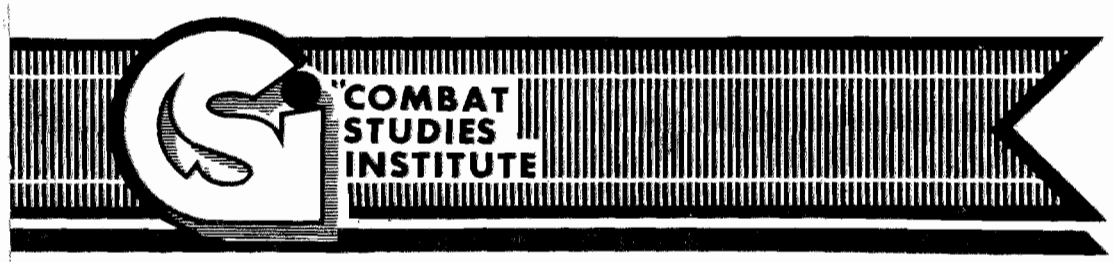
The Directed Telescope: A Traditional Element of Effective Command

by
Lieutenant Colonel Gary B. Griffin



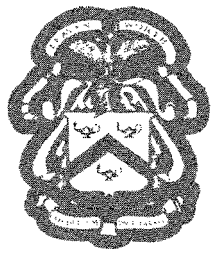
FOREWORD

"War is the realm of chance. No other human activity gives it greater scope: no other has such incessant and varied dealings with this intruder. Chance makes everything more uncertain and interferes with the whole course of events." So wrote Karl von Clausewitz in his classic, *On War*. This inherent uncertainty in war, when combined with exertion, danger, and chance, produces an ever-present friction. The commander's role throughout military history has been to reduce the uncertainties of war for his own side and increase them for his enemy. Notwithstanding great advances in the arts and sciences of command and control, the best commanders have traditionally used trusted subordinates as extensions of their own minds as a way of penetrating the fog of war. This technique has come to be called the "directed telescope."

The Directed Telescope: A Traditional Element of Effective Command, by Lieutenant Colonel Gary B. Griffin, was first published by the Combat Studies Institute in 1985 as a CSI Report. Since its publication, *The Directed Telescope* has been widely read across our Army and quite a few others, and as the Persian Gulf operations began several months ago, the study took on a particular relevance and timeliness. Lieutenant Colonel Griffin examines the historic role played by liaison officers, aides-de-camp, and staff observers as extensions of the commander. The study focuses on the relationship between several great commanders and their liaison officers, as well as the systems, techniques, and organizations they employed. With this study in hand, modern—and future—commanders can draw on an expert analysis of various command and control expedients as they create new versions of the directed telescope.

July 1991

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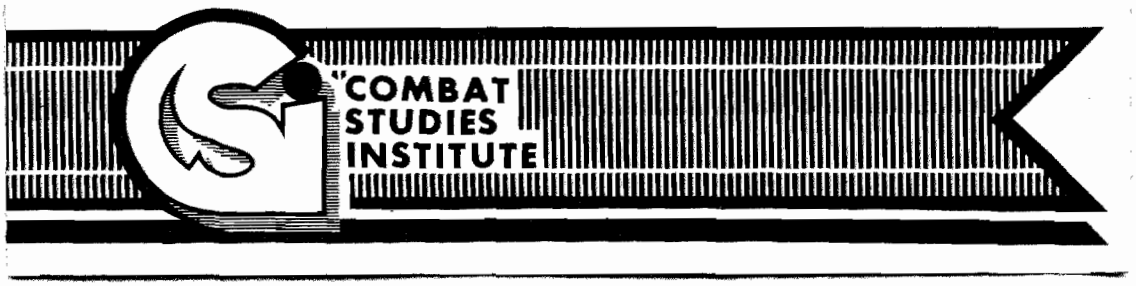


CSI publications cover a variety of military history topics. The views expressed herein are those of the author and not necessarily those of the Department of the Army or the Department of Defense.

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PREFACE

This Combat Studies Institute study was originally prepared in response to a request by the United States Army Organizational Effectiveness Center and School (OECS) for historical support. Specifically, the OECS asked CSI to conduct a historical study of commanders' use of aides, liaison officers, observers, and other representatives in the course of campaigns and battles. Intending to use the study to support the development of new doctrine concerning the role of organizational effectiveness staff officers in combat, the OECS posed a number of investigative questions:

- What functions did such personnel perform during combat?
- In what ways did such personnel enhance the command and control of units, generate initiative, create agility and depth, and contribute toward the synchronization of combat power?
- What special preparation and training did these personnel receive?
- What qualities, attributes, competencies, and capabilities did these personnel possess?
- For whom did these personnel work?
- How did these personnel go about performing their duties?
- How were these personnel selected?
- Who used these personnel? What are the similarities and differences between the battlefield effectiveness of units that used such personnel versus units that did not?
- What authority did these personnel possess?

Within these guidelines, this study proceeds from a general description of aide and liaison systems of the prenineteenth century to a more detailed assessment of those of the Napoleonic and modern periods of military history. The broad mandate of the study and the limited time available prohibited a more detailed analysis. Furthermore, throughout this report, the historical cases selected depended on the availability of source material at the Command and General Staff College. Nevertheless, the historical examples used illustrate the effectiveness of aides, liaison officers, and other agents of the commander in the command and control process. Historical evidence reveals, for the most part, that the function, authority, and utility of these types of

officers were highly situational and, as a result, varied widely over time and space. Their use and organization have seldom been formally defined, especially regarding their intimate relationships with commanders and the means in which mutual trust and confidence were instilled.

While the 1985 OECS request established the research objectives for this study, no attempt was made to link the study with developing organizational effectiveness doctrine. Nevertheless, it was hoped that the material presented would assist the OECS in the formulation of doctrine for organizational effectiveness staff officers on the AirLand Battlefield and, for that matter, liaison officers in general. Moreover, this study should be valuable and stand on its own merits by virtue of the information and analysis that it provides on the subject of techniques of command.

I. INTRODUCTION

> If you can fill these positions with proper officers . . . you might hope to have the finest army in the world.
>
> General Robert E. Lee
> 21 March 1863

A study of command, a principal element of the art of war, reveals that its most fundamental characteristics have remained unchanged throughout time. Although command functions appear eternal, the command system, or the means through which command is exercised, has experienced centuries of almost continuous development. Consequently, organizations, techniques, and procedures for command have been constantly redefined in order to meet the demands of an increasingly sophisticated and complex art. Despite modification, however, common patterns exist within the great diversity of command systems. In fact, the degree of similarity in systems is remarkable. Many command system characteristics seem to transcend time. They appear as historical constants. There are several distinctive features of the traditional "line and staff" organization that have remained virtually unchanged. They stand unaltered in theory as well as application despite centuries of organizational variations and technological advances. One of the more important fixed elements of command is what historian Martin Van Creveld has called the "directed telescope." Van Creveld asserts that, from "Plato to NATO," command in combat has consisted of a search for certainty more than anything else. The commander's unending quest for certainty in battle has, however, never been fully satisfied. As a result, commanders at every level have been historically presented with a continuous and elusive challenge to develop the most rapid, reliable, and efficient means of obtaining tactical information, communicating critical orders, and controlling subordinate units.

The directed telescope or, more specifically, the use of specially selected, highly qualified, and trusted young officers as special agents or observers for the commander has been a fundamental method of responding to this persistent challenge. These young officers have been popularly referred to as the "eyes" of the commander. Throughout military history, the use of officers in this capacity has been critical in obtaining battlefield command information for the commander. The utility of

these special agents, whether they are aides, liaison personnel, or special staff officers, has been proven in war after war for thousands of years. The directed telescope has survived despite successive waves of information-gathering communications technology. From the loyal aides-de-camp of the Napoleonic era to the British command liaison officers of World War II, command and staff liaison systems, an often overlooked technique of command, have played an extremely important role in successful command and control at the tactical, operational, and strategic levels of warfare.

As stated earlier, the trusted subordinate used in his role as a skilled observer and objective adviser is a traditional tool of command. While this tool may appear to be an anachronism, modern commanders and military theorists can ill afford to ignore the time-honored directed telescope concept in developing command systems capable of meeting the Army's AirLand Battle—Future command and control responsibilities. A historical analysis of this effective command and control expedient can assist the Army in creating a modern updated version of the directed telescope.

The directed telescope system is as old as the military staff itself. Even the earliest commanders in history employed orderlies of some type to assist them in the execution of command. As a result, a general survey of the development of command systems employing staff officers offers a useful background for examining similar techniques in the modern era, especially those since the start of World War II. Certain periods of military history have been more productive than others in the evolution of the military staff and the directed telescope. Thus, it is fruitful to trace the development of aide, adviser, and liaison systems over three distinct periods in the history of warfare: the prenineteenth-century, Napoleonic, and modern eras.

II. THE PRENINETEENTH-CENTURY ERA

Surprisingly, the armies of this period displayed a remarkably high degree of efficiency, even by modern standards. These armies had functional staffs that included aides-de-camp. The aides' primary duties were to assist their commanders in administering army affairs and helping commanders execute command responsibilities.

A study of Alexander the Great's staff organization (inherited from his father Philip) reveals many strong similarities to more modern systems. Alexander's staff was designed to support his widespread campaigns and included officer specialists for engineering and siege operations and younger officers called *somatophylaxes* who served under Alexander's personal direction except when entrusted with the command of subordinate units.[1] Among other duties, these junior officers served as aides-de-camp and heralds, and their responsibilities included assisting in the command and control of the often widely separated columns of Alexander's army as couriers and observers. They were, in essence, the young Greek conqueror's "eyes." As heralds, Alexander's aides communicated with commanders of opposing camps and, obviously, held Alexander's full trust and confidence in order to be entrusted with such sensitive and critical details.

Also included within Alexander's staff was a small advisory circle of highly qualified trusted staff officers, among them several *somatophylaxes*, who acted as an informal council of war and who routinely performed special missions and filled high military and administrative positions. Thus, Alexander's staff council and *somatophylaxes* set an early pattern for the directed telescope system.

Alexander's example of using young officers as aides in exercising command and control (a practice probably predating Alexander) continued with the staff developments of the Roman Army under Scipio Africanus Major (237—183 B.C.) and Julius Caesar (100—44 B.C.). As with Alexander, Scipio and Caesar both employed junior officers on their staffs. Their volunteer aides, called *contubernales*, acted as observers and trusted couriers for top-priority missions.[2] Additionally, both Roman leaders kept a close circle of these subordinates as mess companions. This group primarily consisted of aides-de-camp and close political and military advisers. The *contubernales* appeared

to have the same general duties and responsibilities as Alexander's *somatophylaxes*, that of gathering critical information and performing important missions for the commander. Essential qualities for these aides were good judgment, military skill, and, most of all, absolute trust and loyalty to the commander.

Whatever their official titles, these primitive forerunners of modern command and staff liaison systems demonstrated that even the earliest military commanders had an appreciation of the many problems associated with exercising effective command and control during campaigns and battles. This concern continued through the Middle Ages. For example, King Edward III used his aides with great effect as information-gathering agents and couriers at both Crécy and Poitiers.[3] For the most part, the original observer and adviser role of these early directed telescope systems changed little until the Napoleonic era, when the military staff underwent dynamic changes resulting in the emergence of formal aide-de-camp and liaison systems.

III. THE NAPOLEONIC ERA

The advent of firearms in the sixteenth century required military formations to become more widespread and, as a result, more disciplined. During the era of Gustav Adolphus and Wallenstein, emphasis was placed on better organization and control. Staffs grew in size and structure, and positions were defined. Aides-de-camp began to function as special assistants to the commander. For example, toward the end of the Seven Years' War (of the mideighteenth century), Frederick the Great, after the deaths of his many senior advisers, selected junior officers of tactical aptitude and expertise and trained them as command observers. Recognizing the increased complexity of warfare, Frederick called on these officers to assist in controlling the line troops and assisting other staff officers in coordinating more specialized functions (administration, supply, and so forth).[4] Although Frederick still exercised direct command, his system may be considered an early forerunner of the Prussian general staff liaison system of a century later.

The proliferation of firearms during this period also caused a revolution in tactics as well as in command. The scope of battle expanded with a corresponding increase in chaos. The "fog of war," now accompanied by gunsmoke, became even more dense. Combat formations could no longer be effectively controlled by a single man. Consequently, aides-de-camp made their first formal appearance as command observers and messengers. Commanders used their aides to help them exercise control over battles. The aides literally became the commanders' "eyes, ears and voice," as well as the primary means of obtaining the vital information that the field commanders required to maintain effective command and control over their rapidly growing, increasingly widespread, and decentralized forces.

Virtually every major commander of the Napoleonic period used aides in the same manner. However, many historians consider the Duke of Marlborough's use of aides-de-camp in a liaison role at Blenheim in 1704 as the best example prior to Napoleon. Positioning himself at the center of his army, the duke used aides extensively to communicate orders to his flanks. Once a battle had commenced, young aides provided him with updated information as he moved about the battlefield. The effectiveness of this arrangement allowed the duke to position himself at the most critical point of his line. Thus, when an

opportunity developed to deliver a decisive blow, he was invariably at the point of greatest importance and readily available to influence the action.

The duke's aides were personable, above-average junior officers who were able to judge the terrain as well as the tactical situation. F. W. von Zanthier, a famous military theorist of the era, stated that they clearly "understood how important it is to transmit an order exactly, correctly estimate the situation, and be sufficiently enterprising to ensure a decisive opportunity did not pass by."[5] The ability of these officers to assist in accurately conveying the commander's intent to subordinates, coupled with their duties as reliable observers, is clear. They were the earliest prototype of the aide-de-camp and liaison systems of Napoleon, Wellington, and, well over a century later, Field Marshal Bernard L. Montgomery.

The Napoleonic era brought about wholesale changes in strategy and tactics and probably the greatest revolution ever in the art of command. Napoleon's command structure incorporated the first fully comprehensive staff organization, and his use of both high- and low-ranking aides to assist him in controlling the Grande Armée is well documented. Napoleon, perhaps more than any other commander before him, emphasized the absolute necessity of having critical command information available to him at all times. The emperor knew full well the value of personal observation, and he used his aides extensively to gather information and to convey orders to his subordinate commanders. However, Napoleon's aides were not simply limited to gathering tactical and operational information; they supplied strategic information as well.

As with every commander, Napoleon relied heavily on the routine reports of his commanders and staff. Nevertheless, he often found them lacking in detail, thus not fully useful. Also, unit reports frequently neglected to express the more intangible aspects of a unit's status—like leadership, morale, and esprit. If subordinate commands did address these vital areas in reports, they were often less than objective and sometimes totally biased. To keep him informed on the significant conditions within his various commands and to verify his subordinates' reports, Napoleon used his aides as a directed telescope to augment the regular reporting system. Napoleon viewed the formal staff system as totally inadequate when reporting what Van Creveld refers to as "less structured information." The emperor-general also turned his telescope toward the enemy on occasion and on

the terrain where campaigns were to be fought. It was Napoleon's use of aides and his system of formal reporting procedures that contributed to his leadership techniques becoming a wholesale revolution in military command.

Napoleon used a dual system—his formal staff and his aides and liaison officers (a group of six to thirteen lesser-grade officers)—for cutting through established command channels to gather time-sensitive information. The emperor's general-grade aides-de-camp, his lower-ranking liaison officers, and his commissioned orderlies were young, active, and in the "full flower of their mental and physical power." Their duties were both broad and diverse, ranging from carrying battlefield messages to reconnoitering entire countries and negotiating surrender terms. Periodically, aides were also called on to accomplish strategic missions, such as bearing important diplomatic messages to foreign heads of state. Napoleon's aides-de-camp, as a result of their sensitive duties, had to possess savoir faire and an ability to get along with and be trusted by subordinate commanders and staff officers of higher rank. They had to be well-trained, professional soldiers; precise in their observations; able to isolate problems; and, perhaps most of all, capable of discriminating between vital and nonvital tactical information. The aides also had to master the operational philosophy of their emperor, understand his intent fully, and be able to answer subordinate commanders' questions. Napoleon's aides often spoke in the name of the emperor and, as a result, were respected as possessing his utmost confidence. Napoleon's instructions to General Bertrand provide an example of the type of missions Napoleon's aides performed:

> Tommorrow at dawn you depart and travel to Worms . . . make sure all preparations for crossing the river by my guard are being made. You will then go on to Kassel to make sure the place is being put in a state of defensive and provisioned. Taking due security precaution, you will visit the fortress of Hanau. Can it be occupied by a coup de main?[6]

Another example of an aide's orders, in the context of verifying the accuracy of a subordinate's report, is a mission given to Lebrun:

> You will first visit the Corps of the Duke of Regis and inform me about his person. You will copy me a picture of his entire Corps. You will report on the state of his infantry, artillery, trains, magazines and hospitals also the rumors circulating in and around the corps, in brief anything that might interest me.[7]

Although younger officers were sent on more limited missions, the objectives were virtually the same—collecting specific information on the fighting condition of the Grande Armée, gathering intelligence, and assisting in the control of forces in battle. Napoleon's younger, lower-ranking aides-de-camp were handpicked, often coming from noble families with a military tradition. Two years' troop service was the only basic prerequisite for selection. Beyond that, however, they had to be loyal, dedicated officers, both mentally alert and physically fit.

Napoleon's aide and liaison officer system played an instrumental role in the command and control of the best organized army that history had seen until then and was the model for several similar arrangements of the modern era. His directed telescope system enabled him, as the commander of the Grande Armée, to circumvent the command hierarchy as needed. The use of aides-de-camp gave him the means to focus on any one part of his army and obtain the specific, sometimes intangible, and often vital information required for successful operations.

Noting the effectiveness of Napoleon's use of aides, one of his principal adversaries, the Duke of Wellington, employed a similar system. A common practice within the British Army of the Napoleonic era was that each general officer was allowed at least one aide-de-camp, lieutenant generals were permitted two, and commanders of forces were allotted as many as they needed. During the Peninsula campaign, Wellington, because of his high command position, had six aides-de-camp ranging from lieutenant to lieutenant colonel.[8] The relationship between the famous British commander and his aides was so close that he once stated that even in retirement he must have his young aides at his side. Wellington's subordinates performed the same basic roles as Napoleon's but were of special use in gathering intelligence. Perhaps of even greater importance, however, Wellington's aides, like those of Napoleon, helped compile information on the condition of his own forces.[9]

During the remainder of the nineteenth century, armies throughout the world followed the examples set by Napoleon and Wellington in using aides and liaison officers. The large armies of the American Civil War proved to be no exception. During the Civil War, which has often been considered the last great war of the Napoleonic era and the first one of the modern era, the use of aides in a liaison role by several famous commanders, both Union and Confederate, provides an excellent example of an early American version of a directed telescope system.

IV. THE MODERN ERA

The American Civil War

Several famous Union and Confederate commanders differed in their approach to command procedures. For example, Generals Ulysses S. Grant and William T. Sherman made extensive use of young aides in a directed telescope role. Like other Civil War commanders, they used their aides primarily to assist in the command and control of their forces, perform sensitive missions, and gather critical information on enemy as well as friendly forces. On the other hand, many leading Confederate generals failed to use their aides to the full effect, limiting them strictly to a commissioned courier role.* The Confederates' failure to use any truly effective command and staff liaison system often frustrated their greatest military leader, General Robert E. Lee. Eventually, as a result of numerous command and staff failures, attributable mainly to Lee's ineffective means of obtaining valuable tactical information and the undisciplined conduct of many of his subordinate generals, the general created a corps of officers within the Confederate Army to perform duties strikingly similar to those of a general staff directed telescope system.

As a brigadier general early in the war, Grant had two captains as aides-de-camp. One of them, John A. Rawlins, rose to general officer rank. He ultimately served as Grant's chief of staff and was briefly appointed Grant's secretary of war when the general became president. As can be expected, the number and rank of Grant's aides-de-camp increased with the general's rank. Eventually, as a lieutenant general, he had four lieutenant colonels as aides-de-camp (out of a staff of only fourteen). Lieutenant Colonels Comstock, Porter, Babcock, and Dent were all known for their good judgment, great personal courage, professional competence, and ability to communicate effectively with others.[10] They all had abundant field experience and were young, active, and fully prepared to perform any duty called for by their chief. They acted as Grant's "eyes" on countless occasions throughout the war. Their role in battle, however, was especially critical.

Prior to a battle, Grant would communicate his overall intent to his aides, explain how he saw the battle progressing, state

*There are at least two exceptions: Longstreet's "Sorrels" and Forrest's "Gallopers."

his plan of maneuver, and stress the importance of overcoming any delays in the communication of his orders. Grant clearly stated what he expected from his close circle of young staff officers. For example, on the eve of the Battle of Petersburg, Grant provided the following instructions to his assembled aides:

> I want you to discuss with me freely from time to time the details of the orders given for the conduct of a battle, and learn my views as fully as possible as to what course should be pursued on all contingencies which may arise. I expect to send you to the critical points of the line to keep me promptly advised of what is taking place, and in cases of great emergency, when new dispositions have to be made on the instant, or it becomes suddenly necessary to reinforce one command by sending to it troops from another, and there is not time to communicate with headquarters, I want you to explain my views to commanders, and urge immediate action, looking to cooperation without specific orders from me.[11]

The trust Grant had in his young aides-de-camp is as obvious as the heavy weight of their responsibilities.

The relationship between these officers and their army commander, as with Wellington and his aides, was clearly a close one. This strong personal relationship between commander and subordinate, one based on mutual respect, was a trend that became a prime characteristic of many successful directed telescope systems of the future. Grant's aides dined with him nightly in an informal, almost family-like environment. The routine evening discussions, often driven by the events of the day, provided the commanding general with key insights into the status of his army. As with Napoleon, Grant's aides often provided information that he was unable to gather through the more conventional formal reports sent up the chain of command. His aides' observations gave him an accurate impression of the morale and esprit of his soldiers, as well as their overall readiness to engage the enemy.

Grant's aides also performed the more traditional aide-de-camp role of conveying orders in combat. Since the general routinely positioned himself centrally in the field (so he could be found and could issue his orders rapidly), his four aides-de-camp were important in maintaining effective command and control of the often widespread units of the army. Grant's use of his aides, like that of the Duke of Marlborough over 150 years earlier, enabled him, through proxies, to be at the critical point in the line when he was most needed, and on occasion, this proved decisive to the outcome of battles.

Another famous Union general, William T. Sherman, admired the reduced, streamlined effectiveness of Grant's staff. He closely modeled his own small staff after it, especially regarding how to use his aides-de-camp best. As a division commander, Sherman had two aides, both lieutenants. He used these officers extensively to gather information, make observations, verify reports, and convey orders. As with Grant's aides, the two lieutenants rose in rank along with their commander. Even as the commander of the Military Division of the Mississippi, however, Sherman maintained a reduced staff when he was in the field. In fact, Sherman relied heavily on three captains as primary aides during his Atlanta campaign.[12] The effectiveness of Sherman's field staff information-gathering system, and perhaps a hint of the general's overall command philosophy, is reflected in his requiring only a single report—a trimonthly strength report—from his subordinate commands during his hard-driving campaigns.[13]

While Sherman credited technology, especially the telegraph, for improving command and control, he stated that usually the best command and control system for every purpose was paper, pencils, and a good aide. He also proposed that military headquarters, from brigade to army, include among the staff "a couple of young aides-de-camp, habitually selected from the subalterns of the brigade, who should be good riders, and intelligent enough to give and explain the orders of their general."[14] Sherman's campaign successes, like those of Grant, attest to the effectiveness of these generals' almost identical directed telescope aide and liaison systems. Unfortunately, many federal generals did not use their aides as effectively. As a result, they often paid the consequences, stumbling into battles without adequate intelligence while lacking an effective means of controlling their forces once they engaged the enemy.

Although Robert E. Lee used his staff and aides efficiently—especially Colonels Charles Venables, Walter Taylor, Charles Marshall, and Randolph Falcott—many other Confederate commanders did not.[15] Consequently, their overall performance as operational commanders often suffered accordingly. In selecting officers for his staff, Lee considered individual personalities more than professional attributes and, like other commanders of the period, chose junior officers, often much younger than himself. Furthermore, Lee insisted that his staff officers' personalities blend with the overall tone of his headquarters and his unique style of decentralized command and control. Despite

his overemphasis on personality, Lee was an excellent judge of professionalism and individual character for all of his aides. Like their Union counterparts, Lee's aides were known for their coolness under fire, tact, and judgment.

Lee recognized that the Confederacy's severe shortage of experienced "Old Army" staff officers at virtually every level of headquarters prohibited centralized control of tactical operations in the Confederate Army. As a result, he was forced to assume that his armies must function in concert with one another without centralized control. He did not find a staff model adequate to serve the rapidly changing needs of technology, so he relied heavily on simple mission-oriented orders. One biographer, Clifford Dowdy, stated that nothing was required of Lee's subordinate commanders beyond the most rudimentary and fundamental techniques of command. Lee simply saw no need for a directed telescope system early in the war. He assumed that because of the simplicity of his orders, the skilled leadership of his subordinates, and their renowned fighting spirit, his officers would operate effectively within his orders and support his overall intent when he was absent from the battlefield. Lee did not feel it necessary to investigate what was happening in his subordinate commands, let alone verify reports and closely scrutinize the conduct of their operations. After several Confederate tactical setbacks, however, he painfully recognized that he needed to increase the overall effectiveness of his rather loose command and control system and to establish firm control over the undisciplined actions of many of his subordinate commanders. After the Seven Days' Battles, he realized that when in combat he had no way of knowing just how his division commanders were operating in relation to the general headquarters.[16]

Early in the war, Lee recognized the shortcomings of his army's staff system and the failure of his staffs to provide correct and timely information. The weaknesses inherent in appointing relatives, political associates, or old friends to key staff positions, instead of selecting officers with more professional credentials, exacerbated the already dysfunctional Confederate command and control system.* In March 1863, Lee called for the establishment of a separate corps of officers to fill critical positions within the army to correct the chronic

*This "patronage" practice was common in most armies of the period but the rule more than the exception in the Confederate Army and Union militia units.

"information vacuum" problem. He wrote to President Jefferson Davis:

> The greatest difficulty I find is in causing orders and regulations to be obeyed. We therefore have need of a corps of officers to teach others their duty, see to the *observance* of orders, and to the regularity and precision of all movements. . . .

In reference to aides and other staff officers, Lee states in the same correspondence:

> If you can fill these positions with proper officers—not relations and social friends of the commanders, who, however agreeable their company, are not the most useful—you might hope to have the finest army in the world.[17]

Obviously, Lee saw the need for some type of directed telescope system. However, the suggestion by the famous Southern general for a separate corps of trained staff officers and observers is somewhat unique.

World War I

The American Civil War marked the end of one era of military history and the beginning of another. The art of war was clearly in a state of flux during this period. Large conscripted armies with expanded and more specialized staffs became popular. Consequently, by the end of the nineteenth century, aide-de-camp duties had changed drastically. The aides' traditional responsibilities were being redefined by both staff specialization, reorganization, and the rapid pace of communications technology. The formation of general staff systems in many leading armies around the world resulted in the battlefield functions of aides-de-camp being passed to either operations, intelligence, or liaison offices.

With the advent of new weapons and larger armies, the implementation of tactics became further decentralized. Strategic movement of troops and materiel, now firmly tied to railroads, allowed the strategic and operational concentration of forces close to the battlefield. Although the telegraph and railroad enhanced the centralization of command and control, the growth in the size of armies and new weaponry had the opposite effect—spreading armies farther apart. The telegraph made instantaneous communication possible, but it was also extremely insecure, unreliable, and vulnerable. In the long run, its importance to field commanders proved negligible, for even though the telegraph proved instrumental in exercising effective command and control at army level, it was seldom utilized at corps

and division. It was simply an impractical frontline communications system. So, during these early days of the modern era, despite advances in staff organization and technology, commanders still relied largely on staff officers on horseback to monitor the activities of subordinate commands. The directed telescope system may have been modernized and redesigned in theory, but in practice, it remained the same. Prussia's central European wars against Austria and France in the late nineteenth century again showed the utility of the system, despite the advances in technology and the creation of formidable general staff systems by the Prussians, Austrians, and French.

During this period, General Helmuth von Moltke, creator of the first truly modern staff system, also depended on an aide-type liaison system for battlefield information.[18] Within the staff of each Prussian field army, Moltke assigned trusted subordinates—general staff officers who were to supplement the units' official reports with private correspondence. Moltke's officers roamed the battlefield and observed key events as they occurred. They carried important messages and often served as their commander's most effective means of gathering critical information. Assigned to frontline units, his young officers were able to gain details on battles that went beyond their commander's view. As with their aide-de-camp forerunners, they compiled information not included in standard telegraphic reports, freely reporting the intangibles of combat and the bottlenecks to efficiency. Unlike many of their predecessors, however, these officers had a great deal of authority. Carefully selected and trained, they were military experts and analytical observers. These professional attributes made the quality of the late nineteenth-century Prussian directed telescope system extraordinary. Although the Prussian system was imperfect, it proved to be an extremely consistent, trustworthy, and reliable means of keeping high-level commanders informed as to the conditions on the front.

As the all-too-brief phase of World War I maneuver deteriorated into static trench warfare, many headquarters were quickly formed behind the front lines. Housed in comfortable, semi-permanent or permanent facilities and interconnected by a vast complex of telecommunications systems (telegraph, field telephone, and wireless), these headquarters soon assumed total control of the war. As a result of their relative isolation from the front, high-level commanders quickly lost touch with the harsh realities of battle. Major General J. F. C. Fuller describes command conditions during this period in his postwar work *Generalship: Its Diseases and Their Cure*:

> As the general became more and more bound to his office, and, consequently divorced from his men, he relied for contact *not upon the personal factor*, but upon the mechanical telegraph and telephone. They could establish contact, but they could accomplish this only by dragging subordinate commanders out of the firing line, or more often persuading them not to go into it, so that they might be at the beck and call of their superiors. In the World War nothing was more dreadful to witness than a chain of men starting with a battalion commander and ending with an army commander sitting in telephone boxes, improvised or actual, talking, talking, talking in place of leading, leading, leading [Emphasis added].[19]

Headquarters succumbed to the temptation of overcentralizing their tactical operations. It was only natural that operational flexibility was sacrificed for disciplined control. The British Army, for example, was limited to command that could be exercised by wire. British liaison officers simply relayed information or sat idly by representing their headquarters "interests." This ineffective use of liaison and the overreliability on the telephone, the telegraph, and later the wireless severely reduced British command flexibility. Consequently, the operational thinking of many leading staff officers and commanders became stunted. Initiative suffered, and the thinking in the rear headquarters ultimately became as stagnant as the trench-line defenses of the front. Lacking a truly effective directed telescope system, a general headquarters relied solely on telegraphic or telephonic descriptions and appraisals from the front. The only tactical information available originated from divisional headquarters, which were themselves too far from their units to know true combat conditions. This overreliance on technology gave high-level commanders a poor conception of the battlefield and contributed directly to one disaster after another, the crucial Battle of the Somme being one of the best examples.

In that battle, one communications system after another failed to provide an accurate appraisal of the battlefield. Without a directed telescope system, General Sir Douglas Haig, British commander at the Somme, stubbornly stuck to his plan, totally ignorant of actual battlefield conditions. Carrying out the orders of a general headquarters out of touch with reality, intermediate commands threw wave after wave of British infantry units into the line. When it was over, almost 60,000 men had been lost in a single day's fighting. So poor were the communications that it was days before the magnitude of the Somme defeat was realized.

Similar incidents occurred in other battles, including Paschendaele ridge, where the chief of staff of the British armies

in Europe remarked after the battle: "Do you mean to tell me that the soldiers had to fight under such conditions? Why was I never told about this before?"[20] A young British staff officer, Major Bernard L. Montgomery, overheard the chief's remarks and vowed that, if ever he attained high command, he would never be so absolutely ignorant of frontline conditions. A generation later during the next world war, Montgomery developed a directed telescope liaison system second to none.

The German experience in the war with France in 1870 taught them a number of staff lessons that the British belatedly learned in World War I. In the Great War, the Germans resorted to their proven and effective general staff liaison system. General staff officers of higher headquarters visited the front line weekly. Each was assigned a specific section and given a questionnaire for evaluating the state of morale, supply, fortifications, and conditions in general. During battles, as a backup to the more technical means of gathering information, these officers were sent to their assigned areas to gain a direct impression of the fighting. After awhile, these observers developed a personal relationship with the unit commanders of their assigned segment of the front. Eventually, they were accepted and not considered outsiders. As a result, they were able to obtain even more critical and candid information. Unlike the British, the Germans recognized early in the war that their type of liaison, the one originally developed by Moltke some fifty years earlier, enabled commanders to make timely decisions based on actual combat conditions, not ones driven by a conditioned response to a formalized plan.

Seeking a more balanced approach, the French, like their British allies, were determined to maintain centralized control. The commander of the French armies, Field Marshal Joseph Joffre, realized that, while the telephone, the telegraph, and the wireless would enable him to receive information and transmit orders, an improved means of maintaining close command supervision had to be developed. As a result, Joffre created his famous vertical liaison system.

Joffre's liaison officers, a group of young officers, mostly captains and majors, were carefully selected and attached to the operations sections of subordinate headquarters. Their duties were to inspect units, carry instructions, and verify the execution of missions assigned by the general headquarters. On returning from their tours of duty, these officers would report directly to

the commander. Once again, as with previous systems, the greatest value of the system was the reporting of intangible information that never reached headquarters through routine reporting channels. Like the German system, however, there were problems with command relationships due to the excessive authority given some of Joffre's liaison officers (many commanders were relieved due to adverse reports by liaison officers). In that regard, the system was not entirely successful. Nevertheless, despite occasional abuses of authority, the French vertical liaison system served its primary purpose by promoting an understanding of orders up and down the chain of command.[21]

Observing French and German successes, as well as British failures, in exercising command and control, one American officer developed his own somewhat unique command and control system. Colonel George C. Marshall, then chief of operations of the American Expeditionary Forces' First Army, assembled a group of young Army officers—captains and lieutenants—to act as combat observers. Marshall told them what information he wanted from the divisions to which they were to report. Each officer accompanying the division assault formations was directed to carry six courier pigeons and to release the birds at 0700, 0900, and 1500. For the most part, the officers were to provide the location of the front line, accompanied by a brief description of the status of the fighting.[22] Marshall stated that the information provided by these officers, a form of American World War I directed telescope, proved invaluable.

Lessons in command and control from World War I were numerous. Command liaison remained a viable staff principle despite technological advances. Nevertheless, lacking any truly effective liaison system, the British perhaps learned their bitter lesson better than anyone, for as Fuller concluded after the war:

> Formerly there was a general's staff. This was composed of aides-de-camps, not spruce, young officers who do flunkey work, but experienced men who delivered the general's orders and saw that they were carried out. Though this system of contact and control is just as valuable today as it was in the days of Napoleon, it has fallen into abeyance; for the present day liaison officer is far removed from the old-fashioned aides-de-camp.[23]

The Interwar Years

The history of World War I abounds with stories of effective and ineffective command and control systems. Various combat information systems were utilized by virtually every belligerent

and were usually patterned after a formal command and staff liaison network. Fortunately, the many painful lessons learned in command and control techniques during the war were not lost in postwar military education. Interwar-year field service regulations, field manuals, professional journals, and other professional literature reflect the absolute necessity of developing directed telescope-type liaison systems for modern war.

Answering Fuller's call for a "system of contact and control" and studying the many British command failures during the Great War, a postwar British field service regulation stresses that "during battle all commanders in their degree must keep in close and constant touch with the fighting troops."[24] This same regulation cites that a commander's greatest challenge in modern war is to develop an accurate idea of the actual battlefield situation. Once again, Van Creveld's axiom about the quest of war being a search for certainty is recognized. The British regulation calls for liaison officers to keep their commanders informed of *all* combat conditions. As a result, liaison duties in the British Army were greatly expanded and were described as follows:

> The duties of liaison officers are to provide a closer touch between the headquarters concerned than is possible by other means; to convey the higher commander's orders, and, when necessary, forecasts of his intentions, to his subordinate commanders; to bring information of the situation in the forward area to the higher commander at frequent intervals, generally at the end of definite phases of an operation.[25]

French liaison doctrine was also refined shortly after World War I. A high-level military board, headed by Marshal Philippe Pétain, studied ways to improve the command and control of large formations. The French Army's *Provisional Instructions for the Tactical Employment of Large Units*, published in 1924, was the result of the board's research. The regulation, translated into English for instructional use at Fort Leavenworth, vividly describes the necessity of a type of directed telescope system. Explaining the functions and characteristics of the French General Staff as an auxiliary of command, the manual clearly outlines the necessity of general staff liaison officers possessing "superior qualities of general and professional knowledge, of tact, of devotion and of abnegation."[26] The absolute necessity of commanders being in constant touch with subordinate commands so as to fully understand the actual combat conditions, the status of soldiers and equipment, and the progress of battle was seen as paramount. The regulation also calls for general staff officers

to be sent, on a frequent basis, to subordinate commands to either verify combat conditions or clear up situations. The board emphasized that without effective liaison a major command would be unable to "animate the execution of its orders and to coordinate the efforts of all into a single, powerful and continuous force."[27]

Somewhat surprisingly, the most in-depth descriptions of the duties and responsibilities of liaison officers in a directed telescope role are found in the U.S. Army's *Command and Staff Principles*, a 1937 text at the Command and General Staff College, and the pre-World War II FM 101—5, *Staff Officers Field Manual.* These American manuals, like their foreign counterparts, describe the liaison system as the commanders' principal means of keeping in touch with the tactical situations. The small 1937 textbook, however, stresses the importance of the system throughout modern military history and fully describes what is required to make it work to its full effect. Accordingly, two purposes for liaison officers are identified in *Command and Staff Principles.* First, the liaison officers' primary duties are explained. According to the manual, the liaison officers' most important mission is to keep the commander up to date on the situation within subordinate units by providing information not available in routine reports, information that could ultimately prove critical in the commander's decision-making process. Second, liaison officers are required to dedicate themselves fully to facilitating communications at all levels in order to achieve a "concerted effort."

In discussing the necessity of liaison as a means of obtaining critical information and enhancing overall command and control, the Leavenworth publication emphasizes the point made by Napoleon over a century before that routine reports are often prepared carelessly due to either forgetfulness, stress, or simply communication problems. In appraising the professional and personal attributes of good liaison officers, *Command and Staff Principles* states that they should possess the following seven traits in order to be successful:

- Good judgment.
- Unfailing tact.
- Initiative.
- Sympathy, which implies a desire to help rather than to criticize.

- Acute perception, coupled with exactness and accuracy in determining facts.
- Ability to express themselves and deliver impartial reports in the clearest and most concise terms.
- Good tactical knowledge.[28]

The World War I lessons learned and the resultant liaison doctrine that emerged during the interwar years provided the foundations for the many directed telescope systems that followed in a second great war. Interwar command and staff liaison doctrine, however, was not entirely discarded with the advent of World War II. Many famous Allied and Axis field commanders, among them Montgomery, Patton, Rommel, and Manteuffel, used liaison systems. In an attempt to hastily update and refine World War I-based interwar liaison doctrine so it could support the new dynamic nature of highly mobile blitzkrieg warfare, uniquely different systems began to emerge. In principle, however, the new systems were remarkably similar to previous ones. The new systems shared several key characteristics with one another as well as with the many systems of the past. However, for a number of reasons—new technology and tactics being the most prominent—redefined directed telescope systems developed either a distinctly technical, tactical, or staff character.

World War II

The art of war experienced yet another technological revolution at the beginning of World War II. Consequently, commanders and military theorists sought ways to overcome the challenges associated with mobile warfare. The new tactics and technology obviously demanded increased decentralization. Complete decentralization, however, would risk battlefield chaos. In order to offset the decentralization trend, effective state-of-the-art means of enhancing command and control were eagerly sought. As in previous conflicts, operational experience early in the war emphasized the necessity of obtaining information on actual combat conditions outside of normal command channels. To meet this requirement, most major armies instituted modernized, yet traditional, versions of directed telescope systems during the conduct of the war. The Wehrmacht's staff information service, the Soviet's *STAVKA* "flying circus" observers, the American signal information and monitoring (SIAM) units, and the British Phantom service all had similar missions. Nevertheless, they differed somewhat in how the missions were accomplished.

Regardless, early wartime Axis and Allied professional literature emphasizes liaison as an important means of enhancing overall command and control in mobile warfare, and liaison was a primary responsibility of all these units.

The effectiveness of liaison, however, depended entirely on the commander's support of the system. All World War II armies had liaison officers; some armies used them poorly, others quite well. When used properly, these officers contributed to the highly successful command and control systems employed by several famous field commanders. The many liaison systems described in the interwar doctrine of the different armies were functional in basic design and theory, but often, the systems' effectiveness in the field suffered due to the lack of command support, especially when relatively incompetent, poorly trained officers were assigned liaison duties. On the other hand, there are many examples of successful liaison-minded commanders who appointed highly qualified young officers to perform the directed telescope duties: Rommel's lieutenants, Manteuffel's "Cowboys," Patton's Third Army staff and liaison officers, and, perhaps most of all, Montgomery's 21st Army Group liaison officers.

It was also discovered early in the war that the use of the radio as the prime means of controlling and coordinating front-line activities enhanced the overall effectiveness of liaison as a means of command and control. Liaison patrols extensively used long-range radios to report tactical conditions directly to general headquarters. The British Army's Phantom service and the U.S. Army's SIAM companies were two such units designed to supplement information from normal channels of communication with more timely and detailed data sent directly to general headquarters. Both units employed command liaison officers in mobile patrols, and their general responsibilities were strikingly similar to those of the aides-de-camp and general staff liaison officers of the past.

Phantom

Phantom originated in 1939 as the General Headquarters Liaison Regiment and was employed in Belgium and France in 1939—40. Phantom patrols bypassed normal reporting channels and sent information directly to corps and army headquarters. Information was also acquired by intercepting friendly radio traffic on unit command nets (a separate signals component originally known as the "J" service; "J" service intercept sections were combined with Phantom patrols in 1944).

The primary mission of Phantom, much like the directed telescope systems of the past, was to provide army and intermediate headquarters with the most accurate, confirmed, and timely frontline information available. This was accomplished by posting patrols at all major subordinate levels of command. Consequently, unlike systems of the past, Phantom was able to produce identical and simultaneous information at division and corps levels. Information was passed laterally to adjacent commands in the same manner. Phantom patrols carried out their missions by working at either the division headquarters or one of the division's forward units. Obtaining information from the most reliable sources available, the patrol would transmit the information in cipher to the Phantom squadron headquarters, which was usually collocated with army headquarters. If necessary, the information was then sent to Phantom regimental headquarters at army group. Once deciphered and verified, it was passed directly to the operations branch of the army headquarters. Concurrent with its transmission to the squadron, the Phantom detachment at the corps headquarters of the division where the message initially originated would monitor the coded information, decipher it, and provide it to the corps commander. The same message, monitored by Phantom detachments of the remaining divisions in the corps, was provided to their commanders accordingly. This system proved to be extremely effective. One World War II after-action report on the activities of Phantom detachments in the U.S. sector during Operation Overlord stated that information was usually "cleared" within one-half hour of the time of the event. Nevertheless, there were some "customary" problems with the system—Phantom liaison officers were sometimes considered "spies" from higher headquarters.

As with similar systems in the past, especially those employing general staff officers, many subordinate commanders and staff officers looked on Phantom liaison officers with suspicion, and their presence was often unwelcome. The reaction of one high-level U.S. commander to the arrival of his British Phantom liaison officer at Normandy was, "What the hell are you doing here?" or words to that effect.[29] Even though Phantom officers had virtually no authority, especially when compared to their general staff officer predecessors in the German and French Armies of a generation earlier, they had to explain their presence time and time again to their host commander. In order to dispel the false image of Phantom command liaison officers usurping command authority or "snooping," strict rules were established concerning the conduct of these officers and the control of the

information they obtained. For example, Phantom officers were required to transmit facts *not their own conclusions*, and every message had to cite the source of the information (usually a staff officer or the commander of the unit being supported). The following is a typical Phantom message transmitted from an American unit:

Aug 13, 1944
Phantom Msg No 7 130630 Third US Army
XV US Corps
SOURCE MAJ G-3, 5 ARMD Div, No Change in Forward Positions up to 0630 hrs CCB Concentrated Area Q4630-5630

TSO120952[30]

To overcome the higher headquarters inspector image, officers selected to serve on Phantom patrols were screened closely. The liaison officers were generally junior to the officers they had to work with, so they compensated for the disparity in rank and experience with personality, poise, tact, and energy. In addition, they had to have a good background in operations, physical and mental stamina, and, perhaps most of all, initiative. Simply stated, they had to "sell themselves" in order to be successful. Nevertheless, as the war progressed and Phantom proved itself the only reliable source of information on many occasions, most Allied commanders became sold on the system, and problems with the relationships between Phantom patrols and supported units decreased greatly. Eventually, Phantom became fully accepted at lower headquarters and often was viewed as a vital source of information, a directed telescope for both the higher, lower, and intermediate commanders.

Toward the end of the war, the mission of Phantom units changed considerably: they were to obtain more specific information, emphasizing battlefield intelligence rather than command information. For example, the Canadian First Army gave the following orders to its Phantom detachment, outlining what its focus should be:

1. OPS. General information on progress down to battalion level. Intentions—change of plans.
2. INT. Identifications and re-identifications *ad nauseum*. Gossip of the enemy.
3. AIR. Line for forward troops, or estimate ditto by any and every means.
4. R.E. Constant bridge information.
5. R.A.F. INT. Information on enemy air.
6. S.D. Headquarters of own troops down to battalions.
7. A.Q. Road surface or traffic news.[31]

In order to obtain the type of information being requested by general, intermediate, and subordinate headquarters, Phantom liaison patrols often found themselves behind enemy lines. At one time, a Phantom patrol was operating between the battalions of a German regiment. Phantom patrols were also the first units to make contact when the Allied pincers closed around the Falaise pocket. As a result, the British XXX Corps and U.S. VII Corps commanders were aware of the juncture before the lead division commanders knew about it.[32]

Clearly, the intelligence and command and control value of Phantom was obvious. Once again, however, routine channels of communication proved inadequate. Staff officers, even though instructed to keep higher headquarters informed, found themselves so overwhelmed by their other responsibilities that they were unable to pay full attention to sending information. The many fluid combat situations of the war, conditions that doctrinal communications systems such as wire could not adequately support, made Phantom an absolute necessity at times. Phantom and the "J" service deeply impressed the few U.S. commanders who were exposed to them early in the war during the closing months of the North African campaign. The Combined Operations Headquarters August 1943 Monthly Information Summary outlined the value of the system to all Allied commanders as follows:

> A. Phantom is a regiment solely engaged in obtaining information for the Commander it is ordered to serve. It is not a special signals unit.
>
> B. The patrols "J" Sections can be directed to any part of the battle from which the Commander required more detailed and more speedy information than he can obtain by normal channels.
>
> C. Though normally serving G(Ops), G(Int), and Air, the regiment has also frequently been of assistance to Staff and Services.
>
> D. The organization is flexible so that it can fit into any force.
>
> E. By the wide deployment of the regiment, and by the use of the W/T [radiotelegraphy] sets provided in the officer patrol and in the "J" Section to listen in to W/T nets, the regiment can give valuable information about flanking formations to Commanders at all levels. This is especially useful where the flanking formation is an Allied one.
>
> F. As mentioned above (para 9) the information available is often very detailed. The Commander being served should lay down how much detail he wants to receive.
>
> G. It is evident that when Phantom patrol officers are sent to formation HQ they must have access to the Commander or to his

principal Staff Officer on whose appreciation of the situation, their reports must be made.[33]

Signal Information and Monitoring (SIAM)

Patterned after the British Phantom, or more specifically the radio intercept "J" service used extensively by the British Eighth Army during the North African campaign, American SIAM units were first organized on a provisional basis by the U.S. Seventh Army in Sicily. Radio monitoring teams of attached division signal company intelligence platoons were consolidated at army level and placed under the direct operational supervision of the army signal officer. As with its British counterpart, SIAM proved highly successful in providing frontline information, verifying intelligence gained from other sources, and previewing reports sent through normal command channels.

Impressed by the results of Seventh Army's SIAM detachments, the U.S. Fifth Army organized its own provisional SIAM service prior to the Italian campaign. Organized in August 1943 along the same lines as the Seventh Army units, the Fifth Army SIAM service functioned directly under the signal intelligence section of the army signal office. Attached divisions, however, retained administrative control of the units. To increase the general effectiveness of SIAM units, a liaison service was added by the end of the year in order to supplement intercepted information. Similar to Phantom's liaison system, SIAM liaison officers served primarily as information gatherers interfacing with division operations and intelligence sections and reporting the information they obtained through the corps to army headquarters.

In July 1944, based on Fifth Army recommendations and on SIAM's successful record in combat, the War Department authorized the formal activation of a signal information and monitoring company. Consisting of approximately 350 officers and men, the SIAM company was organized into eight sections: a headquarters platoon, an army platoon, two corps platoons, and four division platoons.[34] Drawn from Fifth Army signal assets, the newly activated 3151st SIAM Company accompanied the U.S. Seventh Army in the invasion of southern France and remained with that command until the end of the war in Europe.

SIAM's mission was essentially the same as Phantom's. The SIAM company provided the field army, corps, and division with timely and accurate tactical information closely coordinated by liaison officers with principal staff officers of divisions on the

line. This information was obtained directly through monitoring the command nets of elements in contact with the enemy. In addition to its information-gathering mission, SIAM also provided a means of checking the overall signal security of radio nets operating within the field army. During the peak of operations in January 1945, the 3151st supported a field army of three corps (totaling twelve divisions) while concurrently maintaining effective liaison with the flank corps of adjacent armies.

Army Information Service (AIS)

Another U.S. field army to recognize the value of SIAM was the U.S. Third Army under General George S. Patton. After being informed of the nonavailability of a SIAM company until several months after the Normandy landing, the army commander, as an expedient measure, converted the 6th Cavalry Group, consisting of the 6th and 28th Cavalry Squadrons, into an information-gathering unit until a SIAM company could be activated. The group's mission was to operate a special liaison and monitoring system for the army commander and his staff. A number of means were used to accomplish the mission, the liaison officer not being the least.

Similar to SIAM and Phantom, the 6th Cavalry Group established direct communications with the army command post from frontline locations. However, unlike the other systems, the information bypassed intermediate command channels. Third Army also organized an intercept system similar to Phantom and SIAM that monitored battalion, regimental, divisional, and corps reconnaissance nets, transmitting the intercepted information directly to army headquarters. Of even greater significance, however, was the 6th Cavalry Group's extensive use of command liaison officer patrols.

Led by highly qualified junior officers, the Third Army's liaison patrols would routinely visit command and observation posts of units in contact with the enemy, as well as exchange information with subordinate division G2s and G3s. All these duties were accomplished by a single squadron with extra manpower and additional radio equipment. A second squadron performed the more traditional mission of conducting ground reconnaissance. Third Army considered the speed in which information was passed through the system as a primary prerequisite to success. Essential command and control information obtained from frontline liaison patrols was to be passed directly to the cavalry group headquarters collocated at the army's

advanced command post, eliminating the intermediate stages. The 6th Cavalry, commanded by Colonel Edward W. Fickett, was known officially as the Third Army Information Service, but it has also been popularly referred to as Patton's "Household Cavalry." Regardless of its title, the group provided an essential service and no doubt played a key role in Third Army's many successes.

Like other directed telescope units, Third Army's liaison officer patrols also had the "snooper" image problem. The fact that the army was consistently better informed than corps did not help the reputation of the liaison patrols, especially from the perspective of the division and corps headquarters. Commanders simply did not like higher-level headquarters' observers attached to their units who roamed throughout the area of operations gathering all sorts of information. The liaison officer was sometimes looked on as the parochial general staff officer or, even worse, a "Gestapo" agent sent to spy on the commander. Suspicions were usually allayed, however, when G3s realized that the liaison officers had standing orders not to send messages unless they were first checked and approved by the G3 or a responsible member of the operations section.

It was not long, however, before division staffs relied on the Third Army headquarters patrols for up-to-date information. In several instances toward the end of the war, divisions requested that patrols be attached to armored formations making deep attacks. Some subordinate commanders accepted the patrols as part of their own staffs, and as such, the patrol liaison officer briefed the host commander daily along with his other staff sections. Although the patrols were designed to serve all command levels, they were ultimately responsible to the army headquarters. In that regard, they provided a steady stream of tactical and operational information to the Third Army command post. As one Patton biographer stated, the patrols of the "Household Cavalry were behind Patton's uncanny knowledge of the situation."[35]

Army Tactical Information Service (ATIS)

As the campaign in Europe progressed, the U.S. Army's technically oriented information services (SIAM and the Third Army Information Service) became known collectively as the Army Tactical Information Service (ATIS). A General Board, chaired by General Patton, was convened in Europe shortly after the war to prepare a factual analysis of overall operations in

the European theater, and the ATIS was the focus of the board's study number 18. Stressing the importance of all information obtained by ATIS being sent directly to higher headquarters after first being coordinated by either the local commander or a senior staff officer, the postwar report emphasized that liaison officers are "servants of the whole command . . . not staff officers expected to interfere with or advise any lower echelon."[36] Even though the General Board concluded that the ATIS is an absolute necessity in modern war, it was decided that the monitoring of friendly nets should be a separate responsibility of existing signal units instead of the ATIS. The board recommended, with only one dissenting member (Patton the leading proponent of his own army's information service), that the ATIS become a part of the U.S. Army's standing peacetime establishment. General Eisenhower's comments concerning the board's findings were that the system was "a highly valuable instrument and one which commanders at all levels will soon learn to appreciate."[37] Nevertheless, Eisenhower also held a caveat to his praise; he expressed deep concern about the system's chances for abuse, stating that "unless it is carefully handled it can become a most objectionable thing, utilizing men and equipment to the detriment of personal relationships between commanders of the several echelons."[38]

Phantom and ATIS are excellent examples of modern, technically oriented directed telescope systems designed to meet the timeless needs for information by battlefield commanders. As with so many previous wars, routine reporting channels during World War II proved inadequate. Consequently, the information challenge, the commanders' eternal quest for certainty, was met with the marriage of a modern system—the radio—with traditional doctrine and practice—liaison. An even more classic means of attaining information in World War II, however, was the use of staff officers by General Patton and personal liaison officers by Field Marshal Montgomery.

Staff Systems

Patton did not rely solely on his Third Army Information Service to gather information on combat conditions but used his staff thoroughly in that capacity as well. Members of the Third Army staff were required to visit frontline units daily, frequently at night, gathering the latest information while, at the same time, providing encouragement. These staff visits also created a sense of understanding and cohesiveness throughout

the command that, according to many, could not be found within other U.S. field armies. This effective use of Patton's staff also reduced the number of reports needed from subordinate commands. In fact, Third Army required fewer reports than any other field army in the European theater. In addition to Patton's own staff visits, commanders and staffs of Third Army's corps and divisions were also encouraged to visit the front line daily. To Patton, 95 percent of command responsibility was to supervise the execution of orders, while only 5 percent was to devise the plan or order. Patton's command and staff visits served to verify directly that critical orders were being carried out. In essence, every staff officer in Third Army was charged with the traditional aide-de-camp role of being a command observer.

General Patton's information-gathering systems—Third Army Information Service, staff visits, routine reports, and Patton's practice of seeing for himself and positioning his headquarters well forward—made him one of the best informed commanders of World War II. Patton's directed telescope system contributed greatly toward his many successful campaigns in North Africa, Sicily, and Central Europe.

Field Marshal Bernard Montgomery, more than any other major World War II Allied commander, made the best use of liaison officers in their provincial role as a commander's directed telescope. Montgomery's young liaison officers had personal relationships with their colorful commander much like those of the traditional aides-de-camp of the Napoleonic era.[39] Stealing a leaf from Wellington's book, Montgomery made extensive use of his close circle of personal liaison officers in ways similar to the earlier British commander. Although technology and the art of war had changed drastically over the previous century, the principles and theory behind Montgomery's employment of these young officers remained almost classical. They were his "eyes and ears" as much as the aides-de-camp of the past were. With a combination of Ultra intelligence, Phantom intercepts and transmissions, and the insightful reports of his young liaison officers, Montgomery was able to maintain an extraordinary grip on the battle and campaign situations of his 21st Army Group. The general's World War I pledge of never being ignorant of frontline conditions was fully met as a high-level commander. His promise was more fulfilled by his liaison officer system than by any other separate information system because it provided him with accurate and timely information.

Residing with the field marshal at the tactical command post, Montgomery's liaison officers were part of a close circle of advisers and confidants just as their ancient predecessors, the *somatophylaxes* and *contubernales*, had been. The officers also held a great deal of respect and affection for Montgomery, often referring to him as "Master." Montgomery, in turn, described them as "the boys." This close, almost paternal, personal relationship between Montgomery and his liaison officers, like that of Grant and his aides, enabled these officers to express their observations and opinions freely to their leader. Despite his high regard for his subordinates, Montgomery never let his liaison officers' observations go unchallenged. Their observations had to be accurate, comprehensive, and concise in order to be accepted. As one liaison officer put it, interrogation by the "Master" was at times grueling.

Often sarcastically referred to as Montgomery's "Walkers" or his "Homing Pigeons," all Montgomery's liaison officers were young combat arms officers, relatively junior in rank (mostly majors). Usually, no more than six to eight of them reported to him at any one time, and within the group were also several American and Canadian Army officers used for liaison with the U.S. and Canadian divisions attached to the British 21st Army Group. All the liaison officers possessed great strength of character, initiative, independence, and courage. Montgomery personally handpicked them, and his standards for selection were extremely high. The young officers were all combat veterans, many of them had been wounded, and most had been decorated for bravery under fire. Their combat experience enabled them to report accurately and objectively on often critical tactical situations. Surprisingly, most had no military career ambitions either before or after the war. Montgomery's "boys" were outstanding officers in every respect. Often resented, but nonetheless invaluable, they formed a corps d'elite within the 21st Army Group staff.

Montgomery's liaison officers also had unusual influence and tremendous responsibility. Montgomery authorized them to "break through quicker than signals," and their battlefield reports were often the only basis for vital command decisions. The liaison officers were also often given potentially embarrassing duties, such as asking a division commander why his division was making such slow progress. Obviously, with such questions, they were quite often looked on with disfavor, especially in units not accustomed to their presence.

Montgomery's young liaison officers were, nevertheless, his special agents, his acknowledged "eyes and ears," reporting directly to him daily in a personal and candid manner. They had unrestricted license to travel anywhere within the 21st Army Group's area of operations and, as stated by several Montgomery biographers, were on "nodding terms with senior commanders and the many important politicians who would periodically visit Montgomery's CP [command post]." Like so many observer systems of the past, and echoing General Eisenhower's postwar apprehensions about the ATIS, Montgomery's system was open to abuse. It is a credit to both the British commander and his liaison officers that there is no evidence of the system being misapplied.

What prevented the system from becoming an army group spy ring was, for the most part, the personalities of the selected officers. They were junior officers, modest in the presence of superiors, and perhaps most importantly, they did not gossip. Utterly devoted to Montgomery and the army group as a whole, these liaison officers routinely risked death to obtain the information requested. In fact, a high percentage of them were killed in action. Their routine exposure to subordinate commanders and staff officers, their professionalism, their personality and courage, and the confidence the army group commander had in them eventually resulted in their presence being fully accepted, if not desired, in many of Montgomery's subordinate headquarters (even in the division command posts of the U.S. First Army).

The simplicity of the system also contributed greatly to its success. After the morning briefings, the liaison teams would travel to the front to obtain information. The following provides the type of information Montgomery requested from a Canadian Army liaison officer, Major Dick Malone:

> Find out the form of the unit, no highlights, exact details. How far forward are his patrols . . . the real FLT [frontline trace]? What are his Battalion HQs and company CP locations? What's the real ammunition status along the front line? Esprit? How many POWs taken? How many casualties? What did the commander do today, what's his plan for tomorrow? Personally see the commander and give him your report.[40]

Winston Churchill, in one of his World War II history volumes, *Triumph and Tragedy*, provides one of the best overall descriptions of Montgomery's liaison system. Churchill reveals the means in which the system evolved and its value and benefit to modern command and provides striking similarities with systems of the past:

> For nearly two hours a succession of young officers, of about the rank of major, presented themselves. Each had come back from a different sector of the front. They were the direct personal representatives of the Commander-in-Chief, and could go anywhere and see anything and ask any questions they liked of any commander, whether at the divisional headquarters or with the forward troops. As in turn they made their reports and were searchingly questioned by their chief the whole story of the day's battle was unfolded. This gave Monty a complete account of what had happened by highly competent men whom he knew well and whose eyes he trusted. It afforded an invaluable cross-check to the reports from all the various headquarters and from the commanders. "I thought the system admirable, and indeed the only way in which a modern Commander-in-Chief could see as well as read what was going on in every part of the front."[41]

Field Marshal Montgomery considered his liaison system absolutely invaluable. Time and again in his memoirs as well as in his numerous biographies, his almost classic directed telescope system is cited as playing an instrumental role in the successful command and control of the 21st Army Group. Through his own eyes and those of his trusted liaison officers, Field Marshal Montgomery is credited with never losing a firm grip on the tactical situation or the "hearts and minds" of his soldiers. His use of young, personable, and courageous liaison officers was one of his personal leadership characteristics, yet a historically proven and entirely traditional element of effective command.

Post-World War II

Despite official postwar reports of every type (Army ground force observer reports, general board documents, after-action reports, and so forth), articles in professional journals, and even entire books describing the value of liaison detachments, the liaison units disappeared shortly after the end of the war. Their existence, a wartime necessity, proved to be an unaffordable peacetime luxury. Greatly reduced strength and equipment tables resulted in skilled officers and expensive radio equipment being put to better use elsewhere. Several serious proposals, one made as late as 1958, called for the formation of Phantom- or SIAM-type battalions in the U.S. Army Reserve or Army National Guard. They were summarily rejected as no longer being needed on the modern battlefield. As the U.S. Army lost its operational focus, the importance of liaison units in the command and control of corps and field armies became less visible.

In a 1970 book, *Alternative to Armageddon*, a number of distinguished military men, including U.S. Generals Lyman L.

Lemnitzer and I. D. White, as well as German General von Manteuffel, propose the resurrection of a Montgomery-type liaison system in the U.S. Army. Utilizing deputy or assistant commanders at different echelons as supervisors, groups of highly qualified officer observers would perform duties similar to those of Montgomery's "Walkers." The generals' proposal, based on their individual as well as collective experiences, emphasizes that outside observers from higher headquarters provide both a "silent" and an extremely effective means of encouraging factual reporting and saving precious time in getting critical, often intangible information to the force commander.

The only liaison system in recent wars comparable to the World War II systems has been the Israeli Defense Forces' Phantom-type command liaison patrols. Led by majors in half-tracks or armored personnel carriers, these patrols provided front-line information directly to army command from widely spread, rapidly moving combined arms columns operating in the Sinai during the 1967 and 1973 Middle East Wars. Other than the Israeli experience, it appears that the many World War II command liaison systems, despite their recognized effectiveness, have been almost totally overlooked as an effective means of enhancing the command and control of modern armies.

V. CONCLUSIONS

This study has illustrated a number of battlefield command and control systems that could be used in the future. In that regard, several conclusions can be drawn from this brief analysis of both traditional and unique means of exercising command and control in combat, especially in the context of the U.S. Army's new doctrine.

Throughout military history, regardless of the era or period, changes in force design, advances in technology, new staff configurations, and the several revolutions in the art of war brought on by these changes, the battlefield commanders' driving quest for certainty concerning battle conditions has remained a historical constant. Within the overall search for certainty, a continuum of command and control functions existed (see table 1). In his work, *On War*, Clausewitz identifies uncertainty, along with exertion, danger, and chance, as the key elements of war. He also emphasizes that most often "the commander finds himself in a constant whirlpool of false and true information." Lacking clear, objective information, he often has to trust either the "talents at hand" or pure luck. The effective use by commanders of their liaison officers has resulted in the formation of the many information systems reviewed in this study.

Table 1. Continuum of Command and Control Functions

Passive ——— **Authority** ——— **Active**			
Couriers	***Info Collectors***	***Observer/Evaluators***	***Executors***
Somatophylaxes *Contubernales* Napoleonic aides	*Somatophylaxes* *Contubernales* Napoleonic aides World War II liaison officers Phantom SIAM AIS ATIS	21st Army Group liaison officers (Assess capabilities, recommend changes, evaluate intangibles)	Prussian General Staff (Convey intent, direct changes)

A commander's timeless necessity for objective, accurate, and timely battlefield information has been met by different means: aides-de-camp in the primitive and Napoleonic era and, in the wars of the modern period, liaison officers or general staff observers and signals monitors. The existence of information gatherers in one form or another has continued to play a vital role

in command for thousands of years. Battlefield command and control realities dictated the use of aides-de-camp and liaison officers as information gatherers even after full staffs came into existence. From Alexander the Great to the Israeli Defense Forces, these information-gathering systems, when properly used in a directed telescope role, have proven to be instrumental components of effective command and control in combat.

If the systems of the past have similarities, so have the officers that served in them. Normally, directed telescope functions were performed by aides, liaison officers, or general staff officers with similar characteristics. They were usually young, highly charismatic, energetic, brave, independent, physically fit, mentally alert, and relatively junior in rank. In the more recent periods of military history, they became a well-trained body of professionally skilled and trained observers, often belonging to a separate elite corps of officers—the general staff. Their character, judgment, tact, and trust have been highly regarded by seniors and subordinates alike, and as a result, they have enjoyed a close, often intimate, relationship with commanders and higher-ranking staff officers.

Even though the duties of these officers have differed greatly in practice, they have remained the same in principle. Primarily, these officers observed and, on occasion, personally evaluated frontline battlefield conditions. Routinely, they were charged with seeking out intangible information, such as that pertaining to morale, esprit, and cohesiveness, which was usually not found in routine reports sent up the chain of command. However, they were not restricted to this role, for they also verified the execution of orders and the adherence to policies. Also, of perhaps greater importance, they ensured that the commander's intent was being followed. They were least successful when strictly confined to a courier role. As representatives of their commanders, the liaison officers often issued orders to superiors in their commanders' names—an aspect of their role often looked on with extreme disfavor and, on occasion, well-justified suspicion. Breaking the chain of command in this fashion, regardless of the outcome, was considered a negative trait by other links in the chain of command.

The history of the directed telescope system has not always been positive. Numerous historical events confirm the worst fears of those who view the system as a breach of the proper relationship between senior and subordinate commanders. There have been many instances of abuses by aides, observers, and liaison

officers who were granted excessive authority. Even worse, sometimes commanders took these officers' observations at face value, which resulted in command decisions that brought about failure in battle. These negative aspects of the system, however, were more often the exception than the rule. Generally speaking, the value of the system far outweighed any problems associated with its sensitive operations.

If we accept the overall worth of the directed telescope system as it has been successfully applied in the past by many great military leaders, what implications exist for its consideration in the development of modern command and control doctrine, or has technology finally made the directed telescope obsolete? Certainly, today's AirLand Battle doctrine, especially its deep-attack aspects, presents one of the greatest challenges ever in the development of effective command and control. A fundamental characteristic of the type of leadership inherent in current U.S. doctrine is that all operations, at every echelon, must proceed from a full understanding of the commander's intent. Helping to establish, clarify, and gain commitment to the commander's intent has been a classic role of past aide and command liaison systems.

Today's functional staff officers, even more than their World War II predecessors, will be consumed by their duties; they will find it exceedingly difficult to relay important tactical and operational information and to monitor the rapidly changing battlefield. The AirLand Battle doctrine requirement for staff officers to concentrate the operational focus ahead in time and space, combined with the technology enabling them to do so, will result in an even greater influx of combat information. During World War II, SIAM, Phantom, and ATIS were created to augment heavily burdened conventional reporting systems by picking out salient information and sending it directly to the command that needed it most. As a result, the World War II systems enabled high-level commanders and staffs to anticipate and assess situations rapidly, thus allowing them to gain, maintain, or retain the tactical and operational initiative. Rapidly and accurately obtaining vital battlefield information specifically requested by commanders enabled them to respond quickly and decisively in countless situations, greatly increasing the overall agility of their operations. The vertical and horizontal liaison functions of the systems also had tremendous command and control implications in the area of synchronization of overall operations. The reconnaissance role of several modern systems

(Phantom and Patton's "Household Cavalry") provided the commander with an additional means to "see deep" in terms of gathering precise and direct firsthand intelligence on the enemy, assessing his capabilities, and predicting his actions. Clearly, the accomplishments of these systems of the past have application in the development of contemporary command and control doctrine.

NOTES

1. James D. Hittle, *The Military Staff: Its History and Development*, 3d ed. (Harrisburg, PA: Military Service Division, Stackpole Co., 1961), 24.
2. Martin Van Creveld, "Command" (Washington, DC: Department of Defense/ Net Assessment, 1979), 31.
3. Ibid., 50.
4. Ibid., 36.
5. F. W. von Zanthier, *Versuch Uber die Marsche der Armeen, die Lager, Schlachten und die Operations-Plan* (Dresden, 1778), as cited in Van Creveld, "Command," 54.
6. *Correspondence*, XIII, no. 10854, 21, 9, 1806 cited in Van Creveld, "Command," 76.
7. Ibid., 77.
8. Samuel George Peregrine Ward, *Wellington's Headquarters: A Study of the Administrative Problems in the Peninsula, 1809—1814* (London: Oxford University Press, 1957), 36.
9. Ibid., 39.
10. Horace Porter, *Campaigning With Grant* (New York: The Century Co., 1907, c1897), 32.
11. Ibid., 37—38.
12. William T. Sherman, *Memoirs of General William T. Sherman* (New York: Da Capo Press, 1984), 22.
13. Hugh Cuthbert Basset Rogers, *The Confederates and Federals at War* (New York: Hippocrene Books, 1973), 135.
14. Sherman, *Memoirs*, 402.
15. Armistead Lindsay Long, *Memoirs of Robert E. Lee* (New York: Stoddart & Co., 1886), 161.
16. Clifford Dowdey, *Lee* (Boston, MA: Little, Brown and Co., 1965), 272.
17. Long, *Memoirs*, 619.
18. Van Creveld, "Command," 142.
19. J. F. C. Fuller, *Generalship: Its Diseases and Their Cure—A Study of the Personal Factor in Command* (Harrisburg, PA: Military Service Publishing Co., 1936), 61.
20. Bernard Law Montgomery, Montgomery of Alamein, 1st Viscount, *Memoirs of Field Marshal the Viscount Montgomery of Alamein* (Cleveland, OH: World Publishing Co., 1958), 34.
21. George P. Winton, "The Liaison Officer—Past, Present and Future," *Military Review* 24 (July 1944):44.

22. George C. Marshall, *Memoirs of My Service in the World War, 1917—18* (Boston, MA: Houghton Mifflin Co., 1976), 183.

23. Fuller, *Generalship*, 64.

24. Great Britain, Army, *Field Service Regulations*, vol. 3, *Operations—Higher Formations* (London: His Majesty's Stationery Office, 1935), 30.

25. Ibid., 31.

26. United States Army General Service Schools, *Provisional Instructions for the Tactical Employment of Large Units* (Fort Leavenworth, KS: The General Service Schools Press, 1924), 4.

27. Ibid., 35.

28. United States Army Command and General Staff School, *Command and Staff Principles (Tentative)* (Fort Leavenworth, KS: The Command and General Staff School Press, 1937), 157.

29. Howard Sargent, "Phantom Passes the Word," *Army* 8 (March 1958):34.

30. "Phantom Operations in U.S. Sector, Operation Overlord" (N.p., n.d.).

31. Ibid.; and Sargent, "Phantom," 34.

32. John North, *North-West Europe 1944—5: The Achievement of 21st Army Group* (London: Her Majesty's Stationery Office, 1953), 73.

33. Supreme Headquarters Allied Expeditionary Force, "Combined Operations Headquarters, Monthly Military Information Summary #4" (August 1943), 4.

34. Walter B. Potter, "SIAM: Signal Information and Monitoring," *Military Review* 25 (May 1945):28.

35. Ladislas Farago, *Patton: Ordeal and Triumph* (New York: Obolensky, 1964), 493.

36. United States Forces, European Theater, General Board, "Army Tactical Information Service," Study no. 18 (20 November 1945), 3.

37. Ibid., app. 2, 2.

38. Ibid.

39. Reginald William Thompson, *Montgomery, the Field Marshal* (New York: Charles Scribner's Sons, 1969), 223.

40. Dick Malone, *Missing From the Record* (Toronto, Canada: Collins, 1946), 46.

41. Winston Churchill, *The Second World War*, vol. 6, *Triumph and Tragedy* (Boston, MA: Houghton Mifflin Co., 1953), 259.

BIBLIOGRAPHY

Allen, Robert S. *Lucky Forward: The History of Patton's Third U.S. Army*. New York: Vanguard Press, 1947.

Appianus. *Roman History VIII*. Vol. 2. Translated by Horace White. Cambridge, MA: Harvard University Press, 1972.

Aston, George Grey, Sir. *Staff Duties and Other Subjects*. London: H. Rees Co., 1913.

Blumenson, Martin. *The Patton Papers*. Vol. 2. *1940—1945*. Boston, MA: Houghton Mifflin Co., 1974.

Bronsart von Schellendorf, Paul Leopold David Eduard Heinrich Anton. *The Duties of the General Staff*. London: Her Majesty's Stationery Office, 1893.

Brownlow, Donald Grey. *Panzer Baron: The Military Exploits of General Hasso von Manteuffel*. North Quincy, MA: Christopher Publishing House, 1977.

Burne, Alfred H. *Lee, Grant and Sherman: A Study in Leadership in the 1864—65 Campaign*. Aldershot, England: Gale & Polden, 1938.

Chalfont, Arthur Gwynne Jones, Baron. *Montgomery of Alamein*. London: Weidenfeld and Nicolson, 1976.

Chandler, David G. *The Campaigns of Napoleon*. New York: Macmillan Publishing Co., c1966.

_____. *Marlborough as Military Commander*. New York: Charles Scribner & Sons, 1973.

Church, William Conant. *Ulysses S. Grant and the Period of National Preservation and Reconstruction*. New York: G. P. Putnam's Sons, 1897.

Churchill, Winston. *The Second World War*. Vol. 6. *Triumph and Tragedy*. Boston, MA: Houghton Mifflin Co., 1953.

Dayan, Moshe. *Diary of the Sinai Campaign*. London: Weidenfeld & Nicolson, c1966.

De Guingand, Francis Wilfred, Sir. *Generals at War*. London: Hodder & Stoughton, 1964.

_____. *Operation Victory*. New York: Charles Scribner's Sons, 1947.

Dowdey, Clifford. *Lee.* Boston, MA: Little, Brown & Co., 1965.

Eisenhower, John S. D. "The Army Tactical Information Services." *Military Review* 29 (August 1949):33—35.

Essame, Hubert. *Patton: A Study in Command.* New York: Scribner & Sons, 1974.

Farago, Ladislas. *Patton: Ordeal and Triumph.* New York: Obolensky, 1964.

Freeman, Douglas Southall. *Lee's Lieutenants.* 3 vols. New York: Scribner and Sons, 1942—44.

Fuller, J. F. C. *Generalship: Its Diseases and Their Cure—A Study of the Personal Factor in Command.* Harrisburg, PA: Military Service Publishing Co., 1936.

Great Britain. Army. *Field Service Regulations.* Vol. 3. *Operations—Higher Formations.* London: His Majesty's Stationery Office, 1935.

_____. 8th Army. *8th Army Commanders Notes.* 1942.

Hamilton, Nigel. *Master of the Battlefield: Monty's War Years, 1942—44.* New York: McGraw-Hill, 1983.

Hills, R. J. T. *Phantom Was There.* Altrincham, London, England: St. Ann's Press, 1951.

Hittle, James D. *The Military Staff: Its History and Development.* 3d ed. Harrisburg, PA: Military Service Division, The Stackpole Co., 1961.

Irving, David. *The Trail of the Fox.* New York: Avon Books, 1977.

Koch, Oscar W. *G-2: Intelligence for Patton.* Philadelphia, PA: Army Times Publishing Co., 1971.

Lewin, Ronald. *The Life and Death of the Afrika Korps.* New York: Quadrangle/New York Times Book Co., 1977.

_____. *Montgomery as Military Commander.* New York: Stein & Day, 1971.

_____. *Rommel as Military Commander.* London: B. T. Batsford, 1968.

Long, Armistead Lindsay. *Memoirs of Robert E. Lee:* . . . New York: Stoddart & Co., 1886.

Malone, Dick. *Missing From the Record.* Toronto, Canada: Collins, 1976.

_____. "You Yanks Never Gave Monty His Due." *Saturday Evening Post* 219 (21 September 1946):12—13, 102, 104, 107, 109—10, 112, 117—18, 120, 122, 124, 127, 129.

Marshall, George C. *Memoirs of My Service in the World War, 1917—1918.* Boston, MA: Houghton Mifflin Co., 1976.

Miksche, Ferdinand Otto. *Blitzkrieg.* London: Faber and Faber, 1941.

Mitcham, Samuel W. *Triumphant Fox: Erwin Rommel and the Rise of the Afrika Corps.* New York: Stein and Day, 1984.

Montgomery of Alamein, Bernard Law Montgomery, 1st Viscount. *High Command in War.* London: His Majesty's Stationery Office, 1946.

_____. *The Memoirs of Field Marshal the Viscount Montgomery of Alamein.* Cleveland, OH: World Publishing Co., 1958.

Moorhead, Alan. *Montgomery, a Biography.* New York: Coward-McCann, 1946.

North, John. *North-West Europe, 1944—5: The Achievement of 21st Army Group.* London: Her Majesty's Stationery Office, 1953.

Olmstead, Joseph A. *Leadership at Senior Levels of Command,* Washington, DC: Division no. 4 (Infantry), Human Resources Research Office, 1965.

Patton, George S. *War as I Knew It.* Boston, MA: Houghton Mifflin Co., 1947.

Perkins, E. J. "The Military Staff—Its History and Development." *Military Review* 33 (September 1953):81—88.

"Phantom Operations in U.S. Sector, Operation Overlord." N.p., n.d.

Porter, Horace. *Campaigning With Grant.* New York: The Century Co., 1907, c1897.

Potter, Walter B. "SIAM: Signal Information and Monitoring." *Military Review* 25 (May 1945):28—31.

Rogers, Hugh Cuthbert Basset. *The Confederates and Federals at War.* New York: Hippocrene Books, 1973.

_____. *Napoleon's Army*. New York: Hippocrene Books, 1974.

Rothenberg, Gunther E. *The Art of Warfare in the Age of Napoleon*. Bloomington: Indiana University Press, 1978.

Sargent, Howard. "Phantom Passes the Word," *Army* 8 (March 1958):33—35.

Schmidt, Heinz Werner. *With Rommel in the Desert*. London: Harrup & Co., 1951.

Sherman, William T. *Memoirs of General William T. Sherman*. New York: Da Capo Press, 1984.

Supreme Headquarters Allied Expeditionary Force. "Combined Operations Headquarters, Monthly Military Information Summary #4." August 1943.

Taylor, Walter Herron. *Four Years With General Lee:* . . . New York: D. Appleton and Co., 1878, c1877.

Thompson, Reginald William. *Montgomery, the Field Marshal*. London: Allen & Unwin, 1969.

United States Army Command and General Staff School. *Command and Staff Principles (Tentative)*. Fort Leavenworth, KS: The Command and General Staff School Press, 1937.

United States Army General Service Schools. *Provisional Instructions for the Tactical Employment of Large Units*. Fort Leavenworth, KS: The General Service Schools Press, 1924.

_____. *Tactical and Strategical Studies: A Group of Armies*. Fort Leavenworth, KS: The General Service Schools Press, 1923.

United States Forces, European Theater. General Board. "Army Tactical Information Service." Study no. 18. 20 November 1945.

Van Creveld, Martin. "Command." Washington, DC: Department of Defense/Net Assessment, 1979.

Wallace, Brenton Greene. *Patton and His Third Army*. Harrisburg, PA: Military Service Publishing Co., 1946.

Ward, Samuel George Peregrine. *Wellington's Headquarters: A Study of the Administrative Problems in the Peninsula, 1809—1814*. London: Oxford University Press, 1957.

Webster, Graham. *The Roman Imperial Army of the First and Second Centuries A.D.* New York: Barnes & Noble, 1979.

Winton, George P. "The Liaison Officer—Past, Present and Future." *Military Review* 24 (July 1944):43—46.

Yale, Wesley W. "Command and Control in the German Army." *Armor* 128 (September-October 1969):2—6.

Yale, Wesley W., I. D. White, and Hasso von Manteuffel. *Alternative to Armageddon: The Peace Potential of Lightning War.* New Brunswick, NJ: Rutgers University Press, 1970.

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