

MILITARY  
EFFECTIVENESS  
VOLUME 3  
THE  
SECOND WORLD WAR  
NEW EDITION

Edited by

**Allan R. Millett**

*University of New Orleans  
The Ohio State University, Emeritus*

**Williamson Murray**

*The Ohio State University, Emeritus*



**CAMBRIDGE**  
UNIVERSITY PRESS

CAMBRIDGE UNIVERSITY PRESS  
Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore  
São Paulo, Delhi, Dubai, Tokyo, Mexico City

Cambridge University Press  
32 Avenue of the Americas, New York, NY 10013-2473, USA  
[www.cambridge.org](http://www.cambridge.org)  
Information on this title: [www.cambridge.org/9780521737517](http://www.cambridge.org/9780521737517)

© Williamson Murray and Allan R. Millett 1988  
© Cambridge University Press 2010

This publication is in copyright. Subject to statutory exception  
and to the provisions of relevant collective licensing agreements,  
no reproduction of any part may take place without the written  
permission of Cambridge University Press.

First published by Unwin Hyman 1988  
New edition published by Cambridge University Press 2010

Printed in the United States of America

*A catalog record for this publication is available from the British Library.*

ISBN 978-0-521-42591-9 Hardback  
ISBN 978-0-521-73751-7 Paperback

Cambridge University Press has no responsibility for the persistence or  
accuracy of URLs for external or third-party Internet Web sites referred to in  
this publication and does not guarantee that any content on such Web sites is,  
or will remain, accurate or appropriate.

[9]

## *Challenge and Response at the Operational and Tactical Levels, 1914–45*

Lieutenant General John H. Cushman

### *Introduction*

‘War is the great auditor of institutions.’ So wrote Correlli Barnett in his *Swordbearers*.<sup>1</sup> The historians whose work is collected in these volumes have audited the performance of seven national military institutions in two world wars and in the long period between those wars. Only two nations, the United States and Great Britain, were victors in both wars. One, Germany, lost in both. Russia emerged defeated in the first and as a victor in the second. Italy and Japan were on the winning side in the first, and then lost in the second. France won its first war, collapsed after ten months of the second, and then with new forces raised abroad and at home after liberation by Anglo-American forces could claim to be a ‘victorious’ power at the end.

Each of the three periods was a time of *challenge* to national military institutions on the one hand and of *response* by those institutions on the other. For these nations and their military institutions, the two wars were exhausting, terrible, life or death audits. What can we learn from the manner in which these military institutions responded or failed to respond to the challenge of war and of what was, in the perspective of history, a period of two decades of preparation for war? Perhaps even more important, how can we apply what we learn to our current American military institutions?

Our twenty-one authors assessed the political effectiveness of military institutions according to three criteria, the strategic effectiveness according to seven criteria, the operational effectiveness according to six, and the tactical effectiveness according to seven. Although the political and strategic direction of national military forces and those forces’ effectiveness in the

operational and tactical spheres each have their effect upon the other, this summarizing chapter will address primarily the operational and tactical spheres. These two fields make up the military professional's fundamental line of work. They comprise the realm in which the people of a nation and their political leadership have a right to expect professional military competence.

Appreciating the difficulties as well as the limitations involved, we asked the authors to give a subjective 'grade' to the performance of the national military institutions they had surveyed for the period covered. While some were reluctant, each finally did so.<sup>2</sup>

Reviewing the authors' texts and the ratings in the operational and tactical areas, I credit the contributing historians with rating fairly and well. The results for tactical performance were as follows:

Two As	Germany in 1919–40 and in the Second World War
Seven Bs	Germany in the First World War Japan in the First World War and (based on the first years in these periods only) in 1919–40 and the Second World War The Soviet Union in 1919–41 and (eventually) in the Second World War
Four Cs	The United States in the Second World War The United States in 1919–41 The French and British (eventually) in the First World War (both Fs initially) Russia (overall) in the First World War (a composite of a mixed bag of ratings until the late-1917 collapse)
Four Ds	Italy in 1919–39 The United States in the First World War
Four Fs	Great Britain in 1919–39 and the Second World War France in 1919–39 and through its June 1940 defeat in the Second World War Italy in the First and Second World Wars

The distribution of grades for operational performance was about the same:

One A	The United States in the Second World War
Nine Bs	The United States in 1919–41 Germany in all three periods (with an A only in the first phases of the First and Second World Wars) The Soviet Union in 1919–41 and (eventually) in the Second World War Japan in the First World War and (again, based on the first years in these periods only) in 1919–40 and the Second World War I
Five Cs	The United States in the First World War Great Britain in 1919–39 and in the Second World War Russia in the First World War (again, a composite until Russia's collapse) Italy in 1919–39

Four Ds	Great Britain (overall) in the First World War (rated F-D initially, rising to C-B) France (overall) in the First World War (like Britain, F-D initially, rising later) Italy in the First and Second World Wars
Two Fs	France in 1919–39 and the first ten months of the Second World War

Thus in the spheres of operations and tactics, where military competence would seem to be a nation's rightful due, the twenty-one 'auditors' reports' suggest for the most part less than general professional military competence and sometimes abysmal incompetence. One can doubt whether any other profession in these seven nations during the same periods would have received such poor ratings by similarly competent outside observers.

Why should nations wish for a high order of operational and tactical performance? Is performance in these areas essential for success in war? One might assume that success in war requires an order of operational and tactical performance at least equal to that of one's enemy. However, the verdict is considerably mixed. In the First World War, victory came to neither Britain nor France until their operational and tactical performances finally reached what their respective historians called a B. The same was true for the Soviets in the Second World War. On the other hand, one must note the surprisingly low ratings given to Britain in the Second World War.

These audits clearly underline that high-quality operational and tactical performance is not enough (see twice-defeated Germany, highly rated in operations and tactics but whose political and strategic direction received an F in both wars). Moreover, Japan's Bs in operations and tactics early in the Second World War were nullified by its failing performance in the political and strategic spheres.

Leaving aside whether effectiveness in operations and tactics is essential for victory, it is clear that first-rate operational and tactical performance is a *virtue to be sought* by those who are responsible for military forces. One must recognize that competence on the battlefield saves time and conserves lives.<sup>3</sup> These are the kinds of things military institutions are supposed to do right. Yet from these auditors' reports, most national forces failed to achieve a high performance in either category. We need to understand how and why this happened. There well may be lessons in these accounts that are useful for those charged with seeking operational and tactical excellence in our own military institutions today.

In analyzing the performance of military institutions, one must speak of *challenge* and *response*. One dimension of an individual's or an institution's response is 'insight.' How well did individuals responsible in a situation perceive reality? How well did they understand the nature of the challenge that confronted them? The other dimension of response is 'execution.' Understanding the situation in whatever way they did, how well did those in positions of responsibility bring about the measures that they saw as necessary to meet the situation? In other words, how well did they adapt to what

Clausewitz called ‘real war’ as opposed to war on paper? From these volumes we can conclude that, for the highest quality of response to challenge, military institutions and individuals must have a high rating in both insight and execution.

Let us apply this method of portrayal to one of the major successes in this series of audits – that of Field Marshal William Slim in Burma from spring 1942, when he arrived ‘to help pick up the pieces,’ to 1944 and 1945, when the corps and divisions in his command were among the most effective of the Second World War.<sup>4</sup> First of all, insight is surely there; Professor Murray describes how Slim grasped the essentials of his situation and saw what needed to be done. Second, and equally important, the execution of Slim’s response left little to be desired. His program took time, but its organized, systematic, and consistent pursuit brought success.

Slim’s achievement encompassed the full range of tactics and operations, including logistics and administration. Especially noteworthy, moreover, was the independence of thought and action within a common scheme that he instilled in his senior commanders – a *sine qua non* for true tactical and operational competence in a military organization. We can credit Slim with very high marks in both insight and execution.

In his performance, Field Marshal Slim followed the basic approach that holds true for successful leaders at any level of command – from the tank company and infantry battalion, or naval ship, or fighter squadron, on up. In the simplest terms, it is this:

- (1) Take responsibility for the command.
- (2) Diagnose the situation accurately and set the objective.
- (3) Develop an appropriate action plan.
- (4) Execute the plan well.

Slim was a major field commander, far from the base that generated his resources. He had relatively little influence on what was provided to him. His genius lay in making extraordinarily good use of the human as well as material resources that were provided. Wise enough to know that the kind of change he sought would take time, he made good use of that time through a consistent, insightful, and orderly program of action.

In his description of the 1917–18 performance of Admiral William H. Sims, US Navy, Professor Nenninger gives a similar example, except that Admiral Sims’s influence extended deeply into determining the kind of resources provided.<sup>5</sup> In 1916 the United States had adopted a naval building program to create a fleet of sixty capital ships by 1925. Nenninger points out that upon America’s entrance into the war, the navy sent Sims to London to determine naval requirements and eventually to become the American naval commander in Europe. The admiral quickly realized that German submarines were the greatest threat to our strategy and recommended that the United States concentrate on building anti-submarine craft and merchant shipping. Although other naval leaders continued to push for the 1916 program, the administration accepted Sims’s recommendation and postponed capital ship construction.

As the destroyers and anti-submarine craft arrived, Sims as operational

commander deployed and employed them effectively to escort convoys as they passed through the most dangerous U-boat zones. In this case, the insight and execution that led to the US Navy's successful response to challenge were in large part a cooperative accomplishment, shared by Sims overseas and the naval establishment in the United States.

The accounts in these volumes suggest that success in meeting the operational and tactical challenge demands both insight *and* execution. One without the other will not do. For example, Professor Knox describes how Italy's army chief of staff in 1941 assessed the abilities of that army's junior officers.<sup>6</sup> General Roatta underlined their deficiencies as follows:

- (1) insufficient capacity for command (lack of authority . . . , timidity . . . , uncertainty . . . ),
- (2) inadequate knowledge of the mechanical side of weapons,
- (3) limited knowledge of small-unit tactics,
- (4) rudimentary knowledge of communications equipment and organization,
- (5) insufficient knowledge of how to read topographic maps, and little understanding of the compass,
- (6) insufficient knowledge of field fortification,
- (7) inadequate conditioning for long marches, and
- (8) total administrative ignorance.

Although, from Professor Knox's account, General Roatta may have deserved a rating of 8 (on a scale of 1 to 10) or so in insight, the institutional actions to correct the conditions diagnosed among junior leaders seem to deserve little better than a 3 (on the same scale); consequently, the Italian Army suffered from inadequate junior officer leadership until its 1943 surrender.

Likewise, without the appropriate insight – that is, without an institution's leadership understanding the situation confronting the institution – any plan of action, however systematically developed and vigorously carried out, will succeed only by accident and will generally lead to disaster.

Examples of lack of insight abound in these volumes. Perhaps the classic is that of the leadership of the French Army in the 1919–39 period, described in telling fashion by Colonel Doughty.<sup>7</sup> Doughty's analysis is devastating. He concludes that, although between the wars 'the French had paid close attention to the tactics, organization, equipment, and training of their forces . . . France failed to prepare a military force as effective as that of its enemy.' In 1939, 'France was prepared to go to war with a system that was supremely logical and closely coordinated.' However, the army had tragically 'come up with the wrong formula.' The French nation perished in 1940 because its military leaders in 1919–39 performed at something like level 2 in insight (on a scale of 1 to 10), even though they may have deserved perhaps an 8 in the execution of the action plans stemming from that faulty insight. With great efficiency, France's army built the Maginot Line, trained its infantry and artillery systematically in the wrong tactical conceptions, and prepared for the next war with a self-satisfied assuredness that it possessed all the answers.

In this full period, 1914–45, perhaps the most stirring success in challenge and response on the part of a major operational force and by the home base that generated and supported it is that of the Royal Air Force's Fighter Command. From 1936, when Britain first formed Fighter Command, to the Battle of Britain, which began in July 1940, the RAF created a fighting organization that saved the British people and nation from invasion.

Professor Murray's mention of this performance is brief,<sup>8</sup> but other sources tell the full story.<sup>9</sup> The scene was grim indeed in the mid-1930s. Having seized power in 1933, Hitler was rearming Germany and building a mighty air force. Fact, such as the Japanese bombing of Shanghai in 1932, and fiction, along the lines of a series of novels predicting catastrophic air attacks, had combined to terrify the public. Indeed, near panic was beginning to appear, which directly contributed to the British appeasement policy of 1938.<sup>10</sup>

The British had thus far neglected air defense; they had built the Royal Air Force on the doctrine that 'the bomber will always get through.' The founder of the RAF, Marshal of the Royal Air Force Sir John Trenchard, said in 1923 that 'Fighter defense must . . . be kept to the smallest possible number . . . in a sense only a concession to the weakness of the civilians, who would demand protection.' Prime Minister Stanley Baldwin said in Parliament in 1932 that 'The only defense is offence, which means you have to kill more women and children more quickly than the enemy if you want to save yourselves.'<sup>11</sup>

Unprotected by a fighter force, the British Isles in the mid-1930s lay open and exposed to air attack. Fifty years later, it is still instructive to study how a 'small number of dedicated men' from 1934 through 1939 managed to prepare 'the aircraft and the air force that would be required for modern war'. Among these men were Lord Swinton, Secretary of State for Air, 1935–8; Chief of Air Staff Sir Edward Ellington, 1933–7; aircraft designers such as Reginald Mitchell at Supermarine and Sydney Camm at Hawkers; and scientists such as H. T. Tizard, P. M. S. Blackett, and R. A. Watson-Watt.

Also among them was Air Chief Marshal Hugh C. T. Dowding, who in 1936 moved from his position as research and development chief of the RAF to take command of the newly formed Fighter Command. In the face of strong institutional opposition within the RAF itself to air defense, his task was not easy. Yet in November 1935 the Hawker Hurricane made its first test flight. The Supermarine Spitfire's maiden flight came four months later. These two superlative fighters, each with eight wing-mounted machine guns, went quickly into production. Four years later, in the hands of RAF pilots, they won the Battle of Britain.

In the meantime, under the cloak of deepest secrecy, British scientists developed radar, an invention that revolutionized the conduct of air defense. Moreover, the manner of its development in the closest harmony with the airmen and the organizations that would depend on it reached a standard for military-technical cooperation in command and control systems development that has probably not been equaled since.

In this milieu, Hugh Dowding established Fighter Command's organization and concept of operations. In July 1940, after Dunkirk's evacuation and despite the loss of the fighters sent unavailing to the Continent, Fighter



Command stood as Britain's sole defense against the *Luftwaffe*. Brilliantly using and conserving both fighters and pilots, supported by a maintenance organization that performed miracles of aircraft repair, linked by communications installed by the British Post Office, receiving reports from radars and from ground observers on hilltops and rooftops along the air routes into England from the Continent, and directing the battle hour by hour and minute by minute from control centers that they had designed and built, Dowding and his command won the Battle of Britain.<sup>12</sup> The British political-military air establishment – especially Dowding, his staff, and his commanders – deserves the highest of marks for both insight and execution.

Notwithstanding that it encompasses the base that generated and supported the operational forces as well as the operational forces themselves, this Fighter Command case also illustrates the basic, fundamental requirements of leadership:

- (1) Take responsibility for the command.
- (2) Diagnose the situation accurately and set the objective.
- (3) Develop an appropriate action plan.
- (4) Execute the plan well, adapting to conditions.

However, in this case the effort was a collective endeavor, with several changes in key personalities over a five- or six-year period, with no identifiable single leader either in charge or fully accountable for failure, and with a 'rolling' action plan, the details of which evolved as the situation developed.

The very nature of large military institutions, such as a nation's army, navy, or air force, or its armed forces as a whole, makes it difficult to have anything other than a collective, or shared, responsibility. Unlike the shaping of an infantry battalion, combat ship, or fighter squadron, which a keen commander can carry out effectively in a matter of months, and even unlike the bringing of a major command to a high state of effectiveness (as Slim did in Burma over a two- to three-year period), the improvement of such large military institutions as a nation's army, navy, or air force *involves a very long period of time* – one that stretches out for half a decade or more and usually includes the terms of office of two or more chiefs of staff.

As in any walk of life, the competence of a military organization is a function of its leadership from the top down to the bottom of its chain of command. Gay Hammerman and Richard G. Sheridan have given us a striking example of the significance of leadership in the tactical sphere.<sup>13</sup> They compare the effectiveness of twenty-four representative divisions of the European theater in the Second World War – twelve German, five British, and seven American. Using comparative techniques, they rate these divisions in order of battlefield effectiveness. With only one exception, the 88th Infantry Division of the US Army, the first ten divisions are German.

In their study, Hammerman and Sheridan investigate why the 88th Infantry Division was such an exception to the performance of the other American and British units. They researched such factors as the quality of manpower, the strength of the division's cadre, the division's stability, the length and

quality of training, the administrative support provided by higher headquarters, and the fashion in which replacements were introduced into the division in combat. Each of these factors had an effect, but in none did the 88th Division differ in any significant fashion from the other American divisions studied whose performance by no means matched that of the 88th. The essential difference discovered was the *quality of the division's top leadership*.

In scores of interviews with veterans of the 88th, Hammerman and Sheridan sought the specific characteristics of top leadership. What they found was

strict discipline, courage, aggressiveness, personal presence in the front lines, insistence that *every job* be carried out properly, efforts to build esprit de corps, prompt relief of any subordinate who could not or would not do his job, and professional competence. In training, strict discipline was the most prominent characteristic; in combat, courage and personal presence in the front lines were most prominent.<sup>14</sup>

The study provides compelling profiles of the division commander, Major General John E. Sloan, the assistant division commander (and later division commander) Brigadier General Paul W. Kendall, and the three regimental commanders, Colonels Joseph B. Crawford, James C. Fry, and Arthur S. Champeny.

To conclude that quality of leadership is decisive is no profound discovery. From time immemorial, and around the world's military forces today, we know that superior battalion, squadron, and warship commanders and their seniors in the chain of command can take ordinary people and produce extraordinary results. What is of interest to us is the answer to the question, how can military institutions generate leadership at the operational and tactical levels that is for the most part, and in general, superior? One cannot rest satisfied with the explanation that Slim was an exceptional case, or that the 88th Infantry Division was one of a kind. Those who are responsible for generating our military forces have the *obligation to seek such standards as the normal level of professional military performance*.

On what does the generation of such a quality of leadership depend? How do those who govern military institutions go about building in peacetime (and in war, should war come) a pattern of highly competent battle leadership? In the accounts in these volumes, Professors Ziemke and Jessup describe the methods that Josef Stalin used from the mid-1930s through the end of the Great Patriotic War.<sup>15</sup> Ziemke describes how Stalin first destroyed the Red Army's officer corps and then rebuilt it. Believing that the officers represented a threat to him personally, to the party, and to the nation, in that apparent order, Stalin carried out a program of extermination of national military leadership unequalled in its scope and ferocity in modern times, and perhaps in history. In 1937-8, Stalin saw to the execution, exile, or disappearance of the chief of the armed forces General Staff, the commanders of the air force and the navy, the inspectors of artillery and armor, 13 of 15 army commanders, 57 of 85 corps commanders, 110 of 195 division commanders, and 220 of 406 brigade commanders. In all, more than 35,000 officers were

liquidated or removed, a number that included 90 per cent of all generals and 80 per cent of all colonels.

Having destroyed those officers who showed *any* independence of thought and silenced those younger officers with talent who might not toe the mark, Stalin then brought to high-level command and staff positions officers who were more remarkable for their political loyalties than for their ability. Rightly enough, Jessup says that 'Stalin's greatest skill was in terrorizing those around him.' Even though Stalin's purge dealt the Red Army a body blow, Jessup goes on to say that Stalin's 'ability to select highly competent personnel to direct the war both on the battlefield and on the home front is a tribute to his leadership.'

This was 'leadership' of the most ruthless kind; those senior commanders who did not produce satisfactory results on the battlefield were done away with, encouraging a kind of fear-driven competence on the part of those who remained. To produce the necessary junior officer leadership, the Soviet Army in 1942 instituted a program of training officer candidates in a three-month course at the field army (later front) level. Jessup points out that

some 540,000 platoon-level officers were produced in this manner. In the middle of the war, when the issue of [national] survival became less immediate, officer training was extended to one year for infantry officers and eighteen months for specialists. Although these officers, and most of their superiors, were generally rated inferior to their German counterparts, they were obviously successful enough and were in large enough numbers to win the war.

Win the war the Soviet Union did, with a herculean effort at terrible cost that among other accomplishments produced operational and tactical performance at a B level. The effect of this 1937–45 experience and the forty years since on the quality of Soviet officer leadership from top to bottom today may be uncertain, but there are no grounds for complacency.

Now let us take a look at Germany. Under the personal command and under the strategic and indeed the operational direction of a dictator as abhorrent as Stalin, the German Army's officer corps in the Second World War rendered a battlefield performance that was, in general, measurably superior to that of any of the armies with which it fought.

That this is so seems no longer a matter of dispute. We have the testimony of senior commanders who fought the Germans, like Field Marshal Sir Michael Carver, who has said:

There is no doubt that the Germans, of all ranks, were more highly professional as soldiers than the British. Their knowledge and practical application of the weapons available to them was in almost all cases superior . . .

They were tough, skillful, determined, and well-disciplined soldiers.<sup>16</sup>

We have historians' judgments, Russell F. Weigley's among others. In the epilogue to *Eisenhower's Lieutenants*, Weigley sums up his comparison of relative military performance in Europe from D-Day in 1944 through the end of the war:

Pitted against the German army, the United States Army suffered long from a relative absence of the finely honed professional skill of the Germans, officers and men, in every aspect of tactics and operations . . . [The German Army] remained qualitatively superior to the American army, formation for formation, throughout far too many months of the American army's greatest campaign.<sup>17</sup>

Trevor N. Dupuy, in *Numbers, Prediction, and War*, has convincingly laid out measurable evidence of German superiority.<sup>18</sup> Dupuy's comprehensive and methodical analysis of scores of division-level actions in North Africa, Italy, and the Western Front from the Normandy landings to the war's end has established a 20 to 30 per cent combat superiority on the part of the Germans whenever they faced British and American troops in equal numbers – meaning that roughly eighty German troops were the battle equivalent of a hundred British or American. This German battlefield superiority was a product of, on the whole, superior combat leadership on the part of the German Army's officer corps.<sup>19</sup>

What made the Germans so good? One can simply say that even though the officer corps expanded some sixty times from 1934 to 1944, the German Army had thoroughly indoctrinated its officers in how to fight well, and that these leaders behaved in battle as they had been trained. Professor Förster writes that this behavior was 'heavily shaped by a cultural tradition that dates back to Imperial Germany.'<sup>20</sup> The officer corps of the German Army in 1939–45 was partially the product of a tradition of battlefield excellence reaching back to the early 1800s when Scharnhorst, Gneisenau, Clausewitz, and others instituted fundamental reforms in the Prussian Army. In turn, successive generations of senior Prussian and German leadership perpetuated those reforms. The German officers in the field in 1939–45 were the products of a system of schooling and unit training that for a century had taught a consistent doctrine of battlefield leadership and developed a chain of command that uniformly practiced what it preached.

To define in the simplest terms the essence of what German officers were taught and what they practiced, one can go to a document published in 1953 by the Historical Division, Headquarters, United States Army, Europe (USAREUR).<sup>21</sup> In 1949 the US Army had published a new edition of its *Field Manual 100–5, Field Service Regulations, Operations (FM 100–5)*. This comprehensive revision of its basic operational doctrine was in essence the US Army's description of its way of fighting based both on its traditions and on its Second World War experience. The USAREUR Historical Division gave this field manual to a panel of German officers, consisting of Generaloberst Franz Halder<sup>22</sup> and four generals and two colonels selected by him. The Historical Division described the panel as 'distinguished members of the former German General Staff who had had extensive experience in the preparation of training literature, particularly that dealing with tactical doctrine, and who had proved their worth as commanders in combat.'

Halder and his fellow officers were asked for 'a critical analysis and evaluation' of this 1949 version of *FM 100–5*. Their 156-page report begins

by describing succinctly the 'main objectives in training in leadership' as seen by the German Army. These were:

- a) A great capacity for independent action on all levels of command.
- b) Adherence to the mission; that is a moral obligation to act at all times in the spirit of the assigned mission.
- c) Avoidance of a fixed pattern of action.
- d) The ability to make (complete), that is clear and unambiguous decisions and, in carrying them out, to establish a definite point of main effort.
- e) A constant concern for the welfare of the men and the conservation of their combat efficiency.<sup>23</sup>

Read these five points. Absorb their meaning. They sum up almost everything there is to say about how to fight. And the point is that *this is not simply what the German field manual said; this is what German officers generally did on the field of battle.*<sup>24</sup>

Among other trenchant comments, the Halder report has this to say about the US Army's 1949 version of *FM 100-5*:

[W]ar is full of imponderables and surprises. Only a commander who can depend on his own ingenuity and that of his men will be able to make the improvisations dictated by the moment and master situations not described in the manuals. True, in order to do this, he will have to know exactly what it is he wants to do . . .

The attempt to find a recipe for every single situation with which the lower echelons may be confronted, occasionally results in a cut-and-dried 'recipe' far more detailed than is needed.<sup>25</sup>

If the achievement of an equivalent level of skill in the battle leadership of the US Army were simply a matter of rewriting the doctrine, there would be few problems – but to bring about the actual application of doctrine in practice, there's the rub.

How did the Germans do it? One commentator argues that the secret of the German Army officer corps' performance was not a matter of genetic superiority, or an inherently superior German military ability, or a product of German culture, but rather a matter of Germany's 'more effective military institutions,' in particular 'the Prussian General Staff, which later became the German General Staff.'<sup>26</sup>

We should examine that thesis. Even recognizing that for more than a century Prussian, then German, officers operated within the framework of a Great General Staff, we need to ask if that particular mechanism is the only way today to bring about the institutionalizing of operational and tactical excellence in an officer corps, and in particular in the American officer corps. What the German General Staff system provided was, in essence, the following:

- (1) very high standards of performance;
- (2) a school system that, with historical and other study and thought, developed and fostered the spread of those standards and indoctrinated the officer corps with what those standards meant in practice;

- (3) a chain of command that understood what those standards meant and saw to it that they governed what officers did in units and on staffs; and
- (4) a system of selection for responsible positions that insured that those selected met the standards and screened out those who did not.

Does that require adopting the German General Staff concept? One would think not.

Now, here is a troubling aspect of the 1939–45 German performance. Professor Förster writes that not only was the German Army's battle leadership heavily shaped by its Imperial German roots, but that it also derived from 'the amalgamation of national socialism and the German soldierly tradition.'<sup>27</sup> Förster (whose opinion of Halder's ethics, incidentally, is not high) says that 'the ready acceptance of [Hitler's] racial goals by the military establishment and most of the officer corps should not be overlooked.' He alludes to 'the deep-seated hostility to 'Russian bolshevism' which permeated the officer corps throughout the Weimar period' and says that when Hitler, in planning the attack into the Soviet Union, made known his determination 'to convert the *Wehrmacht* into an instrument of extermination alongside the SS . . . [i]t was the *Wehrmacht*'s senior officers and their legal advisers who cast Hitler's ideological intentions into legally valid form.' In Förster's words, 'Professionalism and ideology went together well.'<sup>28</sup>

Later, Förster quotes Field Marshal von Brauchitsch saying in the winter of 1940–1 that 'there could be not the slightest doubt about the fact that the training of the soldier to a determined and aggressive fighter could not be separated from a lively education in the National Socialist sense.' Förster describes how the German company commander was expected not simply to 'forge the company as a compact unit and both lead the individual man into and keep him within the battle-community (*Kampfsgemeinschaft*)' but was also tasked with the ideological training of his troops toward 'an emotional instinct of the *Volksgemeinschaft*'s needs and a staunch belief in the Führer.'<sup>29</sup> (*Volksgemeinschaft* translates roughly as 'people's community' and connotes the sought-for common identity of the German people and their army.)

It is repugnant to think that Hitler's evil notions had anything to do with the high quality of German operational and tactical performance in 1939–45; but, as Professor Förster writes, '[d]ifficult though it is to discuss the ideological bond between Hitler and the military within the framework of (military) effectiveness,' it is necessary to do so.

Förster's thesis bears on fundamental issues of motivating troops and their combat leaders in battle. Conduct of battle is not simply a matter of 'doctrine' and 'training.' Effective unit performance in this most stressful of human experiences is above all a matter of personal character and of leadership in all its dimensions and intangibles.

'Effective' the Nazi motivation method for the German Army may have been – and, likewise, Stalin's and his successors' own brands of motivation may have been effective for the Red Army. While we must be aware that our opponents may well utilize such methods of motivation as were used by Hitler and Stalin in the Second World War, these are not the methods for the American soldier. The challenge for America is to produce, in our own way,

battle leadership like that of the 88th Infantry Division – as exemplified by Generals Sloan and Kendall and Colonels Crawford, Fry, and Champeny – and to do it in every combat formation.

However, for superior military effectiveness in the operational and tactical realms, military forces require more than superior troop leadership. Also needed are the right tools for war. This means:

- (1) good weapons that are commensurate with the need and are in the right mix;
- (2) having those weapons in the hands of well-organized military formations; and
- (3) a fighting style in which both leaders and troops are indoctrinated and that is right for the conditions.

The desired combination is this: material that is right, organization that is right, and ways of operating that are right – all for the here-and-now – *plus* superior troop leadership.

These studies underline that the combination is rarely achieved. For example, in his treatment of the American military in the interwar years, Professor Spector says that

a general appraisal . . . tends to suggest that the army overemphasized the central role of foot infantry and neglected the role of tanks and mechanization; that the navy overemphasized the big-gun battleship at the expense of aviation, anti-submarine, and amphibious warfare; and that the semi-autonomous Army Air Corps tended to overemphasize bombing at the expense of air defense and ground support roles. Only the Marine Corps, with a narrowly defined mission, totally dependent on the larger services for support, appears to have emphasized a balanced all-arms approach to combat.<sup>30</sup>

Professor Spector might have gone on to say that for the United States the interwar period ended with the Pearl Harbor disaster. Here, the audit of war revealed the most fundamental flaws in the American approach to multi-service operational command in the field.

What went wrong? What caused things to turn out this way, in 1919–41, in the American operational and tactical realms? And what must our military institutions do today to prevent the audit of war at some future time from making an equally damning assessment? In other words, how do a nation's military institutions generate the right mix of people, organizations, weaponry, and ways of operating? Does it just 'happen that way'? Is that how the Roman legions came about? Or the Royal Navy of Lord Nelson's time? Or the mobile armies of Genghis Khan? No, it's not 'chance' that creates superior military institutions and their forces, but men. When results are superior, there are guiding hands. When results are inferior, there are hands that should have guided but did not. There is also 'process,' but not a simple self-executing process, or a process that anyone can carry out. A high order of institutional and individual insight – coupled with plain, ordinary efficiency – is needed for successfully carrying out the process.

Today the Congress by law has assigned the responsibility to 'organize, train, and equip' effective forces to the four services themselves (army, navy, air force, and marine corps) under the three military departments (army, navy, and air force). For bringing the four services together so that they function as a single coordinated team, the responsibility belongs to the Secretary of Defense, assisted by the Joint Chiefs of Staff, and to those who hold unified command in the field. Far more complex and amorphous than leading a division or corps, this process depends on collective institutional action. In the American army today it has become the work of an immense, multi-layered mechanism called 'combat developments.'

To a degree, the mechanics of the process are important; but concentrating on the process risks losing sight of the substance. Ordered or not, guided or not, the process takes place – in each service and in their multi-service composites wherever they may be. For the enlightened development of forces, the basic sequence is the same as in field command. Someone, or some group of people, has to

- (1) take responsibility,
- (2) diagnose the situation accurately and set the objective,
- (3) develop an appropriate action plan, and
- (4) execute the plan well, adapting to changing circumstances.

Obviously, leadership is linked to all this. Like troop leadership, it is a combination of insight and execution – but these are exercised at the collective, institutional level. The personal insight and executive ability of the most senior officers is the decisive component.

Thus it was, when time was short and the danger great, with the Soviet Army from mid-1940 to June 1941. In June 1940 Hitler had just swept Britain from the Continent and forced France to its knees. The German Blitzkrieg had been awesome. Stalin feared that the Soviet Union would be next; but in the winter of 1939–40, fighting the Finns, the Soviet Army had shown grave weaknesses. Professor Ziemke describes how Stalin, his Communist Party chieftains, and his generals played for time and *urgently coped*. They got less time than they wanted, but when Germany struck in June 1941 enough had been done to prevent total disaster.<sup>31</sup>

The usual problem is not one of short-term urgent change but rather of longer-range evolution; war, although always possible, is usually not imminent. Here consistent, wise leadership must be exercised over a long period of time. These histories indicate that this process was difficult enough forty to seventy years ago. How much more demanding it is in this age of nuclear weapons and microchips, smart missiles and spacecraft, night vision and robotics, not to mention 'low-intensity conflict'! The very range and complexities of combat that are open to our current military forces suggest that the future wars that we fight may well not be the war for which we have prepared. We will have to adapt to the real conditions, not to what we had expected to find.

These twenty-one studies tell us that an indispensable ingredient of effective



response is *insight: understanding the situation*. Insight might be highly personal at the level of the division or even at the major force. Insight will of necessity be collective, or institutional, at the level of a nation's services and often with a major force such as Fighter Command. Intellect alone does not guarantee insight. Soldierly virtues such as integrity, courage, loyalty, and steadfastness are valuable indeed, but they are often not accompanied by insight. Insight comes from a willing openness to a variety of stimuli, from intellectual curiosity, from observation and reflection, from continuous evaluation and testing, from conversations and discussions, from review of assumptions, from listening to the views of outsiders, from a study of history, and from the indispensable ingredient of humility. Analysis, including systems analysis, can contribute to insight but it cannot substitute for it.

Certainly the responsible officer must be a man of decision, willing to settle on a course of action and to follow it through. But the reflective, testing, and tentative manner in which insight is sought does not mean indecisiveness. It simply raises the likelihood that the decided course of action will be successful, because it is in harmony with the real situation that exists.

All too often insight is gained too late, and through adverse experience. In his recent book on Vietnam, General Bruce Palmer, Jr., US Army, Retired, has described how the United States could have 'done things differently' in 'probably . . . a more feasible alternative' to the war of attrition that American forces pursued. Palmer writes that we should have used American troops only in the northernmost part of South Vietnam. We should have deployed them (with South Vietnamese and South Korean divisions) along the seventeenth parallel's demilitarized zone and into Laos, blocking the Ho Chi Minh Trail so as to cut off overland infiltration of support from North Vietnam. Furthermore, we should have relied on the Vietnamese civil authorities, armed forces, and militia – with US advice and assistance – to take care of the pacification of their own countryside.<sup>32</sup>

Were these retrospective insights of General Palmer available in 1965? The answer is most certainly yes; they were not difficult to reach. I know of one case, unpublished as yet, in which they were offered. The problem is how to arrange the nature of American military institutions so that the senior generals and admirals in charge of affairs will arrive at correct insights at the time of challenge – and, having so arrived, will possess the skills to effect the systematic effort for which those insights call.

One must recognize that the obstacles to insight are many: one's own propaganda, accepting the conventional wisdom, superficial thinking, blindness to reality, self-satisfaction, complacency, and arrogance. Professor Carl Boyd describes some of these characteristics and the consequences for the Japanese Navy in 1919–41. He notes the 'fleet-versus-fleet duel' mind-set of the Japanese Navy in 1919–41 that derived from that navy's successes around the turn of the century. He cites 'the vested interests of most traditionally-minded admirals' and says that 'in the areas of convoy escort and ASW, the Japanese Navy became a victim of its previous rigid thinking.' He then writes that a 'high price would be paid [for this rigidity], for during the Second World War US Navy submarines accounted for the destruction of about 55

per cent (1,314 vessels, 5.3 million tons) of all Japanese naval and merchant vessels lost.’<sup>33</sup>

Doughty describes what happened in France, in 1919–40: the inexorable logic once certain assumptions were made, yet the failure to objectively examine those assumptions; the fixation on total mobilization as the only response; the fundamental misunderstanding of the kind of war for which Germany was preparing; the misconception of the role of armor and of movement in war; a fixed image of how the war would go; and the stifling effect of senior officer self-satisfaction. Even to the time of the German attack in May 1940, the French, and the world, saw the French Army as a formidable military force. Yet it was hollow, in decay within. The consequence was the defeat of France in less than six weeks.

Obstacles to execution are equally abundant: inefficiency, poor organization, vested interests, lack of resources, lack of interest, lack of determination, laziness, and acceptance of the status quo. Both Italy and Britain between the wars provide examples of the difficulties of ‘execution,’ assuming that the insight was present (which it was, to some degree). For Britain, there were the pervasive horror of the First World War, the demands of imperial defense, and the unwillingness of the political leadership to spend money on military forces. For Italy, there was, among other factors, sheer and complete ineptitude in the management of resources and manpower.

In the case of Vietnam, General Palmer faults the *insight* of senior American military leaders in the 1960s, and in particular the collective insight of the Joint Chiefs of Staff. Whether, with superior insight, the execution would have been adequate is another question. At least there would have been a chance for success.

Our histories tell us that – whether it be through lack of insight, or execution, or both – the consequence, in sum, is military folly and failure. In the Vietnam case a riveting memorial at the west end of the Mall in Washington, bearing the names of some 58,000 Americans who deserved better of their military institutions, symbolizes the consequences. The consequence has also been a legacy of distrust of national leadership in military matters, not to speak of a society that has yet to recover from its psychic wounds.

How can we arrange our American military institutions so that they meet the imperatives at the operational and tactical levels – so that they do not fail when put to the test but rather succeed? The primary answer is, above all: Those who are responsible for our military institutions have to concentrate on developing *leadership of the right kind*. This is self-evident; ‘leadership’ should be an objective. But it is not self-evident what that superior kind of leadership is – or how to go about assuring it.

The American military must develop its own standards, but it could do worse than to start with those listed by General Halder and cited earlier in this chapter:

- (a) A great capacity for independent action on all levels of command.

- (b) Adherence to the mission; that is a moral obligation to act at all times in the spirit of the assigned mission.
- (c) Avoidance of a fixed pattern of action.
- (d) The ability to make 'complete', that is clear and unambiguous decisions and, in carrying them out, to establish a definite point of main effort.
- (e) A constant concern for the welfare of the men and the conservation of their combat efficiency.<sup>34</sup>

Then ways must be found to bring about conditions that produce the desired quality of operational and tactical leadership. We neither need nor want to reproduce the German General Staff system, and we must insist on a far higher performance by our military in the political and strategic realms. However, we might best begin with the characteristics of the system that produced generations of superior German performance on the field of battle:

- (1) *very high standards* of performance;
- (2) *a school system* that, with historical and other study and thought, developed and fostered the spread of those standards and indoctrinated the officer corps with what those standards meant in practice;
- (3) *a chain of command* that understood what those standards meant and saw to it that they governed what officers did in units and on staffs; and
- (4) *a system of selection* for responsible positions that insured that those selected met the standards and screened out those who did not.

The fundamental issue is: What kind of leadership is our high command interested in? The top military echelon of each of our military institutions (each service and the Joint Chiefs of Staff) must decide the kind of leadership it wants and the basic standards of acceptable performance. Then all subordinate institutions must fall in line – field commands and schools alike – to foster the development of that kind of leadership, and to ensure that those selected for responsible positions meet those standards. *The schools especially must be positive influences for excellence.* Indeed, they are the critical component of the second essential: an *insight-producing climate* that encourages – and derives from – open, honest, and reflective thought.

This does not mean, however, that generals and admirals generate and prescribe from the top down. This is thought that also, even mostly, comes up from below – stimulated by the experience and intellectual effort that officers go through in the field and by their research and thought in schools. Among other duties, the duty of generals is to observe, to think, and to *listen*, even to majors and colonels.<sup>35</sup> Break down the compartments – wherever they exist – of service parochialism, of 'turf,' of hierarchical layering. Let insight evolve from an atmosphere of open, shared thought.

Insight also stems from honest audits, in the absence of the audit of war. Whatever ideas emerge from the process for developing forces and their ways of fighting, the composite must be tested and subjected to an experience that closely resembles that of war. An honest audit of current and programmed systems for command and control of multi-service forces would reveal them compartmented, data-clogged, slow, and vulnerable. Ways are emerging for achieving an honest audit. With intelligently designed computer support, we

should be able to provide commanders and staffs as well as their communications links a practical experience in the conduct of warfare. The most telling lessons are those of experience, of history in which one has actually participated. Such simulations of warfare for commanders can let them experience 'military history written in advance.'

Finally, there is plain, ordinary *efficiency*, essential for converting insight into concrete results. One major step toward efficiency would be to cut back drastically on the bloated, yet still 'overworked,' headquarters in the Pentagon and in stateside provider commands, and to find the time to address the real business of preparing for war. It does not take an immense doctrinal and combat development establishment to generate superior insight. Indeed, such an establishment suffocates insight. Better to do away with half of it or more, and let an open, enlightened, research-oriented – as well as instruction-oriented – school system and the open participation of multi-service field commanders come up with the insights. Nor does it take an immense matériel establishment to convert the products of American industry into weapons and other gear to be used by troops. In this vein, we could do worse than to adopt the recommendations which have come from the Packard Commission.

The military institutions of the United States are entering a process of fundamental change. The Congress has enacted legislation that will encourage the development of multi-service professional expertise and will mandate its manifestation in the Joint Chiefs of Staff, in the joint schools and colleges, and in the unified commands.

The new institutional alignment – which establishes a vice chairman of the Joint Chiefs of Staff, second in rank to the chairman, and which makes the joint staff responsible directly to the chairman – will, one hopes, make possible the emergence of responsible, objective, independent, coherent, continuing, and responsive multi-service military thought. A key feature of this new environment will be that unified commanders will have increased authority and influence, and the *means* to exercise that authority and influence. This will re-align, in favor of the commands, the relationships between those who employ the forces and the services that provide them. In doing so, it can (among other effects) bring efficiencies in the evolution of command and control systems and make possible the achievement for multi-service commanders of an insight of twenty years ago: 'The major problem today in the design of a command and control system is how to bring the commander and staff into the decision-making process.'<sup>36</sup>

In 1958 the Army's Chief Signal Officer wrote:

On the battlefield of 1962, tactical commanders will have increased command control of their firepower and mobility through new communications and automation. The battle group commander will be able to use a small, mobile computer and associated parts of the automatic data processing system to calculate enemy concentrations . . . collate intelligence, calculate march tables, and perform other tasks . . . Automatic data processing equipment at division level will consist of data recording and

storage devices and small-capacity mobile computers . . . Data introduced in the division system will be transmitted to the mobile computers through the Area Communications System. This data will help the various commanders review the situation; it will help them analyze the probable results of various courses of action (both friendly and hostile) and thus will expedite decisions. The equipment will also be used to compile essential reports – daily personnel summaries, requisitions by units, strength reports, projections on a schedule basis – the mass and unwieldy flow of which have always been a problem to combat echelons. Similarly, the intelligence staff will be able to obtain current information more quickly.<sup>37</sup>

Only now is General O’Connell’s quarter-century-old concept about to be implemented; but it is being realized in a data-clogged, hardware-oriented form that fails to take into account the essentials of operational style. This in turn stems from the lack of institutional insight on how to match technology with the commander’s operational style and then how to place that technology into the field.

Fifty years ago Hugh Dowding and his Fighter Command, working with P. M. S. Blackett, R. A. Watson-Watt, and others on the miracle of radar, showed us how to marry, with great speed and efficiency, technology and operational style in a fighting command. If our military institutions had possessed the sense of history and the insight to emulate Dowding in the 1960s and 1970s, how different things would be today and in the 1990s! But they did not see it then, nor do they seem to see it now.

One can hope that, as the military institutional reforms which have been legislated are carried out over the next few years, the matters of *leadership*, of a *climate that fosters insight*, and of *efficiency* will receive from the senior military professionals in positions of responsibility the emphasis that is their due. One can hope that, in their wisdom toward the achievement of insight, those senior military professionals will unleash the creative thought and energy of their schools and colleges (especially the joint ones).

The twenty-one authors of these histories have given us a good deal to think about. Now it is up to the senior American military leadership to present the American people with the combination of execution and insight that nations have the right to demand from their military institutions but that they have rarely gotten. If they do not, future historians will judge them deficient when their product is audited by the test of war.

## Notes

- 1 Correlli Barnett, *The Swordbearers: Studies in Supreme Command in the First World War* (London, 1963), p. 10.
- 2 Some words of caution are in order. Among them: Ratings are highly subjective. They encompass *all* a nation’s forces, land, sea, and air. Each rating is an average; in most nations’ audits and for most periods, major deviations can be cited from that norm. The period of 1919 to 1939 or 1941 was for some nations (Italy and Japan) in

- large part of a time of actual fighting; for others (e.g., the US) this was a time of no combat whatever and the test came at the outbreak of war; for others (e.g., the Soviet Union and Germany) there was during this period the combat experience of the Spanish Civil War.
- 3 For example, see how superior German effectiveness in the operational and tactical spheres paid off in speed of decision and cost in lives against the British and French in May–June 1940.
  - 4 Williamson Murray, 'British Military Effectiveness in the Second World War,' Chapter 3 of this volume, pp. 120–1.
  - 5 Timothy K. Nenninger, 'American Military Effectiveness in the First World War I,' Chapter 4 of Vol. 1, pp. 125, 133
  - 6 MacGregor Knox, 'The Italian Armed Forces, 1940–3,' Chapter 4 of this volume, p. 165.
  - 7 Robert Doughty, 'The French Armed Forces, 1918–40,' Chapter 2 of Vol. 2.
  - 8 Murray, 'British Military Effectiveness,' p. 114.
  - 9 See John Terraine, *The Right of the Line: The Royal Air Force in the European War, 1939–1945* (London, 1985), and Derek Wood and Derek Dempster, *The Narrow Margin: The Battle of Britain and the Rise of Air Power, 1939–1940* (New York, 1966).
  - 10 See Williamson Murray, *The Change in the European Balance of Power, 1938–1939* (Princeton, N.J., 1984), and Wesley Wark, *The Ultimate Enemy* (Ithaca, N.Y., 1985).
  - 11 John Terraine, *The Right of the Line*, p. 13.
  - 12 With displays and photographs, the Battle of Britain exhibition at the RAF Museum at Hendon in northwest London vividly tells the story. The text at the photograph of Hugh Dowding says, in effect, that in any list, however short, of military men of whom it can be said that 'he saved the nation,' Dowding's name must be included.
  - 13 Gay Hammerman and Richard G. Sheridan, *The 88th Infantry Division in World War II: Factors Responsible for Its Excellence* (Fairfax, Va., 1982).
  - 14 *Ibid.*, p. 35 (emphasis in the original).
  - 15 Earl F. Ziemke, 'The Soviet Armed Forces in the Interwar Period,' Chapter 2 of Vol. 2, pp. 2–3, 13–14; John E. Jessup, 'The Soviet Armed Forces in the Great Patriotic War, 1941–5,' Chapter 7 in this volume, pp. 256, 263.
  - 16 Michael Carver, *Tobruk* (London, 1964), p. 255.
  - 17 Russell F. Weigley, *Eisenhower's Lieutenants: The Campaign of France and Germany, 1944–1945* (Bloomington, Ind., 1981) pp. 729–30. For the performance of the German Army, suffering heavy losses on the Eastern Front after three years of combat, see also Max Hastings, *Overlord* (Greenville, N.C., 1984).
  - 18 Trevor N. Dupuy, *Numbers, Prediction and War: Using History to Evaluate Combat Factors and Predict the Outcome of Battles*, (Fairfax, Va., 1985).
  - 19 See esp. Martin van Creveld, *Fighting Power*, (Westport, Conn., 1982).
  - 20 Jürgen Förster, 'The Dynamics of *Volksgemeinschaft*: The Effectiveness of the German Military Establishment in the Second World War,' Chapter 5 of this volume, p. 179.
  - 21 Generaloberst Franz Halder, *et al.*, *Analysis of U.S. Army Field Service Regulations*, Historical Division, United States Army, Europe, 1953.
  - 22 General Halder had been chief of the German Army General Staff from 1938 until 1942 when, according to the biographical summary in the USAREUR text, he was removed by Hitler 'owing to differences of opinion on matters of strategy and ethics, and because of alleged obstructionism.' In July 1944, the day after the attempt on Hitler's life, the Gestapo arrested Halder, and he spent the rest of the war in prison.

*Military Effectiveness*

- 23 Generaloberst Franz Halder, *et al.*, *Analysis of U.S. Army Field Service Regulations*, p. 7.
- 24 See Williamson Murray, 'German Response to Victory in Poland: A Case Study in Professionalism,' *Armed Forces and Society*, Winter 1981.
- 25 Halder, *Analysis*, pp. 8–9.
- 26 Trevor N. Dupuy, *A Genius for War: the German Army and General Staff, 1807–1945* (Fairfax, Va., 1984), pp. 300–2.
- 27 Förster, 'Dynamics of *Volksgemeinschaft*,' p. 179.
- 28 *Ibid.*, pp. 195–6.
- 29 *Ibid.*, pp. 205–6.
- 30 Ronald Spector, 'The Military Effectiveness of the US Armed Forces, 1919–39,' Chapter 3 of Vol. 2, p. 84.
- 31 Ziemke, 'Soviet Armed Forces,' pp. 26–9.
- 32 Bruce Palmer, Jr., *The 25-Year War: America's Military Role in Vietnam* (New York, 1985), pp. 183–8.
- 33 Carl Boyd, 'Japanese Military Effectiveness: The Interwar Period,' Chapter 5 of Vol. 2, p. 148.
- 34 Halder, *Analysis*, p. 7.
- 35 See esp. Timothy Lupfer, *The Dynamics of Doctrine: The Changes in German Tactical Doctrine during the First World War* (Leavenworth, Kans., 1981), 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. Fubini, 'We Must Improve Control of Tactical Forces,' *Armed Forces Management*, July 1965, pp. 52–7.
- 37 Maj. Gen. J. D. O'Connell, 'Command Control Capabilities,' *Army Digest*, Feb. 1958, pp. 6–10.