-level political support for having their programs put at the head and the others balanced around them. In the fall of 1942, after the War Production Board told the Joint Chiefs of Staff that the armed forces' production objectives could not be met within a realistic time frame, procurement for the Army Ground Forces was cut 21 per cent and the Army Air Force's programs were not touched. The demands of all British production programs had to be reduced in late 1942, but as the official history states, 'the reductions which the Ministry of Aircraft Production was expected to undergo were much less than those of other departments.'

In a total war effort, access to manpower was crucial to both armed forces and political leaderships. Although its availability varied from country to country, it was a much more finite quantity everywhere than were money and industrial plant. Populations could be more intensively exploited, but they could not be expanded. Moreover, manpower was an economic resource as well as a military asset; the strengths of the fighting forces and the war economies were equally dependent on it; and armed forces' effectiveness involved utilizing as well as securing it. In the area of manpower the political leaders' conceptions affected the armed forces' conduct of the war more perversely than in any other. Stalin held to the principle that success depended on the ability of the rear to supply men and matériel to the fighting fronts in great enough quantity over a sufficient period of time to outdo the enemy. He was, from first to last, willing to contemplate a war of outright human attrition. Roosevelt and Churchill, who never really had to face the problem of survival in as bald terms as Stalin did, put the cost in lives of their own people above all other considerations. They counted on substitutes: technology (primarily in the form of the airplane), industry, and Stalin's readiness and ability to expend manpower. Lend-Lease was devised to substitute Americans' industrial know-how for their presence on the battlefield. For Churchill, to avoid
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another Dunkirk or battle of the Somme was an absolute necessity. Hitler was certain that the Germans were hopelessly outnumbered. His whole aim in the war was not to allow the enemy’s manpower to come fully into play. The Japanese were probably more ready than any other people to give their lives in the national interest, but owing to the peculiarities of its situation, Japan could not exploit its military manpower potential to the full.

Although they were not the sole influences, the political leaders' conceptions were strongly reflected in the force development of their respective armed forces. The US and Soviet peak armed forces strengths were about the same, 12.2 and 12.5 million, respectively; the German peak was 9.5 million, the Japanese 7.2 million, and the United Kingdom 5.1 million. The Soviet military dead, reliably estimated at 13.6 million, indicate a total mobilization in excess of 26 million and clearly demonstrate that the Soviet military did indeed treat manpower as a major expendable resource. The 3.5 million Germans killed indicate that Germany mobilized about as many troops as the United States did and that the German military managed, on the whole, to reduce the effects of their enemies' numerical superiority. The 1.5 million Japanese, 292,000 American, and 262,000 British losses probably do not by themselves reveal much other than smaller and shorter combat commitments than those of the Soviet and German armed forces, but other comparisons relating particularly to the British and American forces can be made. In the Soviet peak strength the Red Army had 81 per cent of all uniformed forces and the Red Air Force, including air defense forces, was 13 per cent. The German Army was 69 per cent of uniformed forces (with the Waffen-SS, 74 per cent) and the Luftwaffe was 18 per cent. The British Army was 56 per cent and the Royal Air Force 23.5 per cent (and 41 per cent of the strength of the army). The US Army was 48 per cent and the Army Air Forces 19.6 per cent (40.6 per cent of the strength of the army). Although the only available figures on actual ground combat strengths are those for the US Army, it can be assumed that the ratios of combat to service troops were relatively high in the Red Army and the German Army and higher in the former than in the latter. In the US Army (excluding the air forces) the Army Services Forces had 53 per cent of the troops, the Army Ground Forces had 47 per cent, and the actual ground combat soldiers constituted about 37 per cent of the total. Out of a total strength (including the air forces) approaching 8 million in March 1945, the US Army had slightly over 2 million in ground combat units, only about 100,000 more than it had had in December 1942.

In the war economies (except in the Soviet Union, where the German invasion produced a sudden catastrophic drop in plant capacity, particularly for iron and steel), manpower limitations were the first to arise and the most difficult to overcome and hence were persistent concerns for the armed forces and the political leaders. The political leaders' conceptions influenced the manpower allotments to the war economies as heavily as those to the armed forces, and the armed forces' demands for continuing increases in military manpower and in war production made the military, in effect, its own most ruthless competitor. Direct amelioration could only be achieved in a few ways: by diverting manpower from non-war-related occupations, by substituting women and children for men in the war economies, and by acquiring foreign manpower sources.

The Soviet and German situations were inherently the most difficult. Stalin and his generals discovered that their manpower resources did not automatically guarantee a capability to achieve steamroller effects against their opponents on the battlefield and to sustain war production. The Soviet industrial labor force, which had been 31 million in 1940, dropped to 18 million in 1942. That and a simultaneous drop in steel-making capacity from 18 to 8 million tons per year necessitated a drastic reorientation to keep the economy afloat. Since Soviet industry had never been more than marginally oriented toward a civilian consumer market, diversions could only be made from what elsewhere would have been considered war production; consequently, the Soviet war economy concentrated almost exclusively on weapons and ammunition. Women and children accounted for 85 per cent or more of the work force of 27 million in 1944. The 'Rosie the riveter' image prevalent in the West did not apply in the Soviet Union; there women mined coal - and dug the entrenchments around Moscow in the fall of 1941. The Soviet Union acquired a foreign manpower (and steel) source in the Lend-Lease program sufficient to provide 410,000 motor vehicles, 2,000 railway locomotives, 10,000 flat cars, and other industrial products by the millions of tons. Hitler and his generals knew that Germany could not compete on terms of sheer manpower. General Thomas's solution was to put the entire economy in military harness and thereby at least prolong the contest. Hitler's solution was to bank on being able to resolve the contest without confronting the problem head-on. In Germany the reduction of the non-war-related work force was slow, just 15 per cent from May 1941 to May 1944. Consumer goods, which had been 30 per cent of the gross industrial output in 1938, were 22 per cent in 1944. In 1938 the German labor forces consisted of 25.5 million men and 14.6 million women. The male contingent dropped to 13.5 million by September 1944, but the number of women increased only to 14.9 million. Imported foreign workers, prisoners of war, and concentration camp inmates raised the total work force to 35.9 million, 3.2 million less than had been employed in 1938.

Whereas circumstances imposed the Soviet and German manpower problems, those of Britain, the United States, and Japan were largely self-generated. In the British war economy, the aircraft building program, in which bombers predominated, absorbed close to 40 per cent of the work force after 1941, and all other military production had to be balanced around it. That large item created a permanent manpower drought and necessitated an increase in the proportion of women in the work force to 39 per cent and a 43 per cent cut in non-war-related employment. Nevertheless, the British war economy probably could not have been sustained as it was structured without its access to foreign manpower through Lend-Lease. In the United States, the manpower 'crisis' came in late 1942 when the armed forces' projections brought the numbers of men they expected to have in uniform by the end of 1943 to 11 million and by the end of 1944 to over 14 million. The War Production Board and the War Manpower Commission protested that
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withdrawing the men to meet those demands would impair the war economy. The armed forces defended their exclusive right to determine their manpower requirements, but in late 1943 they adopted the view that their decisions ought to take other than exclusively military considerations into account and accepted a 2.1 million reduction in the projected 1944 strength. For the United States, at worst, a manpower shortage came within the range of possibility. Consumer goods production, except for automobiles and other mechanical and electrical items, was 16 per cent higher in 1944 than in the last depression year, 1941. Women did not enter the war economy in significant numbers until the second half of 1942 and were not encouraged to seek war employment until 1943. 29 In a way, the Japanese manpower situation resembled that of the United States. From 1937 through 1943, the Japanese armed forces drafted 3.1 million men at a rate that hardly caused a ripple in the manpower pool. In 1944 and 1945 they took in another 3.4 million, which brought the total drain to just above half of what the roughly equal German population sustained. Consumer goods virtually disappeared in the last two years of the war, mainly because of the bombing and a poorly organized distribution system. The employment of older and younger males and a modest increase in the employment of women covered the loss to the draft and added over half a million to the work force. 30

On the whole, it appears that effectiveness in exploiting their nations' industrial and manpower resources, in the sense of putting those to the most rational and economical uses, was not an outstanding characteristic of the armed forces in the Second World War. The shift from limited access to scarce monopoly of natural resources did not result in commensurate increases in the armed forces' control over the development of their forces. The political leadership in each nation gave the armed forces what it believed they needed to conduct the war in accordance with its conceptions.

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The one almost universally accepted judgment on the First World War was that it had been the consequence of national goals and strategies, not the instrument of them, that governments and the military alike had stumbled into it and through it. The results appeared to show the greatest shortcoming in the capacity to establish and realize appropriate goals, hence what were needed for the future were not just ad hoc war aims but comprehensive, long-term, constantly operating programs.

Mussolini provided the framework for such a program in the doctrine of fascism, which totally subordinated individuals and groups to the state for the purpose of enhancing the nation's will to power and supremacy, expressing its vitality in expansion. He regarded permanent peace as 'neither possible nor worthwhile' and 'war alone' as capable of 'bringing all human energies to their highest pitch and ennobling nations.' 31 Hitler added a strategic imperative, Lebensraum, which was essential for two reasons: because a people could not survive without space in which to grow and because space in and of itself determined a nation's stature in the world. Lebensraum, therefore, made the program open-ended. As Hitler put it, 'Wherever our success ends, it will always be only the point of departure for a new struggle,' Hitler's first and probably most influential advisor on geopolitics, the former Bavarian General Staff officer Karl Haushofer, had based his theories in part on a study of Japan, which he believed had been following the program instinctively since the late nineteenth century. 32

In the early 1920s, the fascist program was the pipe dream of a fledgling dictator in a bankrupt Italy and his disciple in a defeated and disarmed Germany; less than twenty years later, it dominated the Axis strategies in the Second World War. The transition depended on many things but on none more than the political and military acceptance of war as the preferred instrument of national policy. In Japan, the army and navy took the government in tow during the early 1930s, although on somewhat divergent courses until after the end of the decade. In Germany, after January 1933 the armed forces enthusiastically supported the first phase of the program, rearmament, but the Army High Command resisted the thought of actual war when Hitler first officially introduced it in late 1937 and was — ineffectually — talking mutiny in August 1939. Mussolini flexed Italy's military muscle in Ethiopia in 1934-5 and in the Spanish Civil War, 1936-9, and signed a military alliance, the Pact of Steel, with Germany in May 1939 but excused himself from his treaty obligation when a real European war seemed to be brewing in August 1939. The German Army General Staff believed the offensive it planned on Hitler's orders against the Low Countries and France in the fall of 1939 was going to bog down on the Somme River. While the Germans were invading Poland, the Japanese Army was taking a severe beating on the Khalkin Gol River in Outer Mongolia at the hands of the Soviets, whose expulsion from the Far East it had long regarded as the highest priority item in the Japanese program.

During the winter of 1939-40, the war became almost a joke, the 'phony war' in American newspapers, the Sitzkrieg in Germany. Then, in the six weeks after 10 May 1940, the German Army did what it had not managed in the four years from 1914 to 1918: it defeated France and drove the British off the Continent. Mussolini plunged in at the finish to claim a share in the victory. In late June, three weeks before Hitler first raised the possibility, the chief of the German General Staff, General Franz Halder, one of those who had talked mutiny in 1939, ordered his operations branch to consider how the Soviet Union could be dealt a 'military blow' that would 'compel the Russians to acknowledge German hegemony in Europe.' 33 The German victory in Europe also exposed the French, Dutch, and British colonial possessions in Southeast Asia and the western Pacific, opening a vista that quickly persuaded the Japanese Army to give up its preoccupation with the Soviet Union and join the navy in promoting a southward expansion. In September Germany, Japan, and Italy signed the Tripartite Pact, which threatened the United States with a two-front war if it took military action against Japan. 34 The program had come into its own.

The anti-Axis coalition had two programs, one Soviet and one American. The Soviet program was attributed to V. I. Lenin, who predicted 'a series of frightful clashes between the Soviet Republic and the bourgeois states' on the
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way to the worldwide triumph of the communist revolution. Stalin had elucidated and expanded Lenin's thesis in 1927. War with the capitalist world, he said, was inevitable, as were also imperialist wars between the capitalist states. The Soviet mission would be to delay its involvement—by 'buying off the capitalists,' if necessary—until capitalist states had made the capitalist world ripe for destruction. In the Nazi-Soviet Pact and the Treaty of Friendship of August and September 1939, Stalin bought off Germany and opened the way for an imperialist war. A year later, after the fall of France, he was alone on the Continent with the most dangerous capitalist state.

The American program dated back to the First World War slogan 'the war to make the world safe for democracy' and the 'war to end all wars' and to President Woodrow Wilson's faith in collective security, disarmament, and national self-determination. Whereas the fascist and Soviet-communist programs justified war, the Americans saw war as having only one useful purpose, its own abolition. During the isolationist era of the 1920s and 1930s, the American program was regarded as having been something between a hoax and a tragic self-deception, and disillusionment with it strongly influenced the US attitude toward European war until the summer of 1940. A year later, the same program reappeared in its entirety, including the 'worldwide abandonment of the use of force,' in the Atlantic Charter of August 1941, which the entire membership of the anti-Axis coalition reconfirmed in the United Nations Declaration of 1 July 1941.

While the programs were purported to have renovated war in its political aspect, no similar claim could be made for military strategy. As of September 1939, the lessons and experience of the First World War still dominated it. Twenty years' ardent search for ways to restore the war of annihilation had produced some new terminology—deep operations, the attaque brouage, and Blitzkrieg—but the war of attrition and the superiority of the defensive were the accepted strategic realities. The campaign in Poland appeared to show nothing about the potentialities of the Blitzkrieg. On 3 October 1939, General Wilhelm von Leeb, who was then the senior commander on the Western Front, told the army commander-in-chief, General Walther von Brauchitsch, that an attack on France could not be conducted the way the one on Poland had been; it would be protracted and impose heavy losses and would not 'bring the French to their knees.'

In general, and particularly for the ground forces, mass was assumed to be the strategic determinant, the objective to outlast the enemy, and strategic surprise to be out of the question. Border fortifications, the Maginot Line, the German West Wall, and the Stalin line were expected to frustrate any attempt at a sudden attack. Besides, it was thought to be better to stand on the defensive and let the enemy take the punishment. On 3 October 1939, Leeb and Brauchitsch hoped Hitler could be persuaded to do that, if he could not be brought to see the entire futility of the war. General Maurice Gamelin, the Allies' commander-in-chief, is said to have prayed for the Germans to attack and fall into the trap he proposed to set for them on the Dyle River in Belgium. To André Beaufre, then an officer in the French General Staff, Gamelin looked pleased and perfectly confident of the outcome on 10 May even though the German offensive begun that morning had come as somewhat of a surprise. On the German side that same morning, according to General Heinz Guderian, only three people who knew about it really had confidence in the plan. Guderian, General Fritz-Hans von Manstein (who had conceived it), and Hitler.

Naval strategy also derived directly from the First World War. The battle fleets, consisting of battleships and cruisers, were the 'mass,' the floating Maginot Lines, for the main naval powers, the United States, Britain, and Japan. Strengths were measured in battleships, which were considered to be the most powerful and most effective weapons in existence. The Japanese Navy believed it had achieved a decisive advantage over the larger US Navy in 1937 when it began building the nearly 70,000-ton Yamato class battleships, which were twice the internationally agreed weight limit. The shift to heavier (and faster) battleships was taken to be the most revolutionary change in naval warfare since the launching of the Dreadnought in 1905. Germany had laid down two 50,000-tonners, Bismarck and Tirpitz, in 1936; and the Soviet Union, which had not previously shown an interest in having a battle fleet, began work in 1938 on three ships that would have topped 60,000 tons each if they had been completed. Aircraft carriers had become a mark of a first-class naval power, but the navies did not quite know what to do with them and kept them in limbo somewhere between the battle fleet and the flotilla, the destroyers, submarines, and torpedo boats. As late as 1934 the noted British sea power theorist, Admiral Sir Herbert Richmond, suggested that the nations who had 'indulged' in building carriers could have secured a 'more serviceable return in war in the shape of surface flotilla craft.' In the United States, the 'Two-Ocean Navy' Act of July 1940 provided for increases amounting to 420,000 tons in cruisers (which were considered to have been particularly neglected in the past), 385,000 tons in battleships, and 200,000 tons in aircraft carriers.

In the European war, both sides initially considered the navies to be potentially the most effective offensive weapon. The British government re-established the First World War-style naval blockade as an economic war, for which it predicted, publicly at least, early and decisive results against Germany. German submarines and two pocket battleships to act as commerce raiders put to sea before the war broke out; however, owing to the German Navy's concentration on building a battle fleet and to Hitler's often expressed determination to avoid a war with England, the navy only had twenty-two ocean-going submarines.

Air power appeared to act faster than either land or sea power; and air forces could take to the offensive at less human cost to themselves than armies could and strike more directly at the enemy than navies could. Since late in the First World War, the Royal Air Force's Bomber Command had, with considerable success in political circles, sustained a strategic bombing theory that gave it a claim to being the main and possibly sole British offensive force in a Continental war. In the early 1930s the US Army Air Corps had acquired a coastal defense strategic bombing mission that in early 1940 came to include offensive action against hostile air bases. Germany (in 1936) and the Soviet Union (in 1939) stopped developing strategic bombing components in their
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armed forces. On the eve of the war Bomber Command promoted strategic bombing as the mainstay of economic warfare and as itself as the potentially decisive force, predicting that it could bring Germany's war industry practically to a standstill within two weeks. Between September 1939 and May 1940, however, its plans encountered nothing but frustration, not least because of its planes designed specifically for strategic bombing had yet to make their first flights.\textsuperscript{33}

In the year and a half between the French surrender in June 1940 and Pearl Harbor in December 1941, the members of both future coalitions committed themselves to the political and military strategies they would follow into and through the Second World War. Germany and Japan believed the long shadow of the First World War had finally lifted and they were on the verge of attaining full strategic freedom. The victory in France had brought the German Navy bases on the Atlantic coast; and the Luftwaffe had gained airfields in France, Belgium, and the Netherlands that put almost the whole of England within an hour's flying time and in effect reduced strategic bombing to operational proportions. The army was convinced that with adjustments in scale, the Blitzkrieg could be applied as successfully in the Soviet Union as it had been in France. On 31 July 1940, when Hitler announced his decision to attack the Soviet Union and defeat the Red Army by 'dismembering' it in large encirclements and 'strangling it in packages,' none of the generals present objected. The navy and the Luftwaffe complained that the heavy additional commitment, particularly of industrial production, would impair their strategic operations against Britain, but the military did not voice any of the profound doubts it had raised in the previous year.\textsuperscript{34}

In Japan on 27 July, a Liaison Conference decided to 'settle the China Incident quickly and at the same time cope with the Southern Question.' An Imperial Conference on 19 September confirmed the decision on the assumption that the Tripartite Pact about to be signed would give a fifty-fifty chance of avoiding a war with the United States.\textsuperscript{35}

Although the French defeat was a tremendous shock to Britain, the Soviet Union, and the United States, it was not a revelation in the same sense that it appeared to be to the Axis Powers. It did not alter the prior assumptions pertaining to the nature of war. Blitzkrieg was taken to be primarily the effect of overwhelming mass in matériel and manpower applied to an unprepared and irresolute opponent. On the other hand, the German drive into western Europe (after the invasions of Poland, Norway, and Denmark, the last in April 1940), which seemed to demonstrate that Germany was following a comprehensive and exact timetable of conquest, spontaneously revived the Anglo-American component of the First World War coalition.

Churchill's various statements of righteous purpose and British determination to see the war through to a victory over Nazi Germany made in the dark days of May and June 1940 were the actual first step in the reactivation of the American program. At the end of June 1940 Roosevelt secured authority from Congress to stop exports of strategic commodities and to release American military equipment to foreign armies (the basis of the subsequent embargoes against Japan and of the destroyer deal and Lend-Lease). The President was more enterprising at that point than his military advisors, who

were working on RAINBOW 4, a 'worst case' plan for defending the Western Hemisphere, and had strong reservations about transferring military equipment out of the hemisphere or taking actions that might provoke a war with Japan.

By the end of the year, the Anglo-American partnership had become firm, and British strategic thinking had progressed beyond the problem of how to meet a German invasion. In the view of the Prime Minister and the chiefs of staff, the prospect of attacking the German main forces in the field on the Continent had receded into the distant future, and economic warfare had become the chief means of striking directly at Germany. The Prime Minister and Bomber Command were also coming to the conclusion that area bombing could destroy German civilian morale and possibly decide the war by itself - even though the German aerial 'Blitz' against England seemed to have demonstrated just the opposite, at least as far as British civilians were concerned. The American military, while wary of being tied to British strategy, accepted much of the British thinking in staff talks held during February and March 1941. A subsequent revision of RAINBOW 5, which had been concerned with the employment of US forces outside the hemisphere, incorporated the main principle the British had proposed - that Europe 'is the vital theater where the decision must first be sought.' It also included the war plan as projected in the conference report (ABC-1), which established the following order of priorities: (1) economic warfare, (2) a sustained air offensive against Germany, (3) the elimination of Italy from the Axis, (4) the employment of land, air, and naval forces in 'raids and minor offensives' against the Axis, (5) resistance movements, (6) a buildup for 'an eventual offensive against Germany,' and (7) the capture of positions from which to 'launch the eventual offensive.'\textsuperscript{36}

The shock of the German victory was perhaps greatest in the Soviet Union. The capitalist states were manifestly not going to wear each other out. Nikita Khrushchev wrote later, 'The most pressing and deadly threat in all history faced the Soviet Union.'\textsuperscript{37} A study done in the Soviet General Staff Academy states, 'The problem of preparing the country for war became supremely important.'\textsuperscript{38} In quantitative terms, the Soviet Union had never neglected preparedness, but the Red Army had done astonishingly badly in the Winter War with Finland that ended in March 1940. At a readiness conference in December 1940, Stalin decided the Red Army would need, at the minimum, another year and a half to overcome its deficiencies, and he redoubled his efforts thereafter to buy off Germany. The military, on the other hand, were confident that the strategic doctrine they had developed in the late 1930s - in part modeled on the French - would work. The doctrine held that armed conflict between forces as large and well equipped as the Soviet and German ones would begin as a 'creeping war' in which the initial deployment would be slow on both sides. Surprise would not be possible, and the decision would be reached through a series of defensive and offensive encounters that would give victory to the party best able to tolerate the ensuing attrition. The war plan contemplated meeting and defeating aggression at the line of the state frontier, then carrying the war to the enemy's territory, and subsequently dealing him a great defeat.\textsuperscript{39}
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Had Hitler and the German General Staff been in a position to recommend a strategy to the Red Army, they could have thought of none that would have suited them better. They agreed that they had to trap and destroy the Soviet main forces and prevent the sort of strategic retreat Tsar Alexander I had resorted to against Napoleon in 1812, but they did not have the resources in manpower or matériel to engulf the entire Soviet front. The General Staff believed a thrust north of the Pripyat Marshes toward Moscow would compel the Red Army to sacrifice itself defending the Soviet political and Russian national heartland. On that score, the army’s thinking and Hitler’s diverged. The army’s concern was to achieve a military victory; Hitler’s was with the program, and specifically the Lebensraum aspect of it. He wanted the victory, but he needed the agricultural land and mineral resources of the Ukraine and the oil fields in the Caucasus. In July 1941, when it appeared to the army High Command that the final battles were about to take shape on the line of advance toward Moscow, Hitler called a halt and diverted armor to the south toward Kiev and the north toward Leningrad. That the army was right in believing the war could be won in 1941 on the approaches to Moscow is by no means certain; that it was not going to be won there, after a two-month lapse, by the advance Hitler ordered to be resumed in October was proved in the first week of December. By December the Lebensraum aspect of Hitler’s program had also prevented the army from exploiting indigenous anti-Soviet sentiment and had helped Stalin place himself at the head of a Russian national war. Hitler’s continued insistence after 1941 that the war was fighting the war for the benefit only of the Germans, not the Russians, led him to reject the army’s proposals to recruit a Russian anti-Soviet force from among the millions of prisoners of war and deserters in German hands.

The German invasion of the Soviet Union impinged on the Japanese program as well. Although Japan was a Germany ally, the attack was more of a surprise to the Japanese Government than to the British, US, or Soviet governments, and it reopened the question of the northern and southern options. In deciding the question, the Japanese military entered on a series of miscalculations that would eventually ensure its own and the German defeat. At the Liaison Conferences in late June 1941, Foreign Minister Yosuke Matsuoka argued for striking north first because after the Soviet Union was eliminated the risks of the southern advance would be reduced. The navy, as it always had, insisted on striking south. The chance to settle scores with its old enemy attracted the army, but in the first week of September it too decided for the south. In the meantime, the American so-called oil embargo of late July had added urgency to the southern venture, and the decision was for war unless the United States accepted essentially all the Japanese demands beforehand. Having gone that far, the navy went a step farther. Knowing it could not outlast the United States in a prolonged war, it decided it had to do maximum damage at the outset and staged the surprise attack at Pearl Harbor on 7 December, thereby committing the one act that could have brought the United States into war determined to see it through at any cost. Hitler compounded the Japanese error on 11 December by declaring war on the United States, an act in which he and some of his generals saw a vague advantage in terms of encouraging the Japanese but which denoted the single advantage either of the Axis partners could have derived from Pearl Harbor, a possible heavy diversion of American effort to the Pacific.

Remarkably, the events of December 1941 sustained all programs. To the President and people of the United States, Japan and Germany stood exposed as inveterate and wanton aggressors, and the destruction of their existing political systems and military strength became the key to permanent world peace. Stalin, who was about to expand his success at Moscow into a general offensive that he believed could end the war before summer, told British Foreign Minister Anthony Eden that he was now not so great a hurry to have the second front he had been demanding and insisted on having the territorial gains he had made through his pacts with the Germans confirmed in a projected Anglo-Soviet military alliance. The Japanese ‘East Asian Co-prosperity Sphere’ was taking shape with astonishing ease and speed; and Hitler could count on another summer’s campaigning season in which to finish off the Soviet Union.

The German and Japanese Blitzkriegs reached their height and ended during 1942, and the war of attrition began. The Battle of MIDWAY in June terminated Japan’s expansion into the central Pacific and cost the navy four of its six fleet aircraft carriers and a proportionate number of its most experienced pilots. From August through November, in the sea battles of Guadalcanal, the navy inflicted heavier losses than it took, but they were losses it could not afford; in December, it retired from the southern Solomonss, leaving the US sea and land forces with a foothold inside the empire’s defensive perimeter. Stalin’s dream of an early Soviet victory vanished on disastrous battles at Kursk and in the Crimea in May and June, and the German summer offensive forced him to permit a strategic retreat in the southern sector and to share strategic decision-making power with his two best generals, Georgi Zhukov and Aleksandr Vasilevski. The Soviet retreat gave Hitler almost all the Lebensraum he had insisted he needed but overextended the German forces while preserving enough Soviet strength for Zhukov and Vasilevski to begin the counteroffensive in earnest at Stalingrad in November. American landings in North Africa and the British offensive at El Alamein also turned the tide in the Mediterranean theater in November.

The Axis Powers knew to a certainty after January 1943 that they could not win the war and that the best option open to them was to defend the territory they had taken strongly enough to force a draw from which they might still extract some profit. Hitler set about reorganizing the military parade amongst his field marshals and senior generals to the command reserve and replaced them with men who had shown promise in static defense. His own authority did not diminish; the majority of Germans had more faith in him than in any other political or military figure.

I had Hitler managed to drive the Western Allies off the invasion beaches in June 1944 – as he prepared to do after late 1943 – he might have prolonged the war indefinitely and could conceivably have altered its outcome. When he failed, he was reduced to keeping the military machine running while waiting (with the Ardennes offensive of December 1944 as an interlude) for a second ‘miracle of the House of Brandenburg,’ a split in the East-West alliance comparable to the one that had broken the Russian-French-Austrian alliance.
against the Prussian King Frederick the Great in 1763 and saved him from a devastating defeat. In Italy, after the king had Mussolini arrested on 25 July 1943, the government and military succeeded elegantly at not quite surrendering unconditionally and almost changing horses in midstream, both directly under the Germans’ noses.

Tojo lacked the national stature Hitler had built up during ten years in power and could not rely to the extent that Hitler could on the political passivity of his military. In early 1943 the jishin, the former prime ministers and some personages in the emperor’s circle, began looking for a way to remove him. After the navy took a decisive defeat in June 1944 in the Battle of the Philippine Sea and after the loss of Saipan in early July opened a breach in the empire’s inner defense line, the Diet turned against him and his military colleagues stood aside. Tojo resigned on 18 July, but his successor acquired the impossible mission of seeking a way out of the war without conceding defeat. Although the army no longer had a strategy to promote, it, through Tojo as its representative in the jishin, refused until the morning of 14 August 1945 to tolerate a surrender.  

As of January 1943 the Axis could not secure a victory on the terms its members had set for themselves, but its early defeat was far from being a foregone conclusion. Neither Germany nor Japan had suffered a disabling setback, and both had manpower and materiel resources they could still bring into play and the fruits of their initial successes to exploit. The anti-Axis coalition had turned the Axis tide but had yet to raise its own.

At Stalingrad the Soviet forces vindicated and reconformed the strategy with which they had entered the war. They brought the enemy to a halt – after seventeen months of fighting a thousand miles deep in Soviet territory – and began driving him back. While Stalin did not again indicate in an official way that he could get along without a second front, his Red Army Order (23 February 1943) order suggested that the Soviet forces were quite capable of defeating Germany by themselves. Zhukov, as First Deputy Defense Commissar and Deputy Supreme Commander-in-Chief, became the first military professional to be installed in the chain of command above the operational level. The authority he wielded, however, was not inherent in the post he held but dispensed by Stalin, who after the summer of 1943 kept him out of Moscow in field commands for the rest of the war and dropped him from the Statek of the Supreme High Command altogether in February 1945.

Although they appeared enigmatic and sometimes capricious to the Western Allies, the Soviet goals and strategy were consistent and simple. The goals, in keeping with the program, were to expand the area of Soviet direct control as much as could be done without confronting the Western Allies and, beyond that, to secure the greatest possible influence in the postwar restructurization of Europe and East Asia. As an offensive strategist, Stalin was cautious and thoroughgoing, a believer in the broad, frontal advance who judged success by the amount of territory taken and regarded the occupation of territory as necessary to the reintegration of the Soviet system within its own boundaries and to its extension abroad. After late summer 1943, when he was sure he had the permanent strategic initiative against Germany, his main concern was to maximize the Soviet share in the victory.

At the Casablanca Conference in January 1943 the Western Allies embarked on a second round of debate over the strategic premises set down in the then two-year-old ABC-1. In the weeks just after Pearl Harbor, at the ARCADIA Conference in Washington, the spokesman of the US Joint Chiefs of Staff, General George C. Marshall, had failed to persuade his British counterparts, or Churchill, or Roosevelt to abandon the open-ended, peripheral aspects of the strategy developed in ABC-1. The subsequent decision to expand the campaign in North Africa had scotched the American planners’ hopes for a full-fledged second front on the Continent in the spring of 1943. When Marshall failed again at Casablanca and the political chiefs approved further operations in the Mediterranean, the prospect of coming to grips with the German main forces appeared to be receding into the distant future.

Casablanca, however, was the turning point in the Western Allies’ strategy. The Americans’ armed strength would soon outweigh the British in all respects; consequently, so would their voice in the partnership when they chose to make it heard. Roosevelt’s announcement of the unconditional surrender formula was equally important for the further conduct of the war and perhaps more important in the longer run. It gave the American armed forces the most unequivocal strategic objective possible in war and dissociated them and the US government from all military-strategic considerations not essential to the Axis’ defeat. The total destruction of German and Japanese military power and of the political systems from which it derived would be if not the whole answer to the problem of world peace and stability, then all the American forces would be required or permitted to seek through military action. Consequently, the decision to mount Operation OVERLORD taken at the Tehran Conference in December 1943 terminated US strategy making for Europe, and a year and a half later, when the war against Germany ended, the United States was not notably better prepared militarily or psychologically than it had been on eve of the Second World War to deal with the situation it then faced.

The war in the Pacific was predominantly an American concern and for that reason much more tractable strategically than the European war. Aside from imposing a strong, at times onerous, commitment to the Europe-first principle, the alliance functioned loosely in the Pacific. The primary British interest was in the area of the Indian Ocean, the Red Sea, and the Persian Gulf; the American in the western Pacific. Had the Japanese skill and determination in individual engagements from Guadalcanal to Okinawa not been overrated as evidences of national endurance, had Nationalist China and the Soviet Union not been overvalued as potential allies, had the army and navy not insisted on maintaining separate shares in the enterprise, and had a less conspicuous figure than General Douglas MacArthur held the command in the subsidiary theater, the conduct of the war in the Pacific could have been a more economical of effort. As it was, American strategy in the Pacific defeated Japan more expeditiously than the combined strategy in Europe defeated Germany.

Advances in science and technology, the trend toward total war, and doubts about the battlefield as the arena in which conflicts could or ought to
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be resolved stimulated competition in the Second World War to obtain decisive results by means other than conventional strategies. The object, in short, was to develop superweapons capable of achieving independent strategic effects.

The US industrial base was one such superweapon and, in the context of the war then being fought, the most effective of them all. It drove the Japanese Navy to the defensive in the Pacific and frustrated the German submarine offensive in the Atlantic, and it enabled the United States to maintain its own forces and support those of its allies around the world. It was an authentically powerful weapon, and ally and enemy alike perceived it as such, but it did not wholly vindicate the President's and other advocates' confidence in it as the ultimate weapon. The assumption that quantity must prevail left the American troops to fight with automatic weapons and artillery of late-First World War vintage and tanks embarrassingly inferior to the German and Soviet types. The preponderance of Lend-Lease production, of which approximately three-fifths went to the United Kingdom account, did not, as it should have done in theory, bring larger British forces into the field. Instead, it apparently enabled the British government to devote more of its domestic industrial capacity to its own superweapon, the heavy bomber. 30

The search for superweapons, in the literal sense of the word, dated back to the technological revolution of the late nineteenth century. During the First World War, experience with chemical and submarine warfare and aerial bombing had shown that to qualify, a weapon had to be able to inflict intolerable damage against which the victim could neither defend himself nor retaliate in kind. The submarine came close to meeting the requirement to do intolerable damage in both world wars but was itself vulnerable. The bomber, which could not be adequately tested in the strategic mode during the first war, received a full test in the second, in which it inflicted massive but not decisive damage. It turned out to be a slower acting offensive means than its advocates had expected, and the strategic premises governing its employment proved to have been overly optimistic on the scores of both its capabilities and the enemy's vulnerability. The two weapons that could potentially have met all three requirements for superweapon status, the V-2 rocket and the atomic bomb, came into the war after the issue had been decided (the V-2 because it had been persistently overlooked at the political level). Although the method of inducing nuclear fission was a German discovery, its military application was also neglected there, among other reasons, one suspects, because nuclear physics had been something of a Jewish scientific preserve.

It may be that the US industrial base and the strategic bombing campaigns nevertheless performed a vital intangible function, regardless of the degree to which they fulfilled concrete strategic expectations, by giving credible, visible evidence of power equal to the war's demands. In that sense, the Blitzkrieg and Hitler's war leadership would qualify as Axis superweapons. Their dazzling successes in the early years gave the German forces an aura of invincibility, brought Italy, Japan, Finland, Rumania, Hungary, and Bulgaria into the war as German allies, and undoubtedly had much – perhaps almost everything – to do with keeping the German armed forces fighting until 1945.

Operational Effectiveness

That the war then begun was going to give a scope to operational art undreamed of in the First World War was not apparent in September 1939. After twenty years of speculation on the potentials of mechanization and motorization, air power and armor, the defensive, which seemed to be the principal beneficiary of technological progress past and future, dominated operational thinking. On the very eve of the war, B. H. Liddell Hart, who was widely regarded as the world's outstanding authority on military affairs, wrote, 'The dream of victory in modern war has nothing beyond mere speculation to sustain it. And it is faced by the hard fact of the long-proved superiority of the modern tactical defensive.' 31 Professional military opinion refused in principle to accept the idea of an unwinnable war, and doctrine everywhere upheld the primacy of the offensive. The Soviet field services regulations of 1939, for instance stated, 'If an enemy unleashes a war on us, the Workers and Peasants Red Army will be the most offensive army of all the armies that have ever existed.' 32 Nevertheless, for all commands and staffs the superiority of the offensive was indeed the hard fact, and all believed it would determine whether or not victory could be attained and how the war would be fought.

The operational problems and prospects were taken to be the same for all parties. Mass armies and masses of matériel would create deep defenses; hence offensive operations would also have to be deep, going to depths three or four times the greatest achieved in the late period of the First World War, which was about 35 miles. Movement would be sporadic, a matter of breaking through successive lines. Everybody would try to carry the war to the enemy's territory in order to impose the greater destruction on him; but where border fortifications existed – the Maginot Line and the German West Wall, for instance – they were expected to provide security against such incursions. The fortified lines and the general superiority of the defense appeared also to have negated the old maxim 'The thrust is the best parry' and to have conferred a positive advantage on letting the other fellow attempt the first blow.

Although the greatest single advance since 1918 was clearly in the area of mobility, in the sense of being able to cover long distances at high speed, it was taken to have more important applications off the battlefield than on it. Forces could be deployed and shifted rapidly, but once engaged, because of the infantry's preponderance, were expected to move at the infantry speed of 4 to 6 miles a day, to which armor might add another 3 or 4 miles under optimum conditions. Sustained forward movement was hardly expected, and a reversion to outright positional warfare seemed to be about as likely as the war of maneuver all the armies wanted to fight. Maneuver would consist in the main of using lateral mobility to keep operations fluid. Since neither side could go very far or very fast as long as both were in good shape, the
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prudent commander would husband his forces' strength and waste the enemy's exactly as Ganechin, whose plan was an impeccable example of the then current operational doctrine, proposed to do in May 1940. On the German side, Leeb had put it all in a sentence in his work on defense published three years earlier: 'It accrues to operative and tactical defenses to exhaust the enemy, so as either to be able to resort to the offensive, or to prevent him from attacking where he strives for a decision.'

The notion of combined arms, accepted everywhere in principle, was in a state of doctrinal flux. The new weapons, airplanes and tanks, had proved difficult to integrate into predominantly infantry-oriented operational conceptions. Already during the First World War, both weapons had engendered pressures for their establishment in separate branches within the armed forces, which had brought the Royal Air Force in 1917, the French Armée de l'Air in 1919, and the Luftwaffe in 1935 into being on equal footing with their respective armies and navies. Armies saw infantry as the main weapon and aircraft and tanks as support weapons on a par with or as substitutes for the principal traditional support weapons, artillery and cavalry. Air forces regarded themselves as much more than auxiliaries to the ground forces, and armor's proponents argued that it was the rightful main weapon and infantry the support.

Strategic bombing gave air forces a wholly independent operational sphere of their own but one in which the superiority of the defensive figured more importantly than in any other, one for which none of them was anywhere near ready, and one which would add a new dimension to a war that already threatened to leave nothing to spare from the ground operations. Bomber Command and the GHQ Air Force kept the strategic bombing option open in Britain and the United States. The Armée de l'Air was subordinated to the ground forces commander at the outbreak of the war. The Luftwaffe, having restricted development to light bombers after 1936 (because they could be built faster and more cheaply), entered into operations as an equal partner with the army by attaching — but not subordinating — 'air fleets' to the army groups. The Soviet Union, which had the only heavy bomber fleet in existence and the only modern heavy bomber actually in existence, apparently following the French example, attached and subordinated all of the Red Air Force's combat elements (including the heavy bombers) to the army field commands at the army group and, occasionally, lower levels.

Combined arms as joint action by the armed forces was understood to be primarily a strategic conception. Land power and sea power, particularly, would jointly serve national policy, but each would operate according to its own principles in its own sphere. Navies had fewer doubts about their operational effectiveness — provided they had the ships — than either of the other services. Although the First World War 'fleet-in-being' theory had raised a charge that battleships were to admirals as cathedrals were to bishops, namely, status symbols, the battleship dominated naval operational thinking everywhere. Everywhere fleets were built or, as in Germany and the Soviet Union, being built around battleships. The German Navy's desire for open-water ports for the fleet it proposed some day to have was instrumental in producing the war's first joint operation, the invasion of Norway in April 1940, which, ironically, also began the surface fleet's decline. Whether carrier aircraft could have any more than a nuisance effect on battleships remained entirely in doubt until November 1940, when planes from the British carrier Illustrious sank three Italian battleships at their moorings in Taranto harbor.

After June 1940 the British, Soviet, and American armed forces assimilated the lessons of the French defeat without fundamentally altering their previously held operational conceptions. Blitzkrieg appeared to them to be no more than an effect of mass coupled with mechanization and motorization. Although the Allies had possessed manpower and matériel superiorities in France and Belgium and in Norway also, the defeats were taken to have demonstrated that they had sorely misjudged the German quantitative lead. Since the disappearance of the Western Front had vastly strengthened the German position on the Continent, assured superior weight was thought to be the absolute prerequisite for future operations against them.

The British interim requirements were to rebuild and expand their forces, wear down those of the Germans, and under no circumstances risk another Dunkirk. ABC-1 converted the second into specific tasks — strategic bombing, the naval blockade, and operations on the European periphery — and, in keeping with the last task, left a direct confrontation with the German main forces in abeyance. The British and American air forces believed strategic bombing was the fastest, the most effective, and probably the decisive means for bringing offensive mass to bear directly on Germany. The German failure in the Battle of Britain (August-November 1940), in the British and American view, confirmed their respective theories of strategic bombing, which agreed in emphasizing weight in aircraft, armament, explosives, and effort.

The Soviet armed forces were ready by June 1941 to meet a German invasion on at least equal quantitative terms. The western frontier military districts, which would become fronts (army groups) at the outbreak of hostilities, had 2.9 million men, as many as 5,500 medium and heavy tanks, and at least 1,540 latest model airplanes. (The Soviet figures do not include additional troops, tanks, or aircraft in or adjacent to the military districts but under Defense Commissariat control.) The German Barbarossa force consisted of 3.05 million troops, 3,350 tanks, and 2,770 aircraft. A full third of the Soviet tanks were T-34s and KV-1s, more powerful types than any the German Army had in the first eighteen months of the war. In accordance with the 'creeping war' theory, the Soviet operational plans assumed a hiatus of up to three weeks between the declaration of war and the first actual battles. During that interval, the forces in the military districts, as the first strategic echelon, would cover the border and prepare to repulse the enemy. Meanwhile, a second strategic echelon would form farther back and be ready to join in delivering 'an answering blow' and carrying the war to the enemy's territory. The military commands believed they could be neither taken by surprise nor overwhelmed and movement would be slow in the prolonged war of attrition that would ensue. Stalin, who remembered that the Red Army had needed three and a half months to defeat little Finland and that a war game based on the operational plan run in January 1941 had resulted in a red (Soviet) defeat, would by far rather not have had the matter put to the test.
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The German High Command was convinced that Blitzkrieg had revolutionized operational art, allowing operations to be conducted on larger scales at higher speeds with smaller commitments in human and material resources than had formerly been imagined possible—that is, in effect, technique could be substituted for mass. A comparison of the forces and weapons allotted to Barbarossa with those employed in the 1940 campaign in the west graphically illustrates the change in German thinking—and, of course, some other things as well, namely, a low opinion of the Soviet military capability and the limitations of German resources. The numbers of divisions deployed had been 141 in the west and were 210 for Barbarossa, an increase of about 50 per cent in numbers but only a bare third in combat-effective strength, because 24 of the Barbarossa divisions were security divisions composed of over-age and limited-service men who could not be used at the front. The number of panzer groups (armies) was expanded from one, in the west, to four and of panzer divisions from ten to seventeen, but the total tank allotment rose only by 971. Consequently, the quadrupling of the panzer groups was accomplished with a 70 per cent increase in panzer divisions, a 35 per cent increase in tanks, and an about 20 per cent decrease in the number of tanks per division.56 The Barbarossa force had less artillery (7,146 pieces) than had been available in the west (7,378 pieces), and the air force assigned 357 fewer combat aircraft.57 The German High Command apparently believed that the Blitzkrieg's inherent potential would almost of itself be sufficient to sustain the shift from a regional to a continental scale.

Although not recognized as such outside Germany, the Blitzkrieg was nevertheless an authentic new operational form, and even though it failed in the Soviet Union, it would prove to be the most sophisticated and effective of those employed in the war. Although the official Soviet view holds that the Blitzkrieg was doctrinally unsound, a recent Soviet study states:

The fascist forces' big strategic-operational successes in the early operations resulted from improvements in and new forms of offensive action. Generally speaking, these methods of action were not entirely new, since they had been dealt with in the military literature... But the application of them in practice on a broad scale and in close combination with each other took the countries on the defensive by surprise.58

True, Blitzkrieg did not actually come into being until Barbarossa. The Polish and French campaigns were transitional, the technique in both being that of the hammer and anvil—of a maneuver element, the hammer, acting in conjunction with a solid, slower moving and holding mass, the anvil, to accomplish a single envelopment. In Barbarossa, there was no anvil: movement entirely supplanted mass. Concentration, coordination, economy of force, and maneuver combined to achieve mobility. The double envelopment—the Zangengangriff (pincers movement), using two maneuver elements to encircle the enemy—replaced the hammer and anvil. The hallmark of the Blitzkrieg henceforth was the Kesselschlacht (battle of encirclement).

The encirclement in the form of the double envelopment had been recognized since the Battle of Cannae in 216 BC as the purest form of annihilation—and the most difficult to achieve. Before the First World War, the chief of the German General Staff, Count Alfred von Schlieffen, had studied the many attempts made in the eighteenth and nineteenth centuries and found only one to have succeeded, the Battle of Sedan (1870) in the Franco-Prussian War. Schlieffen had concluded that the encirclement would always be a rarity because it required the highest order of skill to execute but was so easy to evade or frustrate that the victim literally had to cooperate to make it succeed. It needed, he said, a Hannibal on the one side and a Terentius Varro on the other.59 Schlieffen's own single envelopment, attempted in 1914, had further demonstrated that the spatial scale and degree of mobility required to make either type of envelopment operationally effective in modern war lay perilously close to the absolute limit of logistical capability. The German General Staff knew this to be nowhere more true than in a war against the Soviet Union.

In 1941 Stalin played Terentius Varro, tying the Red Army down in stationary fronts and therewith allowing the Germans to perform seven great encirclements: Bialystok, Minsk, Smolensk, Uman, Kiev, Vyzhma, and Bryansk. Those, however, were not enough to decide the war. It will never be known by how much they fell short. In the last, the battle for Moscow, the one Stalin and the Russian people would certainly have considered the most likely to be decisive, the Blitzkrieg, delayed first by Hitler's August excursions on the flanks and then by the October mud, broke down in the -40° cold of December.

The Blitzkrieg died in the summer of 1942. Stalin, in desperation, allowed his army groups in the Ukraine to retreat, and the German envelopments came up empty. Hitler, as he had the year before, changed his operational plan in mid-course. Canceling his original directive, which had provided for a phased offensive, he ordered simultaneous thrusts to the Volga River at Stalingrad and into the Caucasus. By August his two forces were advancing out of the great bend of the Don River on diverging lines and outrunning their supplies. On the morning of 4 September, German Sixth and Fourth Panzer Armies closed a ring around Stalingrad on the west and began a two-and-a-half-month battle the likes of which had not been seen since Verdun in 1916.

The Red Army seized the initiative on 19 November 1942 at Stalingrad and held it, with the exception of an interval from February to July 1943, from then to the end of the war. The Soviet literature ranks the encirclement of the German Sixth Army at Stalingrad as 'the Cannae of the twentieth century' and as 'the first example in the history of war of such a powerful enemy grouping, equipped with the latest technology, being encircled and totally liquidated.' It also maintains that the double envelopment was the Red Army's 'main form of maneuver' in the operations conducted from November 1942 to May 1945.60

As a prestige victory and in its psychological effects, Stalingrad can no doubt be compared with Cannae. It was, like the concurrent sea battles around Guadalcanal and the landings in North Africa, a visible demonstration that the balance of forces had shifted against the Axis. Its ranking as a 'first' in history is questionable, even if one accepts the dubious Soviet claim...
that most of the troops caught in the earlier German encirclements escaped. With Hitler's collaboration, the encirclement at Stalingrad was, in fact, elegantly executed, but the battle took so long to complete that it almost vindicated Hitler in his role as Terentius Varro. By 31 January 1943, when Field Marshal Friedrich Paulus surrendered in Stalingrad, the German main forces in the Ukraine and the Caucasus were in a position to evade the worst of the follow-up blows the Soviet command dealt them.

The double envelopment was not a reliable instrument in the hands of the Soviet forces. The plans for the winter of 1942–3 proposed to use it in a Blitzkrieg-style offensive that was to have pushed the front in the south and center west to the Dnieper River and in the north, south, and west to the Narva River-Lake Peipus line by March 1943. Of ten envelopments projected, three were completed, the one at Stalingrad and two substantially smaller ones carried out against the German Second Army and the Hungarian Second Army in late January 1943. Four failed completely, and three made substantial territorial gains but also brought on reverses that restored the initiative to the Germans. To clear the entire area up to the Dvina River and Narva River-Lake Peipus lines took the better part of another year. During its summer and fall offensives in 1943, the Red Army did not attempt any envelopments. The Soviet Military Encyclopedia lists nine envelopments completed in 1944 and 1945, but all of those resulted from opportunities that occurred during operations in which they had not been planned, and one, the encirclement of German Army Group Center east of Prague, was executed after V-E Day.64

While the Soviet accounts frequently allude to the double envelopments as the Red Army's main form of maneuver and always claim a complete mastery of the technique, the envelopment actually appears only as an incidental feature of the operations they describe. From the summer of 1943 on, Soviet offensive operations were conducted on broad fronts, and the single or 'salient' thrust was the main form of maneuver, a reversion, with more powerful and mobile forces, to the kind of deep penetration developed late in the First World War and incorporated into the standard interwar operational doctrine. The object was to break into the enemy's front deeply enough to compel him to take all or a large stretch of it back. Envelopments that might occur as results of multiple thrusts interacting with each other would be incidental to the grand design, which was to repeat the sequence of breakthrough and advance until the enemy was exhausted or until, as in fact happened, he simply ran out of space.65

The Western Allies' development of operational doctrine was more diffuse and discontinuous than either the German's or the Soviet's. Operational techniques on the ground were the predominant means by which the German and Soviet armed forces brought their strengths to bear against the enemy. The Blitzkrieg gave the German forces whatever chance they may have had for a victory, and the skills and experience it produced enabled them to stave off the defeat as long as they did. The Soviet forces conducted their defensive and offensive operations in ways calculated to exploit their quantitative advantages in manpower and matériel — and to compensate for their shortcomings in other respects. Moreover, after 22 June 1941 the German and Soviet main forces were continuously engaged in conducting operations on a large scale.

On the other hand, the form in which operations were conducted was not the main compelling consideration in the Western Allies' conduct of the war. For them, when and whether they came to grips directly with the enemy main forces was a matter of choice, not absolute necessity. They could look to alternatives. ABC-1, for instance, was nothing but alternatives. As late as the winter of 1943–4, while OVERLORD assumed an opposed advance into Germany, the RANKIN plans contemplated other possibilities ranging from a partial to a total German collapse before the invasion, TALISMAN/ECLIPSE provided for a German collapse after the landings, and strategic bombing sustained a vision of victory by other means. The term operation also had a somewhat different meaning for the Western Allies than it did for either the Germans or the Russians. An operation was taken to be essentially an expedition, a self-contained undertaking the most crucial parts of which were the buildup, the landing, and the secure lodgment — in effect a means of dividing the war into manageable pieces each of which could be dealt with, after the initial requirements were satisfied, as its particular circumstances required. Furthermore, the Western Allies' operations were combined ventures in which national objectives, interests, sensitivities, ambitions, and weaknesses weighed so heavily that compromises were likely to prevail over the technically more effective courses each of the partners advocated separately.66

In the Pacific war two conditions enhanced the US armed forces' effectiveness: the absence of combined operational commands and the Japanese forces' loss of mobility. After mid-1942 the Japanese ground forces were locked into a war of position in island fortresses, and the navy's surface fleet, which was to have supported them, could not do so in the face of superior carrier- and land-based air power. The idea of unified command in operations requiring both land and sea forces was, moreover, entirely foreign to the Japanese Army and Navy. Neither the US Army nor the US Navy doubted the necessity of unified command, and even though they haggled ceaselessly over which of them was to exercise it, they managed, in the heat of that intramural contest, to keep the war itself in sight. In the Pacific as in Europe, compromises had to be made, but those mainly concerned questions of precedence and were arrived at within stable frameworks of national objectives and operational principles.67

During the Second World War, air power conclusively demonstrated its entitlement to operational co-equality with land power and surface sea power. The Blitzkrieg proved that properly coordinated joint operations, autonomous air power substantially enhanced the effectiveness of both air and ground forces. The British established air commands in North Africa in 1941. In May 1942 the Soviet Air Force began organizing the air elements attached to army groups into air armies modeled on the German air fleets. The combined commands in North Africa and the Mediterranean applied the British system also to American air elements, and the US Army's FM 100–20, Command and Employment of Air Forces, published in July 1943, recognized air power and land power as 'coequal and interdependent.' Although naval
doctrine continued to regard the surface fleets as the main battle components in the war at sea, the battles of Midway and the Philippine Sea showed that battleships could not seek a decision without air support.

On the other hand, a gap between strategic bombing theory and effective strategic bombing operations proved difficult to bridge. Theory required bombing to decide the war either by destroying the enemy population's will to resist or its ability to produce war matériel. The Luftwaffe failed at both in succession in the Blitz against England in 1940–41, raising questions about the objectives' feasibility. The Royal Air Force Bomber Command and the US Army Air Forces, assuming that a larger effort was required (see also two paragraphs below), combined the two objectives in the round-the-clock operations begun in 1943 and conducted to the end of the war. German civilian morale withstood the assault at least well enough not to hasten the end. The German military's main concern after 1943 was the effect that worry about their families was having on the troops in the field. The most effective period in the strategic bombing offensive came in the last year of the war, after the war's outcome had been decided on the ground. Even so, although German industry performed erratically after the spring of 1944, fighter aircraft production and armored vehicle output reached wartime peaks in September and December 1944, respectively. Economic collapse did not begin until late 1944 and did not become general before the spring of 1945. During that interval, it was no longer possible to distinguish between the operational effects of the strategic and the tactical air forces, since nearly all German targets were also within the range of the latter. In the East, strategic bombing was relatively more effective. It may have enhanced Japanese susceptibility to the atomic bombs and therewith have undermined the Japanese will to stay in the war, but the blockade on the seaward approaches to the home islands undoubtedly did as much or more to cripple the Japanese war economy.  

The outstanding, most expensive, and last to be mastered lesson of the war in the air was that air superiority was the operational sine qua non. The concept, as old as air power itself, conflicted with air forces' offensive orientation, which required air power to be brought directly to bear in some form on the ground. In its own element, the airplane was taken to be a defensive weapon incapable of achieving more than local and transient advantage over the enemy. Theory regarded the fighter as a necessary and useful weapon but always secondary to the bomber, air-against-air operations as a diversion preferably to be imposed on the enemy, and air superiority to be attainable as a by-product of the bomber's direct action.  

War experience, which in this instance the air forces were slow – and reluctant – to assimilate, showed that direct action was more properly to be regarded as a by-product of air superiority and that air superiority by itself could be more effective than direct action. In 1940 the British and American air forces overlooked the root cause of the German's failure in the Blitz, the inability to get air superiority, and attributed it, in the first instance, to the Luftwaffe's bombers being too lightly armed and, in the second, to their inability to lift sufficient weight of explosives. The Germans, on their part, expended much effort throughout the war on retaliation as the answer to the 

strategic bombing against which they could have secured greater and possibly decisive success if they had brought their fighter production to the level it reached in September 1944 a year earlier. As it was, the US Army Air Forces' daylight offensive had to wait on the P-51 Mustang, and the whole strategic offensive did not become reasonably cost effective until the Allied air forces had near total air supremacy. In the Pacific, air superiority counted more heavily in the Japanese Navy's defeat than direct action did, and the strategic bombing offensive benefited more from the Japanese Air Force's relative ineffectiveness by day and complete inactivity at night than from the B-29s' improved armament.  

Tactical Effectiveness

The aphorism that generals are always ready to fight the last war, although it gained considerable currency later, was only tangentially applicable at the outset of the Second World War. The military commands believed that tactically as well as operationally the war would repeat the First World War pattern on a scale that would make them, if anything, less rather than more able to manage it effectively. Deepened defenses would necessitate deeper offensives, but whether deep penetration could be achieved against ferroconcrete fortifications or even against entrenched infantry was totally in question. The Spanish Civil War (1936–9), in which the Loyalists' untrained militia had fought the Spanish Foreign Legion and a good part of the Italian Army to a near standstill for almost three years, appeared to indicate that the answer was likely to be in the negative. Maneuver was the great desideratum; positional warfare appeared to be the greater likelihood. All tactical doctrine emphasized the offensive as the only way of securing a decision on the battlefield or in the war, but as a practical matter, the initial advantage seemed to lie heavily on the side of the tactical defensive and the most favorable progression seemed to be from the defensive to the offensive – after a certain and possibly sustained interval.  

Rearmament in the 1930s had centered on the rebuilding of mass, conscript ground forces, and armies ranked the infantry as the indisputable queen of battles. Air and armored forces continued to seek co-equality and tactical autonomy, as they had since late in the First World War, but only the German Luftwaffe fully succeeded – mainly because its commander-in-chief, Hermann Goering, was also Hitler's designated political heir and he and his service, therefore, could not be subordinate to any other service command. All armies and/or air forces had experimented off and on with parachute troops, but only Germany and the Soviet Union had activated airborne forces. The US Marine Corps, looking ahead to a potential war in the Pacific – and at landing techniques the Japanese had used in the China Incident – had developed an amphibious doctrine but lacked the landing craft to make it workable.  

As in the First World War, combined-arms doctrine designated the infantry as the main arm and the others as its auxiliaries. US Army doctrine in 1939 stated, 'As a rule, tanks are employed to assist the advance of infantry foot
troops, either preceding or accompanying the infantry assault echelon. As late as April 1942 U.S. Army tactical air doctrine stated that the most important target at a particular time would usually be that target which constitutes the most serious threat to the operations of the supported ground forces and assigned the ‘final decision as to priority of targets’ to the ‘commander of the supported unit.’ Later in 1938 the German Army High Command had merged its armor, motorized infantry, and cavalry into an inspectorate of ‘mobile troops.’ Guderian, who was appointed inspector general, believed that the High Command’s purposes were to deny armor separate status, keep it available for parceling out to the infantry, and (because he was armor’s strongest advocate) exclude him from direct influence in war planning. The Soviet 1936 Field Service Regulations, while alluding to some forms of independent ‘strategic’ air and armored operations, had stated, ‘The infantry . . . decides the outcome of the battle. Therefore, other types of forces operating jointly with the infantry are carrying out their missions in the interests of the infantry.’ The 1939 revision of the Field Service Regulations designated that the air mission was solely to reinforce the ground forces ‘in the direction of the main effort.’

Armour’s tactical status was vague. The German Army, which had activated three panzer divisions in 1935, had completed only two more by the end of 1938 and had another half-built when the war broke out. The Soviet Army dismantled its large armored units, four mechanized corps, in August 1939 and reassigned their components to the infantry. The U.S. Army and the British Army were engaged, as they had been for several years with very limited means, in programs to create separate infantry-tank and mechanized cavalry corps. The tank was considered indispensable as a confidence builder and source of fire support for the infantry and a more mobile and durable mount for the cavalry, but the antitank gun beclouded its future as an independent offensive weapon. Marshal Mikhail Tukhachevsky, who had promoted the development of the Soviet mechanized corps in the early 1930s, had predicted shortly before his death in 1937 that armored forces would have to be prepared to sacrifice one or more tanks per enemy antitank gun and that single infantrymen armed with small-caliber antitank rifles would be able to oppose tanks on equal terms.

In the Polish and French campaigns, the panzer division emerged as the key component in the Blitzkrieg revolution and brought a new element onto the tactical scene: the self-contained combined-arms team, which joined infantry, armor, and air power to achieve offensive mobility. The arms supported and enhanced each other by concerted exploitation of their individual intrinsic qualities: the infantry’s staying power and capacity for close-in engagement, armor’s battlefield mobility and firepower, and the dive bomber’s ability to outrange the heaviest artillery while matching it in accuracy and effectiveness of fire. Existing doctrine—German included up to the start of the Eastern Front—was based on the assumption that mobility, if it materialized at all, would take the form of pursuit in the wake of the enemy’s retreat. The interval between a successful breakthrough and the defense’s recovery. The interval between a successful breakthrough and the defense’s recovery. The interval between a successful breakthrough and the defense’s recovery.
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They generally could not be relied on to put sophisticated plans into effective action. The Stalingrad offensive, for instance, which was the kind of operation German army groups handled routinely, required two and one-half months' advance preparation that drew almost the entire Red Army High Command into the field. The same was true of the two other great showpiece battles, those at Kursk in July 1943 and against Army Group Center in July 1944. The troops provided sustained numerical superiority but declined progressively in quality after 1942 as replacements had to be drawn from the over-age and under-age groups and from the non-Russian-speaking peoples, who often also did not share the Russian national dedication to the war.

Although Zhukov, Vasilevsky, and some others perhaps preferred the double envelopment, the Red Army's tactical capabilities found their most effective as well as most frequent application in the salient thrust, the raskejaysichiy udar (literally, cleaving blow). It required repeated frontal assaults and breakthroughs, usually did not prevent the enemy from salvaging the better part of his troops and equipment, and probably on average cost the attacker more heavily than the defender. However, it also gave opportunities for mass employment of infantry, armor, and ground attack aircraft and did not require precise timing or coordination; and it sometimes benefited enormously from Hitler's insistence on a rigid defense, which on several occasions transformed what should have been just losses of ground into encirclements. The raskejaysichiy udar was not failure-proof. Zhukov's attempt in April 1945 to break through the Oder River line to Berlin conclusively proved that; but it did not expose tactical shortcomings in the way less than completely successful envelopments generally did— as with the German escape from the Falaise Pocket in France in August 1944, for instance—and it always accomplished something. Consequently, it served the Soviet strategic interest in two equally important ways: it provided the setting in which the Soviet forces could perform at the highest level of tactical effectiveness; they could consistently maintain, and it enabled them to create an illusion of mobility prepossessing comparable to that which the Wehrmacht had enjoyed in the heyday of the Blitzkrieg. 77

The Western Allies and the Japanese were less continuously and compellingly concerned with perfecting land-battle tactics than the Germans and Soviets were. Their and their main enemies' territories were not contiguous, and they were sea powers, which on the one hand gave them a form of mobility and means of bringing offensive strength to bear that neither the Germans nor the Soviets possessed, and on the other tended to check the evolution of their tactical doctrines. Six months into the war, the Japanese no longer had any choice other than to fight a war of position in isolated strong points, which suited their preference for close engagement but reduced their offensive capability to zero. In June 1944 the British and Americans had to plunge into a war in which, for the previous three years, they had been virtual bystanders basing their preparations on limited direct experience and some-what hazy analyses of German performance. Moreover, neither they nor the Japanese had expected the outcome either in Europe or in the Far East to depend in the main on their forces' performance in land battles. The British had counted on air and sea power, the Americans on industrial power, both on the Soviet forces to weigh more heavily against the Germans; the Japanese had relied on their navy to decide the Pacific war.

The Americans in the Pacific and both they and the British in Europe combined land, sea, and air power to stage amphibious assaults on island and mainland targets that gave a compelling display of their ability to exert military power at will on a global scale. The distances and speeds sometimes achieved over water also lent a Blitzkrieg aspect to their amphibious operations—an aspect, however, that as often as not terminated at the beachhead. An outnumbered and outfought enemy outfought the landing forces briefly at Salerno, for three months at Anzio, and for the better part of two months in Normandy. In the Pacific, at Tarawa, Peleliu, Iwo Jima, and Okinawa, tremendous superiorities in all arms could not keep the Japanese from calling the tactical tune on the ground and imposing what in a longer term and on a larger scale would have been prohibitive casualties. 78

Mobility was the common goal of all Second World War tactical doctrine, the war's outstanding contribution to military art and its most durable legacy. It was the principal combined-arms achievement and, after June 1940, the first consideration in tactics and operations. By 1945 the Soviet forces and those of the Western Allies had matched the German rates and depths of advance. Nevertheless, the German, Soviet, and American experience indicates that the impressive performances all parties eventually gave are perhaps not the most significant indicators of military effectiveness in the development and conduct of mobile warfare during the Second World War.

The panzer division, as a combined-arms team of armor and motorized infantry, was the main German mobile component throughout the war. In the Blitzkrieg phase, the Luftwaffe air fleets added air superiority in the zone of operations and their Ju-87 dive bombers functioned as a third element in the combined-arms team (a role they continued to play with some regularity on the Eastern Front until late in the war). Germany also initially possessed the only fully organized and transportable airborne force, which appeared in Crete in May 1941 to have added a new dimension to mobility but did not subsequently figure again in a major operation in its designated role.

After December 1941, as the German hold on the initiative progressively weakened, the panzer division underwent a forced conversion into a defensive weapon of last resort. In the character of a 'fire brigade,' it exercised its mobile capability increasingly in lateral moves behind the front from one hot spot to another, and its armored elements frequently became intermingled with regular infantry in Kampfgruppen (battle groups), less than division-size groupings set up to fill out the front line. Moreover, the appearance in steadily growing numbers of the heavily armored Soviet T-34 and KV tanks and the impotence of the German infantry's antitank weapons against them necessitated mounting higher velocity guns in the German tanks; this made them tank destroyers and tended to further disperse the panzer divisions since, as one German report put it, 'everybody had to have a share.' 79 In the summer of 1943, Soviet air power, demonstrated in and after the Battle of Kursk, Anglo-American landings in Sicily and Italy, and the strategic bombing offensive against the Reich burdened the Luftwaffe's fighter arm to the
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point where it could henceforth no longer make good a bid for air superiority anywhere.

General Linde, whom Hitler appointed inspector general of armored troops in February 1943 and who held the post until he became chief of the Army General Staff in August 1944, believed in the mobile defensive. He proposed to reassemble the panzer divisions; to rebuild them to strengths of 400 tanks; more than they had previously ever had; and to reserve them for employment in the defensive equivalent of the Kesselldacht (encirclement), the Panzershldacht (tank battle) in which they would force the enemy armor into decisive confrontations. Hitler approved the Panzershldacht in principle but demanded a rigid defense as well, and that kept the panzer divisions tied to the front and consumed tanks as fast as they came off the assembly lines. The commander-in-chief, West, had seven panzer divisions in northwestern France in June and July 1944, enough to stage a Panzershldacht in Normandy; but those close to the beachhead were committed piecemeal to stabilize the front. Even if Hitler had permitted it, Allied air superiority would have frustrated an attempt to reassemble them and bring the others forward. The two panzer armies Hitler committed to the Ardennes offensive in December 1944 showed that the enemy at his worst was then no longer vulnerable to the 1940-style Blitzkrieg. The Soviet mechanized corps, which had been the approximate equivalent of the German panzer division, was out of existence from August 1939 to late 1940, when it was reconstituted in much heavier form (with somewhat over a thousand tanks, apparently on the assumption that the panzer division's effectiveness depended on weight of armor) only to be disbanded again in July 1941. At the December 1940 war readiness conference, the deputy chief of the General Staff had objected to the whole idea of large armored formations. The Red Army was organizing five airborne corps when the war broke out in June 1941 but was just beginning, under license, to build a transport fleet of American DC-3s. A large part of the airborne force was subsequently converted to infantry, and the one parachute drop attempted in a mobile setting—in the Bukhin Bend of the Dnieper River in November 1943—was an organizational fiasco and a tactical disaster.

The Red Army's mobile forces began to assume their definitive wartime shape in the spring and summer of 1942 with the activation of tank and mechanized corps and tank and air armies. The tank corps had three tank brigades and one infantry brigade; the mechanized corps, three tank brigades. The number of tanks in each was about the same, around two hundred. The tank army's normal complement was two tank and one mechanized corps. The air armies raised tactical air command to the army group level but in a subordinate, not coordinate (like the German air fleets), status; and close ground support remained the Red Air Force's predominant role. In the entire war, over 90 per cent of the air missions were flown within 30 miles of the front line, and 80 per cent within 6 miles.

On 4 August 1943, southeast of Kursk, where the German Zitadelle offensive had collapsed three weeks earlier, the First Tank and Fifth Guards Tank armies opened the mature phase in the Soviet conduct of its Second World War mobile operations. Passing through a gap the infantry had broken in the German line the day before, the tank armies, running shoulder to shoulder, headed south past Belgorod and Kharkov toward Poltava. Simultaneously, infantry armies hit the German line to the south and east, and where it gave way, tank and mechanized corps went through. By early September, after a major effort by a whole army group had launched the Third Guards Tank Army and several tank and mechanized corps toward Kiev, the two Germany army groups south of the Pripyat Marshes could not close their line anywhere east of the Dnieper River. Subsequently, the German armies and the Soviet armor raced each other to the Dnieper, which was supposed to have been a major segment in a German 'East Wall' but was already riddled with Soviet bridgeheads when the Germans completed the crossing in the first week of October. By December the Soviet infantry, artillery, armor, and air contingents were redeployed and ready to begin the cycle again.

The Soviet technique reduced mobile operations to a standard pattern of breakthrough, exploitation, and pursuit that allowed the forces and the several arms to be employed incrementally and the combined effects of all arms to be secured with a command system that could not conduct a reliably effective, fully integrated combined-arms effort. With practice and against a weakened enemy, it could even perform in the Blitzkrieg range: the 200-mile advance to the Dnieper took three months; that from the Vistula River to the Oder River in January 1945 covered 280 miles in fourteen days.

The wartime development of American mobile forces began in the aftermath of the recent German victory with the creation of the Armored Force in July 1940 and an authorization to initiate studies on tactical employment of parachute troops and air-transported infantry. The Armored Force—which appeared, like the Air Corps, to be set on the course toward status as an autonomous army—activated two armored divisions in 1940 and three more in 1941, the only actually new divisions created before Pearl Harbor. Its share in the 1941 Victory Program amounted to no less than a projected sixty-one divisions. The Army Ground Forces authorized two airborne divisions in March 1942 and eventually activated five.

After Pearl Harbor, the Armored Force's course changed; it became a component of the Army Ground Forces in March 1942. A year earlier, General Lesley J. McNair—then Chief of Staff, GHQ—subsequently Commanding General, Army Ground Forces—had written an 'Evaluation of Modern Battle Forces' in which he concluded that against infantry armed with antitank guns, 'armored legions quite conceivably might emerge... an almost total loss.' In November 1941, at exactly the time the German Army was becoming convinced that infantry antitank weapons were insufficient, U.S. antitank guns (and some European models) were an all-around improvement in the means of employing armor. In October 1943 the Armored Force consisted of sixteen armored divisions (of which General McNair contemplated destroying), each a third lighter in weight than the 1942 divisions had been, and seventy-five non-divisional tank forces.
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battalions, eleven more than were in the divisions. The armored divisions’ combat commands were ready-made Kampfgruppen. With regard to the forthcoming Operation OVERLORD, General McNair told the Assistant Secretary of War in February 1944 that ‘whether armor will pay its freight remains to be seen.’

The Army Ground Forces’ approach to mobile warfare entered its final stage in June 1943 when the Armored Force became the Armored Command with barely a vestigial claim to autonomy. A month later, an order eliminating ‘type’ commands above the division level terminated four armored corps headquarters and established all army and corps headquarters as combined-arms commands. Thereafter, although armor could still potentially have been employed in massed formations, the principle of ‘balance,’ of infantry, armor, and artillery operating in close tactical association with each other, prevailed; and it was extended to the small-unit level after June 1944, when tank battalions became parts of the infantry divisions’ normal complements. The airborne divisions narrowly missed being incorporated into the balance in the summer of 1943 (as infantry divisions), and those assigned to the European theater went on to become part of an ad hoc ‘type’ army, the First Allied Airborne Army, which staged the largest airborne operation of the war, MARKET, in September 1944, but did not exert significant tactical influence. FM 100–20 upset the balance by removing the air support elements from the combined-arms commands’ control and by giving third priority to the air and ground forces’ combined effort in the battle area – after air superiority and interdiction. The air forces looked on the tactical effort in all three forms as a diversion from their strategic main mission, and the ground forces believed they received too little direct support; but the ground operations were carried out from D-Day to V-E Day under an air umbrella the likes of which had not yet been seen in the war. That leaves in question the general effectiveness of balance as a means of achieving mobility through combined arms.

Conclusion

The theory of total war as Erich Ludendorff, the former German first quartermaster general, had developed it during the interwar period, posited an absolute military predominance in a future general war. Less radical theory envisioned a political-military partnership in which the military would conduct the war and the civilian authority would manage the domestic war effort in accordance with military requirements. During the Second World War, the military did not attain either of those levels of effectiveness anywhere except in Japan. The war leadership was centralized but in political and not military hands, and political control was strongest and most pervasive in just those states, the Soviet Union and Germany, which were by other standards the most heavily militarized. Foreign relations, domestic policy, and war aims were exclusively political priorities; and the political authorities held the deciding voice in matters pertaining to manpower, war production, and the coalitions. The political leaders also became the de facto armed forces commanders-in-chief and brought strategy within their purview – in some instances, operations and tactics as well.

Prior to the war, reformers, General J. F. C. Fuller, Colonel Charles de Gaulle and General Hans von Seeckt among them, had called for a revolution in operations and tactics that would substitute relatively small, highly mechanized professional forces for the conscripted infantry masses employed in the First World War. Air power advocates had expected strategic bombing to achieve an even more complete revolution. Majority opinion in the military establishments, however, had held to Napoleon’s dictum that victory would ultimately go to the ‘big battalions’ and regarded masses in men and materiel as the decisive elements in war. During the war’s European phase, the German Blitzkrieg accomplished a revolution that set new standards of operational and tactical effectiveness, that, as Field Marshal Manstein later put it, ‘restored art to military leadership.’ But in the European phase, Hitler’s pact with Stalin and Allied military shortcomings and political decision limited the war. After the world war and total war truly began, ‘art’ proved insufficient, and victory inevitably went to the ‘big battalions.’

Notes

10 Carroll, Total War, pp. 232–9.
11 Smith, Economic Mobilization, p. 141.
12 Carroll, Total War, p. 184.
13 Postan, War Production, p. 304.
15 Postan, War Production, p. 304.
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42 Ike, Decision, pp. 64–90; 134–40; Morley, Foreign Policy, pp. 95–103; Department of the Army, German Campaign, pp. 93–4; Military History Research Office, Reich und Weltkrieg, Vol. 4, p. 906.


52 Military History Research Office, Reich und Weltkrieg, Vol. 4, pp. 4–13, 237; Porten, German Navy, pp. 167–76.

53 The Liaison Conferences, in which the Prime Minister, Foreign Minister, War and Navy ministers, and the Army and Navy chiefs and vice chiefs of staff participated, had been instituted in 1937 and were held twice a week. They guaranteed the armed forces’ input in political decisions. The Imperial Conferences were held periodically in the emperor’s presence to put decisions reached in the Liaison Conferences in final form and confirm them. Nobutaka Ike (ed.), Japan’s Decision for War (Stanford, Calif., 1967), pp. 4–13.


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56. The army's change of heart on the Blitzkrieg had not yet extended to armor. Until the panzer groups became familiar with the Blitzkrieg tactics, they would not change. The panzer groups were attached to and subordinate to armies.


78. The US Marines sustained more casualties on Iwo Jima than the Japanese did and did not achieve decidedly better results than Tarawa or Peleliu. On Okinawa, two and a half Japanese divisions and some kamikaze pilots inflicted 75,000 casualties on the US Army, Navy, and Marine Corps – as many casualties as twenty-eight German divisions inflicted in the worst American setback of the European war, the Battle of the Bulge (Millet, *Semper Fidelis*, pp. 395, 431, 438; Pogue, *Supreme Command*, p. 396).


84. Ibid., p. 335.


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24 See Williamson Murray, 'German Response to Victory in Poland: A Case Study in Professionalism,' *Armed Forces and Society*, Winter 1981.
27 Förster, 'Dynamics of Volksgemeinschaft,' p. 179.
28 Ibid., pp. 195-6.
29 Ibid., pp. 205-6.
35 See esp. Timothy Lupfer, *The Dynamics of Doctrine: The Changes in German Tactical Doctrine during the First World War* (Leavenworth, Kans., 1983), pp. 8-9, for an outstanding discussion of how the senior German leadership was willing to listen to the captains and majors who were waging the front-line battle along the Somme in order to reform and improve German tactical doctrine.
36 Dr. Eugene G. Dubini, 'We Must Improve Control of Tactical Forces,' *Armed Forces Management*, July 1965, pp. 52-7.

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The Political and Strategic Dimensions of Military Effectiveness

Russell F. Weigley
Temple University

War in the twentieth century is no longer the extension of politics by other means. It is doubtful whether the aphorism affirming that war is such an extension of politics was ever true enough to warrant the frequency with which it has been repeated. War once begun has always tended to generate a politics of its own: to create its own momentum, to render obsolete the political purposes for which it was undertaken, and to erect its own political imperatives. In the twentieth century, as the present collection of essays attests, the hypertrophy of war through war's assumption of global dimensions and almost unlimited destructiveness has led most emphatically to the emergence of war not as the servant but as the master of politics.

Twentieth-century warfare sets its own purposes. A war begun to quarantine the Austro-Hungarian Empire against the seditious activities of little Serbia among the empire's Slavic populations generates so much military and political momentum that it cannot end until all the great powers of Europe have been so completely defeated or exhausted that four centuries of European political hegemony over the rest of the world are ended. A war precipitated by American economic sanctions intended to punish Japan for its military occupation of a remote corner of southeast Asia leads to the shadowing of the globe by the threat of nuclear destruction.

In consequence of war's assumption of its own momentum and purposes, the questions to which the chapters in these volumes have addressed themselves regarding the political, strategic, operational, and tactical effectiveness of armed forces have become increasingly difficult to answer. It is a tribute to the skill and insight of these volumes' writers that they have produced nevertheless a series of essays to which students of military organization will turn for reference during many years to come. However, to answer the
question of whether an institution is effective, we must first ask the further question: effective in pursuit of what purposes? To try to measure the various dimensions of the effectiveness of armed forces involves, because of the self-generated momentum of modern war, a measurement of effectiveness in relation to a continual, kaleidoscopic shifting of purposes. Measuring effectiveness becomes almost impossible when the goals to be effected are incorrigibly protean.

Questions about the political, strategic, operational, and tactical effectiveness of armed forces could be dealt with much more satisfactorily if we were considering European warfare in the eighteenth century and before the French Revolution. Then war was waged within a state system in which the members of the system shared sufficient common political and social values that they could usually limit the purposes of war—that is, they could usually curb war's tendency to create purposes of its own—by mutual understanding. In particular, the monarchs who guided the principal members of the state system could usually agree that war should never become so unlimited that it might threaten to topple any of their number from his throne; if one of them was toppled, all would be in danger. (The determination of Prussia's enemies, particularly Russia and Austria, to destroy Prussia's great-power status in the Seven Years War was a partial exception to these generalizations.) Usually all the eighteenth-century powers could feel secure in the knowledge that while rivals might seek territorial gains, fortress acquisitions, or marriage alliances at each other's expense, none would pursue another's complete downfall.

The twentieth century's loss of this mutual understanding about the limitation of the aims of war is illustrated by nearly every chapter at hand, perhaps most notably Paul M. Kennedy's 'Britain in the First World War.' Although Great Britain has been less addicted to the more extravagant war aims of our century than many, perhaps most of the great powers—increasing awareness of the relative modesty of its resources reinforcing a tradition of political moderation—the British government decided in the First World War, as Professor Kennedy shows, that British security depended on containing German power in Europe, but with the corollary that it was difficult to envisage how the German capacity to upset the European balance could be contained without a virtually total defeat of Germany. At the least, Great Britain and its allies must be able to defeat Germany completely enough to permit intervention within Germany after the war in order to democratize the regime. The sense of community and mutual forbearance that had characterized the European states in the eighteenth century had eroded almost completely even in Britain by 1914–18. In two critical respects, the British experience in the First World War went on to demonstrate how the loss of limitations upon purpose in war had also eroded away the criteria for measuring the effectiveness of military forces.

In the first place, as Professor Kennedy goes on to remark, the total defeat of Germany probably never offered Great Britain the measure of security it sought either in 1918, when so complete a defeat was not attained, or in 1945, when it was. The total defeat of Germany always implied the creation of a power vacuum in central Europe that was likely to invite the advance of dangers from Russia no less threatening than those that Germany might pose. The policy makers who guided eighteenth-century wars had usually recognized that the total defeat of one's enemy was all too likely to rebound upon oneself; somehow, by the early twentieth century even Great Britain had lost much of this insight.

In the second place, Britain's quest for the total defeat of Germany undercut the effectiveness of the British armed forces by imposing upon them strategic, operational, and tactical demands beyond any they could afford to meet. The quest for the total defeat of Germany assured the prolongation of deadlock on the Western Front. If total German defeat was the object of British policy, then strategy, operations, and tactics had to seek the destruction of the German Army. Nothing less would bring about Germany's complete defeat. And the only way to pursue the destruction of the German Army in 1914–18 was to engage it in a war of attrition on the Western Front.

In fact, I believe that the inordinate ambitiousness of British war policy in 1914–18 locked the British into the slaughterhouse of the Western Front more inextricably than Professor Kennedy conceives. He argues that the real issue in British policy during the First World War was not the degree to which the military leaders could influence policy makers to seek militarily logical national goals—one of the fundamental issues these chapters address—but rather the degree to which the policy makers could influence the military to pursue strategic goals by practicable means. Unfortunately for the British, there was no truly practicable means of pursuing the strategic—and policy—goal of the total defeat of Germany. The only available means was to fight on the Western Front, a means that Professor Kennedy among many others shows was ultimately impracticable in that the costs were hugely disproportionate to the policy objectives.

Altogether, there was no way in which the British armed forces in the First World War could be politically, strategically, operationally, and tactically effective as long as the policy goal was the destruction of German power. Politically, the pursuit of this goal imposed strains on British economic resources and social cohesion that undermined not only Britain's very status as a world power—which the British thought they were fighting to enhance—but the deepest well-being of British society, the social contract itself. Strategically, the pursuit of total victory left no escape from concentrating the British Empire's principal military effort on the Western Front to try to destroy the German Army. Operationally, the concentration on the Western Front left no alternative to the Somme, Passchendaele, and similar offensives. Since between the late summer of 1914 and the spring of 1918 the Germans would not take upon themselves offensive operations against the British. London's goals left no choice but to accept the initiative that the Germans eschewed. Tactically, Britain's policy and the corollary of the Western Front strategy left no alternative to costly infantry assaults, because the military technology of the time offered no substitute for hurling human bodies against the enemy's barred wire, machining guns, and artillery.

This lack of tactical options, given the political, strategic, and operational imprisonment of the army on the Western Front, has to be underlined. The tanks of the era broke down too readily to be a decisive weapon. As various
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chapters in Volume 1 indicate, it is doubtful that the infiltration tactics employed by the Germans in their 1918 offensives could have appreciably changed the outcome if the British and French had introduced such tactics in their own, earlier, offensives. Infiltration tactics might have bought somewhat more ground at somewhat less cost; against a still-vigorous and skillful German army, they would not have been likely in 1915, 1916, or 1917 to have overturned the strategic and operational balance. The other chapters on the major belligerents who fought throughout the First World War, certainly Douglas Porch's on the French military and Holger H. Herwig's on the Germans, point to the same conclusions. The earlier European sense of mutual interests shared by all the powers had so broken down, and all the Continental powers except Italy pursued policies so ambitious, that political, strategic, operational, and tactical effectiveness of armed forces in the service of governmental policy was all but impossible. Policy demanded the payment of military prices so high in the exhaustion of manpower and resources that the effectiveness of the armed forces was bound to be disastrously eroded, if not nearly destroyed. The issue was not the degree to which policy makers could influence the military to seek strategic goals by practicable means, because no practicable means could achieve the desired goals.

To be sure, the military themselves had all too consistently abdicated their responsibility to influence policy makers to establish militarily attainable national goals. All too consistently, the military conspired in setting up policy goals in pursuit of which no strategic, operational, or tactical means could be truly practicable or effective. The conduct of the German military leaders in resisting such efforts as Reich Chancellor Theobald von Bethmann Hollweg initiated toward a compromise peace, insisting instead that some such operational means as unrestricted submarine warfare could produce the total defeat of the Reich's enemies, offers the most conspicuous case in point.

In fact, if the armed forces of any of the major First World War belligerents are to be distinguished from the others for superior effectiveness according to any of the criteria at hand, it might well be the often maligned French. With many of the richest industrial departments of their country occupied by the enemy throughout most of the war, the French had less choice than the Germans or the British about the extent of their war aims. They could not very well settle for less than the enemy's complete evacuation of their northeastern departments if France was to remain a great power. They had little choice also but to insist on the restoration of the full independence of Belgium. Given these conditions, they could scarcely pursue any strategy except that of breaking the deadlock on the Western Front, or any operations or tactics except those that offered a hope of contributing to that end. As Douglas Porch indicates, however, in operational and tactical matters the French were at least marginally more innovative and flexible than the British. Once Général de division Henri Philippe Pétain, rose to the command of the army, his operational scheme of limited, local attacks and of waiting for more tanks and for the Americans were appropriate adjustments to the circumstances.

If France, often maligned for military ineffectiveness in the First World

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War - the shadows of 1870-1 and 1940 no doubt distorting our perceptions of 1914-18 - emerges relatively creditably from a comparison with the other principal First World War belligerents, Holger H. Herwig in contrast leaves the German reputation for exceptional military effectiveness in tatters as far as the First World War is concerned. Professor Herwig's paper is a salutary corrective to recent tendencies among American military historians to make the Prussian and German armies after 1866 appear as veritable superarmies. Perhaps less acutely needed, but also useful, is Professor Herwig's corrective to any lingering scholarly remnants of Samuel P. Huntington's depiction in The Soldier and the State of Prussian-German political-military organization as an ideal type of civilian control of the military. 2

Out of a tangled web of interlocking civil and military institutions calculated not to foster but to frustrate civilian control, and indeed to prevent any reasonable civil-military communication and understanding as well, came Generaloberst Alfred Graf von Schlieffen's famous plan that shaped the outset German participation in the First World War. Schlieffen, as chief of the General Staff and therefore chief adviser to the Imperial Supreme Commander, had devised an operational plan that was inconsistent with both the policy and the strategic interests of the German Empire on one hand and with the logistical and tactical capabilities of the German Army on the other. As for policy, while Bethmann Hollweg knew about the plan before the war began, its nature was never adequately communicated to the political authorities; as for the plan, Bethmann Hollweg himself, along with other top officials, was almost certainly aware of Great Britain to the list of Germany's adversaries in a war against France and Russia, and that would also be detrimental to the defense of Germany's principal ally, the Austro-Hungarian dual monarchy, whose officials were also inadequately informed. As for strategy, the Schlieffen Plan failed to take appropriate account of the Russian threat either to Germany itself or to Austria-Hungary. As for the logistical and tactical capabilities of the German Army, the plan practically assured an advance that outran the limited transport facilities of the army beyond railheads - outrunning particularly the capacities of the army's limited truck transport - and thus also assured a tactical crisis when the army would have to fight a climactic battle for Paris at the very time when its logistics were stretched to the breaking point.

The response of the German military leadership after the failure of the Schlieffen Plan in 1914 had left the war deadlocked was even less conducive to military effectiveness than the French response to the same situation of deadlock. The muddled German constitutional arrangements for civil-military relations permitted the Supreme Headquarters of the Army (Oberste Heeresleitung, or OHL) in effect to take control of the whole government of the empire, practically besieged by opponents on the west, east, and south. This military usurpation stultified German political life, with the further effect of stifling the efforts of Bethmann Hollweg and other politicians to find a negotiated peace. The absolute supremacy of OHL also discouraged operational and tactical flexibility within the army by establishing an overly centralized control in which almost nothing could be done without reference to Supreme Headquarters.
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Nevertheless, it remains not without some reason that military historians have tended to regard the German Army as the most effective in the world operationally and tactically from the campaign of its predecessor, Prussian Army against Austria in 1866 to the downfall of Führer Adolf Hitler’s Germany in 1945. In spite of the crazy-melty complexity of the German Empire’s military organization, and in spite of the highs in German military performance during the First World War so clearly delineated by Professor Herwig, the German Army also displayed in the First World War various noteworthy operational and tactical virtues. Some of them, also enumerated by Professor Herwig, were the artillery reforms that culminated in the introduction of the creeping barrage, and increasingly flexible infantry assault tactics that culminated in the appearance of infiltration tactics. The modern German Army also developed an unparalleled measure of unit cohesion that enabled its constituent elements to survive under brutal casualties and to rebuild themselves with phenomenal speed and effectiveness should only a cadre of commissioned and noncommissioned officers survive some especially costly encounter.

Not the least of the contributions of Professor Herwig’s critically analytical chapter, however, is its stress on the ways in which even the salient virtues of the German Army contributed to its undoing in the First World War. Particularly, the very tactical strengths of the army helped shape the climactic 1918 offensives in such a way that they unsystematically exploited tactical advantages wherever those advantages might appear, without imposing on the offensives an operational or strategic coherence—and this made probable ultimate failure become inevitable failure.

This climactic German Army’s failure of letting tactics control strategy was not completely different, however, from the methods of generalship for which I have praised General Pétain. He, too, let tactical considerations dictate his operational and strategic designs, albeit with a caution and a fundamental realism and rationality that the German commanders of 1918 lacked. The significance of this ascendency of tactics over operations and strategy returns us, however, to the main thread of our argument. It was surely an evidence of the extension of policy goals beyond anything that strategy or operations could hope to grasp that military commanders felt obliged to concentrate on tactics and technique. At least a creeping barrage by the artillery or infiltration tactics on the part of the infantry might produce a reward on the battlefield proportionate to the effort that went into them: a small reward, calculated in incremental advantages in reducing casualties or capturing narrow patches of terrain, but nevertheless a kind of success at a time when policy, strategy, and operations all sought goals the pursuit of which had degenerated into bloody futility.

The participation of Japan in the First World War, outlined by Ian Nish, stands out in marked contrast to that of the major European powers. The reason for the contrast lies of course in the limited nature of the objectives of that nation-state and also of its armed forces. Seeking principally to capitalize on Europe’s troubles to acquire territory and influence previously held by the European powers in the Far East, Japan felt no need to resort to strategic, operational, or tactical means disproportionate to the objectives sought. At the same time, the armed forces of Japan possessed uncommonly effective means of securing political acceptance of their desires in terms of budgets and force structure in the constitutional right of direct access to the emperor and through the extra-constitutional institution of the Genrō and the custom that the war and navy ministers must be appointed respectively from among generals and admirals on the active list. While Professor Nish suggests that these arrangements did not result in so much harmony and cooperation between the civil and military branches of government as other historians have sometimes thought, nevertheless civil-military tensions were moderated because the vital interests of the nation were not directly at stake. There could be and were tensions within the Japanese military, such as Professor Nish’s example of disagreements over whether a naval squadron should be sent to the Mediterranean, with some naval officers themselves questioning the worth of this deployment in terms of the naval experience it might impart or the prestige and influence it might buy. Yet again, no vital national interests were threatened, and the military organizations of the country were not hard pressed to pursue effectively such limited objectives as Japan sought in the First World War.

Italy, as portrayed by John Gooch, may also represent an exception to the succumbing of the First World War powers to inordinate ambitions. However, the exceptional aspects of Italy’s participation in the war must be viewed in the light of Italian weakness. Italy was certainly the least of the great powers; behind its façade of great-power status it was in fact an underdeveloped country. Therefore even the pursuit of relatively modest goals could impose upon Italy strains more severe than the prizes were worth.

The history of the rise of the Kingdom of Sardinia-Piedmont to become the nucleus of the United Kingdom of Italy had been one of continual use of opportunistically timed war to take advantage of various distractions vexing the greater powers and thereby to win sometimes remarkably large gains at moderate expense. In the First World War, Italy hoped to repeat this pattern. It waited to enter the war until it could judge whether Austria-Hungary or France (both of whom possessed territory that it coveted) seemed to offer the more likely prospect of collapse and easy territorial harvest. In 1915 Italian politicians calculated that the better prospects lay in attacking Austria; France’s weaknesses, aggravated by unlimited war, could be exploited later. The Italian perception of Austria’s vulnerability was partly but not entirely wrong. Italy entered upon a more difficult and expensive war than it would have wished for, but eventually the multi-national Danubian Empire did collapse, whereupon Italy eventually captured some of the expected spoils, including the Trentino and the city of Trieste along with much of the rest of the Istrian peninsula. (The city of Fiume, initially established by the Treaty of St.-Germain as part of the Free State of Fiume, gravitated to Italy later, under the Treaty of Rome of January 27, 1924, which divided the Free State between Italy and Yugoslavia.) In balance, however, the grueling campaigns that Italy had to fight in the Alps before the death throes overtook Austria-
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Hungary, and especially the humiliating Italian defeat at Caporetto beginning October 24, 1917, added up to losses and suffering disproportionate by almost any reckoning to the prizes eventually reaped.

Part of the cost consisted of the weakening of Italian parliamentary government to permit the imposition of the Fascist dictatorship of Il Duce Benito Mussolini during 1922-3. In this perspective, the Italian experience in the First World War suggests that when the policy goals of one’s allies and enemies have grown indeterminate, it is almost impossible to extricate oneself from the consequent inefficacy of either strategy, operations, or tactics in quest of those goals, no matter how limited one’s own objectives. Only a power remote from the main theater of action, such as Japan, could avoid being drawn into the general calamity that follows when the principal powers of rival belligerent coalitions reach for war aims beyond the capacity of any strategy, operations, or tactics to attain at reasonable cost.

Perhaps the most remarkable aspect of Italy’s participation in the First World War, however, was not that the kingdom was sucked into a maelstrom in which crafty calculations of prizes and prizes ceased to be relevant to the circumstances at hand, but that the underdeveloped Italian state contrived to fight with as much operational and tactical effectiveness as it did. Considering the stringent limitations of Italian resources, it was no small feat merely to maintain an army with any respectable operational and tactical capacity whatever through three years of combat in an Alpine arena of nightmarish logistics and even more nightmarish living conditions for the troops. Merely sustaining the endless battles of the Isonzo manifested no small operational and tactical effectiveness on the part of the Italian Army. It was an achievement that could scarcely have been predicted before the war began, and it suggested that the Italian Army had contrived to develop a strength, cohesion, and resilience superior to those of the state it served. Military organizations are often said to be reflections of the societies that create them. While necessarily true in large measure, this axiom is not true in any simple way. The Italian Army of the First World War transcended to an impressive extent the weaknesses of the Italian state.

Of course, the Italians were mostly fighting the armies of decadent Austria-Hungary, but the Italian achievement is as impressive as it is because the Austro-Hungarian Army rose to a similar transcendence. It fought the First World War with considerably more operational and tactical effectiveness, and especially with a greater endurance, than the rickety condition of the multi-national Hapsburg Empire would have led almost any observer in 1914 to predict. Like the Italian Army, the Austro-Hungarian Imperial and Royal Army of the First World War was no mere reflection of the society it served but an entity able to rise above at least some of the weaknesses of that society. Much the same kind of statement might be made about the Russian Army in the same war, as it might be about the Confederate States Army in another war. During the last phases of the American Civil War, it had been not the Confederate States government that sustained the army but the army that sustained the government. In Volume 1 of this study, the Italian and Russian armies of the First World War can be seen to have come close to doing the same thing. The contributions of John Gooch and David R. Jones

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at least hint at a variant of military effectiveness that goes beyond the usual dimensions suggested by the introduction to these volumes. Armed forces can sometimes attain lives of their own separate from and more vigorous than the lives of the states and societies that first nurtured them.

Like Japan and unlike Italy, the United States in the First World War was fortunately remote from the center of the maelstrom, and therefore not necessarily susceptible to being drawn willy-nilly into the maw of policy commitments exceeding any practicable attainment of strategy, operations, and tactics. The experience of the United States, as presented by Timothy Nenninger and followed by Ronald Spector to 1939, was indeed not so different from that of Japan, as a cursory reading of the papers might at first suggest. It is true that because the United States in 1917-18 pursued immensely more ambitious policy objectives than Japan, and because this pursuit demanded an abrupt shifting of political and strategic gears, the military organizations of the United States did not function in the First World War with the smoothrunning, unhurried effectiveness of the Japanese forces. In spite of the confusions of abrupt and rapid mobilization, however, and in spite of the inability of the American forces during the short span of April 6, 1917, to November 11, 1918, to attain all their goals in acquiring material and in meeting operational and tactical objectives, the total picture is one of extraordinarily effective redirecting of the national energies from peaceful to military purposes. Furthermore, in spite of the Americans’ ostensible dedication to policy goals as extravagantly ambitious as ending all wars and making the world safe for democracy, distance and belated entry prevented these goals from developing all strategic, operational, and tactical effectiveness. The costs of the war to the United States were not altogether disproportionate to the increase in American influence and diplomatic power that came out of the participation, and the costs would have been still more worth paying if the United States had employed its enhanced influence and power more wisely in furthering its national interests.

Of course, there is a contrast between the United States and Japan also in Professor Spector’s depiction of the abrupt American reversion to military inactivity after 1919. The American armed forces enjoyed nothing like the ability of their Japanese counterparts to shape the policies of the civil government in peacetime, and soon after the First World War the American forces again became objects of neglect. When the prospect of a second American involvement in global war emerged at the end of the 1930s, the American military would have to undergo a second rapid shifting of gears, almost as abrupt and jarring as in 1917-18. Nevertheless, from 1917 onward the effectiveness of the American armed forces in relation to policy goals seems reasonably high.

In particular, we do not find underlying Nenninger’s and Spector’s periods in US military history those unthinking anti-military attitudes and that wanton indifference to the needs of military preparedness with which historians within the armed forces have often charged the presidents and the Congress. After all, small and inexpensive military organizations fitted rationally into American national policy through almost all of the country’s history until 1939 and were also consistent with the inherent geographic
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security of the United States against all foreign military threats to its vital interests. There was no need to expend large sums of money or large portions of the national energy on military preparedness because the United States, even more than Japan, had no really vital interests to advance or protect militarily in the First World War or in the twenty years that followed. Even to the end of the Second World War, the American continental homeland was secure against any substantial external military danger. If anything, the most glaring example of ineffectiveness displayed in American military history up to 1939 involved not the strategic, operational, and tactical difficulties attendant upon rapid mobilization and abrupt commitment to Europe in 1917-18, but rather the political ineffectiveness of the civil government's forcing such activities upon the military organization when national interests demanded nothing of the sort. No vital foreign-policy objective required large-scale American intervention in the battles in France in 1917-18; the absence of any such vital interests did much to encourage resorting to irrational, unattainable war aims whose pursuit made matters worse by impeding the nation's understanding that, once it was committed to joining in the war, the way was at least open toward modest gains in influence and relative power that might have been capitalized if they had been better understood.

In any event, contrary to the hoary historical myth of an anti-military America, the American civil government never consistently denied its military organizations the means to fulfill with reasonable effectiveness the responsibilities demanded of them. When American policy made its dubious plunge into Europe in 1917-18, the armed forces were granted just about all that was possible of the resources they needed to attain immensely enhanced purposes. However, for most of the twentieth century until 1939, the key to the history of American military organizations was, as it was also for Japanese military organizations until about the same terminal date—a confinement to limited objectives. By keeping national purposes limited through most of the period, the United States could with relative ease build and maintain armed forces suitable to those purposes—just as, conversely, the experience of the major European belligerents in the First World War indicates that when national purposes grow extravagant, no straining of resources can bring about strategic, operational, or tactical effectiveness in their pursuit.

Before leaving behind reflections on the military experience of the First World War, it seems imperative to underline the consistent absence of effective cooperation between armies and navies. This theme is at least a subsidiary feature of every chapter dealing with the First World War in a nation where the navy as well as the army had a major role to play. Around the globe, from Great Britain to Japan—and conspicuously including those two maritime powers, whose navies were peculiarly vital to the safeguarding of national interests—relations between armies and navies displayed less cooperation than mistrust and misunderstanding. In no country did either service show much regard for what the other might contribute to its own operations, let alone to the larger policy and strategy goals of the nation. The detailed staff contemplations that made up Germany's Schlieffen Plan did not extend to considering whether the German Navy might impede the flow of

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British reinforcements to the French across the English Channel. If army staff planning thus neglected possible naval roles, the navies were in worse condition; they had almost no strategic or operational planning worth the name. Neither in Great Britain (its leadership in naval development notwithstanding) nor in Germany (its leadership in the development of professional military staffs notwithstanding) did the navy in the First World War possess a planning agency comparable to the ones that the Prussian example had made commonplace in armies. No other navy had a head start where these two lagged.

More than inter-service competition between each nation's army and navy was at fault here. Inter-service competition can go only part of the way toward explaining the dearth of army-navy cooperation. It does not explain why navies lagged behind even in creating the institutions that should have been the agencies of cooperative planning between them and the army general staffs. Why were naval general staffs almost nonexistent? A possible explanation worth further exploring is that of military institutions is that the absence of naval organizations comparable to army general staffs was one indication of a larger lagging of navies behind armies in the development of military professionalism in their officer corps.

When Captain Stephen B. Luce established the United States Naval War College in 1885, he perceived the need for the college in terms of the absence of a desirable degree of professionalism among naval officers, particularly in their lack of education in strategy. Naval officers were professionals in seamanship but not, Luce believed, in the conduct of war. While his diagnosis and his attempted remedy applied specifically to American naval officers, the American situation was by no means unique. Even the British lacked an articulation of the very principles of naval strategy on which British sea power and the worldwide British Empire were based, soon to be expounded for them at Luce's war college by Captain Alfred Thayer Mahan. In virtually every country, the tradition of naval education, such as it was, was a tradition of practical and technical instruction conducted largely on shipboard. Navies had not developed the theoretical and historical approach to the education of officers in operations and strategy that had gradually permeated all the major armies during the nineteenth century. Without such a foundation, there was no professional education of naval officers comparable to that of army officers, and therefore in a real sense only a decidedly limited military professionalism among those officers. It is not at all unlikely that the lagging pace of naval as compared with army military professional development was a major factor impeding communications and cooperation between the services.

The chapters in Volumes 2 and 3 that move on into the interwar years and through the Second World War confirm what has become almost a commonplace of the history of civil-military relations, that the influence of armed forces upon national policy and the relative independence of military organizations from civilian control reached their apogee in the early years of the First World War and thereafter declined. In a narrow view of the effectiveness of military organizations in influencing politicians to meet military ends, this decline meant a loss of effectiveness; in the broader perspective of the
principle of civilian control of the military, it was of course a gain. In no major power except Japan did the armed forces possess in the Second World War the autonomy and the ability to influence policy that they enjoyed to a considerable extent during the First World War in all the great powers, including the English-speaking democracies. Earl F. Ziemke's and John E. Jessup's chapters on the Soviet Union before and during the Second World War present something of an extreme case of a military organization's loss of autonomy and influence, in the increasing subservience of the Soviet armed forces to the Communist Party and to Party General Secretary, Premier, and Generalissimo Josef Stalin. Yet the Soviet instance only carried to more radical—and in the purge, more terrible—conclusions the process of throttling military independence that occurred in all the powers except Japan.

The exception provides a critical clue to the causes of these developments. Because Japan's aims had been so limited in the First World War and had therefore been largely attained, Japan was the only one of the powers that emerged from the First World War virtually without a backlash of political and public resentment toward the military for failing to fulfill promises. In all the other powers, the military had received a generous measure of both autonomy and political influence during the early stages of their participation in the First World War but the at least implied promise that in return each military organization would reward its people and governments with victories over foreign foes comparable to those won by the autonomous Prussian Army in 1866 and 1870–1. In 1914–18, however, the armed forces of all the European powers had repaid the granting of autonomy and influence not with victories but with a bloody stalemate. The consequent disillusionment led to a gradual re-assertion of civil supremacy over the military in all the European powers except Germany well before the First World War ended, and the process continued after the war.

Even the United States in some measure fitted this paradigm. In 1917–18, the American army had had almost anything it asked for, and General John J. Pershing as commanding general of the American Expeditionary Forces exercised an independence from the control of the civilian commander-in-chief unparalleled in US military history. However, while American participation in the war was too brief to include a bloodletting on the European scale, and while geographic remoteness indeed gave the American participation more than a little resemblance to Japan's, nevertheless the American people made sacrifices and invested a fervor in the war that after November 11, 1918, came to seem disproportionate to any rewards that they earned. So the American military, while never sinking into the disfavor that some service historians have alleged, certainly lapsed far from the independence and prestige it enjoyed during the war. More than the difference in personalities between Presidents Woodrow Wilson and Franklin D. Roosevelt was involved when the Second World War commander-in-chief proved vastly more active and assertive in his control of the armed forces than Wilson had been.

It is worthy of particular note, however, regarding the interwar years that the reaction in favor of much enhanced civilian control prompted by disillusionment among civilians with the course of the 1914–18 war—and the consequent decline in the effectiveness of armed forces in securing civilian acceptance of their political goals—produced no conspicuous falling off in the armed forces' potential tactical and operational effectiveness in qualitative terms. Thus there was no major falling off of their potential strategic effectiveness, provided always that strategic goals were kept within realistic reach of the group. There proved to be no necessary correlation between politically autonomous armed forces and militarily effective armed forces. If anything, a case could be made in the opposite direction, that in response to a relative loss of political effectiveness during the interwar period, the armed forces, thus obliged to focus upon their military effectiveness within a political framework ordained for them, enhanced their qualitative effectiveness in tactics and operations.

The German military, for example, were among those most drastically deprived of their previous political effectiveness. If the Reichswehr of the Weimar Republic retained disproportionate political weight as something of a state within the state, it none the less had to tailor itself to the exceedingly severe restraints of the Treaty of Versailles upon its ability to gain through politics the resources it might have desired. After Adolf Hitler came to power, the German armed forces had to adjust to a more ubiquitous as well as more potent and vigorous political control than any remotely approached in the previous history of modern Germany. Yet the interwar German armed forces depicted by Manfred Messerschmitt looked decidedly effective in their tactical and operational potential in contrast to the First World War German forces portrayed by Holger Herwig. The austerity of the Weimar years compelled the German military to prune away most of the organizational anomalies that had hampered it during the First World War. More efficiently organized within, the armed forces then were ready to capitalize on the generous resources awarded them by Hitler to develop the theory and practice of Blitzkrieg warfare, an advance in tactical and operational capacities enhanced rather than restricted by the loss of the military's political autonomy to Hitler, who was himself a champion of Blitzkrieg concepts.

In Britain, more dramatically, the efforts of civilian statesmen to recapture and retain ascendancy over the military stimulated an impressive advance in military organization early in the interwar years in the creation of the Chiefs of Staff Committee (COS), which placed Britain in the forefront among the major powers in achieving inter-service coordination, but which was also an effective effort to adjust the activities of the professional leadership of the armed forces to more active civilian control while retaining sufficient safeguards for the assertion of military views on policy and strategy to assure reasonable protection for the military's interests. In Britain also, where the Royal Air Force was the armed service subject to the most active civilian interest, it was eventually this very civilian influence on military policy that was critical in shifting the balance between Bomber Command and Fighter Command enough in the latter's favor to make possible its triumph in the Battle of Britain. Altogether, Brian Bond and Williamson Murray's chapter on Britain between the wars suggests that reduced British military influence on policy had a generally healthy effect upon strategic, operational, and tactical effectiveness.
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In the United States, it was the navy that was the armed service receiving the most intimate civilian supervision and control during the interwar years because the navy, with its Pacific Ocean orientation, bore the closest relationship to civilian foreign-policy interests during those years. Ronald Spector’s chapter indicates that despite the limitations of the Washington Naval Treaty of February 6, 1922, and subsequent international naval agreements, the very energy and constancy of civilian interest in and shaping of the navy eventually assured that when the foreign policy interests it served in the Pacific were challenged, the navy was of all the American forces the one best prepared, in doctrine as well as material resources, for the trials of the Second World War. Civilian indifference left the army freer to develop its own choices in weapons design and force structure — within severe budgetary limits, to be sure — but the army, with this larger autonomy, succeeded less well than the closely watched navy in readying itself for the Second World War. For example, Spector’s chapter shows the navy adjusting itself more flexibly in doctrine and structure to the aircraft carrier than the army did to the tank.

Of course, the post-First World War pattern of civilian restriction of armed forces’ effectiveness in shaping policy could be carried to nearly disastrous excess — as in the great purges of the officer corps of the Soviet Union in the late 1930s. Even in the Soviet Union, however, active civilian preponderance in shaping military policy and strategy also meant the preparation of the Red Army for an operational and tactical effectiveness in the Second World War far exceeding the effectiveness of its tsarist predecessor in the First World War, not only through the modernization of the state and the economy that supported the armed forces, but also through the political regime’s contributions, albeit uneven, toward pushing the army into the age of mechanized war.

Conversely in Japan, the one major power during the interwar years in which, as Carl Boyd’s contribution shows, the political autonomy of the armed forces persisted in the pattern of the First World War and earlier, a sated and complacent army failed to wrench itself loose from early twentieth-century operational and tactical modes into those of mechanized war. The consequence was a thrashing of the politically autonomous Japanese Army by a politically weak but operationally and tactically effective Red Army in the clashes along the Mongolian border on the eve of the Second World War.

In the two nations whose armies most glaringly failed to maintain operational and tactical effectiveness during the interwar years, Italy and France, it was neither effectiveness in influencing state policy nor the lack of it that determined the deficiencies. In Italy, the more vigorous civilian control of military policy exercised by Mussolini as compared with the earlier regime was able to correct some of the long-standing operational and tactical shortcomings. Mussolini’s encouragement of the air force permitted Italy for a time in the 1920s and early 1930s to achieve a stature in military aviation considerably exceeding the country’s resources. Yet in Italy, insufficient resources for genuine great-power status continued to impose an impenetrable barrier against military effectiveness of great-power standards, notwithstanding the progress attained over the Italy of the First World War described by John Gooch. The interwar Italian military weaknesses detailed by Brian R. Sullivan were in tactical and operational doctrine those of forces tied like Japan’s army to First World War conceptions, most notably in its excessive reliance upon infantry. However, in Italy those weaknesses were rooted ultimately in the inadequacy of the country’s resources to equip more modern mechanized forces on a great-power scale.

Robert Doughty’s description of the accumulating tactical and operational deficiencies in the French armed forces, which had performed remarkably well in 1914–18, lays much of the blame on inadequate resources, but in a different sense than with Italy. In France the absolute limitations imposed by the national economy were of course far less severe than in Italy. France possessed enough inherent strength to rank properly as one of the great powers according to the standards of the 1930s. Unfortunately for France, however, it was not permitted to be merely one among the great powers. The peace settlement of the First World War required France to be the great power of continental Europe, the policing power that was to enforce the military and other restrictions of Versailles upon Germany, and the military ally to the relatively weak eastern European states, where French support was to assure their viability in spite of the overshadowing potential power of their German and Russian neighbors. It was for this exceptional role as the military arbiter of interwar Europe that the resources of France were much too limited, and so the French military could not face its responsibilities with confidence. The French Army of the interwar years bore responsibilities beyond any tactical, operational, or strategic effectiveness that it might realistically hope to achieve. Consequently the confidence of the French military waned, and with the waning of assurance that it could accomplish its potential missions, the French military withdrew into the siege mentality of defensive-mindedness that during the 1930s eroded its ability even to capitalize on such resources as it possessed. Nevertheless, the source of France’s crippling military predicaments did not lie in a reduced military effectiveness in influencing civilian policy as compared with 1914. It was inherent in the international responsibilities of the Third Republic. Permeating Doughty’s account of the French Army is the debilitating effect of overlarge burdens upon a force that began the interwar years reasonably effective but gradually crumpled under a weight too heavy to bear.

The shift from autonomous military organizations highly effective in securing acceptance of their desires in policy and resources from the rest of the state — or in imposing their desires — to armed forces decidedly subordinate to the political leadership occurred belatedly but most dramatically in Germany. Manfred Messerschmidt’s and Jürgen E. Förster’s chapters on the German military between the world wars and during the Second World War, respectively, delineate the course of the shift in power to Adolf Hitler as master of the Third Reich in almost every dimension, including the now chastened and subordinated armed forces. In Germany, the decline in military autonomy was postponed until well after it had occurred in the other
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European powers; in spite of the external limitations on German military effectiveness imposed by the Treaty of Versailles, military autonomy was postponed in fact deep into the interwar years, until 1933 and after. The delay occurred partly because of the deeply rooted German and especially Prussian tradition of respect for the military, partly because during the First World War the German military had seized so complete a grip upon the other institutions of the state that the habit of deference to the military became yet more firmly established than before, and partly because the exposure of defeated Germany to the communist threat in the aftermath of 1918 placed thebourgeois Weimar Republic in uneasy dependence upon the military.

Nevertheless, in Germany as in all other European great powers, the military during the First World War had failed to fulfill its implied promise of victories on the 1866 and 1870-1 models in return for its privileged position within the state. The post-1918 claim of the army that it had not been defeated — the stab-in-the-back legend — could not altogether gloss over the reality that whether or not the German Army had been truly beaten, it had certainly not won the war. The First World War left an inheritance of disillusionment with military autonomy and privilege even in Germany. The disillusionment laid the foundation for Hitler's humiliation of the German armed forces.

If the humiliation of the German army was the most dramatic turnabout in the status of any of the major armed forces after the First World War, however, and the subordination of the Soviet armed forces to the political apparatus of the dominant party in the state was the most complete subjugation of the military to politics, these German and Soviet instances also underline the decided limitations displayed by the re-assertion of civilian control of the military after about the mid-point of the First World War. Those limitations provide by no means the only explanation of why the armed forces' loss of political effectiveness in the interwar years did not lead to commensurate losses in strategic, operational, and tactical effectiveness, but they represent an important factor in the equation. The limitations in question have to do with the penetration of civilian control by militarized values and conceptions.

While Hitler and Stalin were not professional soldiers, civilian control in their hands was controlled by civilians whose judgments of the world displayed a decidedly military cast. Hitler and Stalin alike perceived the world as an arena of almost perpetual military conflict until the perhaps distant day of the triumph of their respective ideologies. Until that day, the state must strain its resources to prepare for war and must frequently engage in war. Hitler's perceptions were so militarized that he gave the military a larger share of Germany's resources than they desired, or at least he diverted resources to the Heimwehr more rapidly than the officers thought they could assimilate them during the middle and late 1930s. Stalin's whole direction of the Soviet state, particularly the Five-Year Plans, was similarly governed by his unwavering focus on war as the destiny of the state.

Thus civilian control, as it displaced military autonomy from the middle years of the First World War onward, did not by any means necessarily imply a loss in the ability of armed forces to secure allocations of resources to military purposes. If anything, in Hitler's Germany and Stalin's Soviet Union, the lenses through which the leader of the state perceived his relations with the world at large were more militarized, more designed to emphasize military force as the necessary arbiter of international conflict, than before. Alfred Vogt recognized long ago the phenomenon of civilian militarism, in the sense that civilian control of the military has come to mean control by civilians whose world views are strongly conditioned by a belief in the inevitability of war, his discussion of civilian militarism has proven to be altogether on target.

Of course, the principal democratic leaders of the Second World War regarded the world in less warlike terms than did Hitler and Stalin; but with Prime Minister Winston S. Churchill and President Franklin D. Roosevelt, the difference was in degree rather than in kind. Both of these democratic statesmen came to envisage the world as shaped largely by war, Churchill with relish for the echoes of drums and trumpets, Roosevelt rather reluctantly. Both became as generous as most military professionals could have hoped for in giving over national resources and energies to military purposes. Even in the Western democracies, the militarization of national policies begun by the statesmen of the Second World War has remained a continuing phenomenon.

The world wars have accustomed political leaders to resort to arms as a habitual instrument of policy. The invocation of military force has tended to become a prompt, almost automatic response to otherwise recalcitrant international problems. In the United States, the departure from past national policies has been drastic. Civilian control of the military was zealously re-affirmed by President Roosevelt during the Second World War and remains remarkably secure, but national policy since 1945 has nevertheless been conspicuous for resorting to military means in dealing with international irritations with a rapidity and willingness that Americans of no generation would have thought conceivable. We live in an era of re-invigorated civilian control of the armed forces in all of the major powers, but we also live in an era of militarized civilian leadership.

As for the effectiveness of armed forces, Volume 3, on the Second World War, demonstrates that while re-invigorated civilian control did not in 1939-45 do much injury to the professional soldiers' desires regarding national policies or the allocation of national resources, the re-invigorated civilian control did sometimes bring a reduction of the effectiveness of armed forces in the realms of strategy, operations, and tactics. The farther that re-invigorated civilian control reached into the domains of professional expertise, the more likely it was to damage the effectiveness of military organizations.

Once more, Stalin's Soviet Union and Hitler's Germany can be used as the extreme instances; but once more they are not altogether atypical, because they represent only the extreme manifestations of tendencies that were strong in all the great powers.

Professor Ziemke details how Stalin's paranoid concern for the ideological purity and Communist Party loyalty of the Red Army increasingly attenuated the Soviet military establishment's contacts with and knowledge...
The strategic failures of Germany in the Second World War were shared equally by Hitler and the military professionals.

Nevertheless, a few additional words about operational and tactical effectiveness during the Second World War are in order, not only concerning the German armed forces but in a more general vein. In the reasonably large area where, in spite of the growth of civilian control, the operational and tactical direction of the Second World War armed forces remained with the military professionals -- and this area did remain reasonably large even in Germany and the Soviet Union -- it follows from our observations about the interwar armed forces in regard to operational and tactical effectiveness that the performance of most of the major military powers proved on the whole to be impressive.

The German, Soviet, British, and American armed forces in the Second World War, all more narrowly curbed by civilian leadership than their First World War predecessors, nevertheless performed with a professional efficiency in operations and tactics surpassing their First World War forebears. This advance was most decisively marked among the Americans; Allan R. Millett suggests an American leap forward in operational and tactical effectiveness under the stimulus of leading the Allied coalition in global war that is not entirely accounted for in the background developed by Professors Nenninger and Spector. Perhaps the American armed forces held latent strengths still concealed to even the most astute observer before December 7, 1941.

The gain in operational and tactical effectiveness during the Second World War as compared with the First was probably least marked among the British. Williamson Murray's chapter contains numerous reminders of the severity of the strains imposed on Britain in 1939-45 by its effort to grasp approximate military parity with the emerging superpowers, and the strains penetrated downward into operations and tactics. Nevertheless, though in varying degrees, the operational and tactical effectiveness of the Germans, Soviets, British, and Americans in the Second World War appears clearly to have exceeded that of the earlier war.

Advantages in such effectiveness were assisted, of course, by superior economic and logistical organization of the states that supported the armed forces, and especially by superior means of transport to assure the flow of logistical support to the fronts. They were assisted also by the ways in which the application of the internal combustion engine to improved tanks, gun carriages, and aircraft partially broke the tactical deadlock inherent in First World War technology. Yet beyond such matters, the chapters on the Second World War armed forces of Germany and the three major Allied powers portray a clarity of operational and tactical doctrine, an efficiency in the execution of doctrine, and an overall competence in professional leadership on the operational and tactical levels exceeding the standards of the First World War. All the chapters at least partially imply that this performance derived in some measure from the very decline of the political autonomy of the military, which compelled armed forces to turn professionally inward upon their officers' areas of true expertise. The appropriate verb to describe the relevant chapters' accounts of these phenomena is, however, imply. The correlation between a narrower political effectiveness of armed forces and a
larger operational and tactical effectiveness is more hinted at than developed. Military historians should explore the issues further.

In the powers not mentioned in the preceding paragraph, the Italian and French armed forces were held back during the Second World War, as in the interwar years, from attaining the operational and tactical effectiveness of their contemporaries by their countries' relative lack of the resources needed to meet the responsibilities they assumed, as well as by the consequent psychological malaise. In Japan, it is significant that in the Second World War, as in the interwar years, military autonomy within the politics of the state, and the resulting ability of the military to satisfy any demands upon the resources of the state, failed to produce a commensurate operational and tactical effectiveness. Instead, it nourished among the Japanese military a complacency ultimately antithetical to effectiveness in war.

In the Western democracies, although both the American President and the British Prime Minister exercised a more vigorous personal direction of the armed forces in the Second World War than had their counterparts in the First World War, this civilian activism did not reach so deeply, however, from the strategic into the operational and tactical realms as in Germany and the Soviet Union. Here there were differences at least of degree between Roosevelt and Churchill, the latter tending to exceed the former in emulating Hitler's penchant for having a finger in every military pie. Especially during the North African campaigns, Churchill tended to badger his commanders endlessly about issues that were decidedly most appropriate for resolution by the professional military men on the scene, such as whether to hold Tobruk if it were cut off from relief by land during the Germans' 1942 offensive, as had been done in 1941. It took military men of strong character to bear up under Churchill's bullying on such matters. Nevertheless, Churchill's sporadic displays of his urge to be a field commander notwithstanding, the overall picture in the Western democracies was one of decidedly energetic civilian control, but of a civilian control that mainly left to the professionals the properly professional direction of operations and tactics. Civilian control in these countries meant primarily a strong civilian hand directing policy, including those policy matters that involved the military, along with a large civilian share in the making of military strategy, the level of military decision making in which military and civilian concerns most intricately intertwine in any event.

Appraising the impact of activist civilian control of strategy upon military effectiveness in the Western democracies during the Second World War has to be a more subjective business than most of the appraisals with which these volumes deal. After all, the United States and Great Britain achieved military victory at a price at least less disproportionate to the rewards than that which Great Britain and France had paid in the First World War. Trying to judge whether the victory could have been achieved in a yet more cost-effective manner places the analyst on the slippery slope of counter-factual history, weighing might-have-beens, which is usually a situation to be avoided. Nevertheless, a few observations ought to be risked.

Among the most conspicuous aspects of Winston Churchill's direction of

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British strategy was his hearty sponsorship of the Royal Air Force's campaign of 'strategic' bombing of Germany, including the particular form taken by that campaign, the area bombing of German cities, leading to the indiscriminate destruction of every kind of life and property within them. More particularly still, Churchill's sponsorship extended to the series of firebombing raids beginning with Hamburg on July 27-28, 1943 (in which some 42,000 Germans are estimated to have died) and ending with Dresden on February 13-14, 1945 (killing at least 30,000). These incendiary raids were intended to turn whole cities into vast crematoria. After Dresden, Churchill at length expressed misgivings, but only when this wholesale slaughter threatened to raise a political furor at a time when the war was already clearly won. There is no doubt that if the Prime Minister had felt qualms about the wisdom or morality of indiscriminate area bombing earlier, the RAF bomber offensive need not have been so important an element of British strategy as it was.

It is understandable, though not necessarily justifiable either strategically or morally, that Churchill should have encouraged the bomber offensive during the months when it was the only means of striking back against the Germans. However, Churchill retained the bomber offensive as a centerpiece of British strategy long after Britain, in company with its American ally, could launch other kinds of offensives. The bomber offensive may well have required the support of as much as one-third of Britain's war effort. Some 55,573 airmen were killed in conducting the offensive, and another 9,784 were shot down and captured. These casualties were almost entirely highly trained commissioned and noncommissioned officers. There is scarcely any reason to believe that the bomber offensive was strategically effective in the sense of producing a payoff at all proportionate to the cost. The one conspicuous success of Allied strategic bombing against Germany was in practically destroying the German petroleum and chemical industries late in the war, but to this success the RAF made a minimal contribution. It was mainly the outcome of the US Army Air Forces' daylight effort to achieve precision bombing. Although it would have been difficult for Churchill to over-ride the determination of RAF Bomber Command to prove the efficacy of strategic bombing as the means for independent air power to win wars, nevertheless his prolonged support for the bomber offensive makes it fair to judge it a major failure in the Prime Minister's strategic direction of the war.

Just as without Churchill's leadership there would have been no British bomber offensive of such magnitude, so also without Churchill's and Roosevelt's combined direction of Anglo-American strategy there almost certainly would have been an earlier Anglo-American invasion of France. The wisdom of trying to establish British and American troops in northern France earlier than the spring of 1944 is a question demanding even more subjective judgments than those occasioned by strategic bombing. Nevertheless, a strong case can be made - and was made at the time by American soldiers such as General George C. Marshall, the army chief of staff, and by American civilians such as Henry L. Stimson, the Secretary of War - that a cross-Channel invasion a year earlier than the actual OVERLORD invasion could have brought substantial military and political dividends. Fighting
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earlier in northwest Europe rather than in the Mediterranean area would have permitted the earlier deployment of American divisions already largely formed and trained in 1942. It would have placed the Allies earlier in terrain where, unlike mountainous Italy, they could invoke their strong suit of superior mobility. Politically, an earlier second front could have both diminished Soviet suspicions of the West and placed the Western powers in a stronger bargaining position vis-à-vis the Soviets in the postwar world.

The strategic decisions that delayed the second front until June 6, 1944, were primarily those of Churchill and especially Roosevelt. Along with most leaders of the British war effort, including the military professionals of the Chiefs of Staff Committee, Churchill consistently preferred peripheral and especially Mediterranean operations against Germany to precede a cross-Channel assault that would occur only after the Nazi empire had already been substantially weakened. Against the preference of many American leaders for an earlier cross-Channel invasion, however, Churchill and the British could not have prevailed without having Roosevelt for a long time on their side. Particularly in the decision for TORCH, the invasion of French North Africa on November 6, 1942, a decision that virtually assured the postponement of the cross-Channel invasion until 1944, was Roosevelt’s inclination to agree with Churchill that cast the die. While the President gave lip-service to a cross-Channel invasion through much of 1942, his leaning toward North Africa instead is evident in a re-reading of the whole record of his remarks on the subject from the first discussions of what became TORCH under a different code name, GYMNASIUM, during the Anglo-American ARCADIA Conference of December 22, 1941, to January 14, 1942. If it had not embraced it, there would have been no North African invasion, with all its implications for the timing of the cross-Channel invasion. Thus the controversial Anglo-American strategy of the war against Germany was mainly a strategy determined not by the armed forces but by civilian leaders.

When we survey the total shape of the war, however, the re-assertion of civilian leadership in the Second World War did not bring about a war much different from the First World War. In large part, this result occurred because the civilian leaders of the Second World War both in the Western democracies and among the dictators had derived from the experiences of the First World War and of the interwar years, with their frustrated hopes for enduring peace, a militarized perception of the world. The civilian leaders might disagree with the military professionals about strategic, operational, and tactical details; but on policy matters they were essentially at one. In the West, Churchill consistently and Roosevelt by the end of the 1930s believed as firmly as any military man in the centrality of military strength if a nation were to survive in an insecure world. Churchill and Roosevelt, like the civilian leaders of all the major powers in the Second World War, were generous in their willingness to allocate national resources to military policy. Both regarded military force and war, for the time being at least, as the foundations of their nations’ roles in the world.

More importantly, the militarized perceptions held by civilian leaders ensured the most fundamental similarity between the Second and First World Wars: that in the second, like the first, all the major belligerents would pursue military victories as complete and clear-cut as could be imagined, and that in consequence the belligerents would persevere in the struggle until one of the rival coalitions dropped out from exhaustion. The much debated unconditional surrender policy of the anti-Axis United Nations coalition was not so different from the war aims entertained by all the principal belligerents in both this and the earlier world war, including the members of the United Nations coalition even before President Roosevelt publicly announced the policy at the Casablanca Conference on January 23, 1943. Particularly after the accession of Winston Churchill as Prime Minister on May 10, 1940, the British government had already transformed the war from one begun for the defense of Poland into a struggle for the absolute extirpation of the Nazi regime in Germany. In the Far East, Japan in the Second World War had largely dropped the restraints that distinguished its policy in the First World War. While the Japanese leaders recognized that they could not conquer the United States and would eventually have to negotiate peace with the Americans, they sought a complete enough military victory that Washington would have to abandon all pretensions toward exercising power in Asia and the western Pacific. A military victory of such magnitude was almost certainly beyond the capacity of Japan in the 1940s.

Thus in both world wars – and even more in the second than in the first – the war aims of all the major powers were so ambitious that the reach of each threatened to exceed its grasp. Just as in the First World War, the British aim of humbling Germany once more locked Great Britain into the Western Front strategy so that the operational and tactical imperatives of the Western Front framed all other dominated strategy and policy; once again the powers had to tailor policy and strategy to fit the cloth that could be cut by those operations and tactics for which their initial war aims offered no alternative. Instead of using war as an instrument of policy, nations allowed operational and tactical feasibility to dictate policy. Instead of remaining an extension of policy, war developed its own momentum, to which policy had to be subordinated.

Critics of American policy and strategy in the Second World War have often alleged that the United States excessively subordinated long-range national purposes to the short-run expediencies of military strategy. In truth, however, the United States of all the major powers succumbed least to this reversal of appropriate priorities, because the United States was the only power with enough military, economic, and financial strength to prevent its objectives on the battlefronts from becoming utterly disproportionate to its means. Thus, for example, in the midst of the war the United States could afford to build itself with attempting through economic and diplomatic pressures, to ensure the kind of postwar world economic order it desired – as wide as possible an arena for free trade and American investments, and secure American access to such coveted raw materials as petroleum and uranium. In the midst of war the United States could afford even to bully its British ally, to create a postwar economic order in which the dollar would displace the pound sterling as the principal medium of international exchange, and in which imperial preference would no longer hamper American commerce. No other power could afford to pay so much attention in wartime to postwar goals.
Instead, every other power, including the Soviet Union, was until almost the end so fearful of failing to attain its immediate military purposes that operational and tactical considerations constricted strategy and overshadowed all policy objectives except those implied by the quest for absolute defeat of the enemy, in which the inordinate ambitiousness of twentieth-century war had locked everyone.

Collectively, these volumes portray the sacrifice of the major share of the tactical, operational, strategic, and policy-making effectiveness of the armed forces of the twentieth-century great powers on the altar of inordinate ambition. Whenever any of the principal armed forces was able for a time to establish effectiveness in the four realms of tactics, operations, strategy, and policy simultaneously, it was because for the moment at least that armed force was not required to seek the unattainable. The key to making armed forces effective is to tailor their responsibilities and goals to the limits of tactical, operational, strategic, and policy-making practicability.

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